

GROUP ASSIGNMENT

CT026-3-1-SAAD

SYSTEMS ANALYSIS AND DESIGN

HAND OUT DATE: 21 Mar 2024

HAND IN DATE: 30 June 2024

LECTURER: SIWA KUMARAN A/L THANNIMALAI

NAME	TP NUMBER
ANAS WADHAH MOHAMMED QAID	TP077401
SHAYVITHA MAHENDRAN	TP078615
MANON NIIMI	TP075090
SEIF ELSAYED ABDELRAZEK NASR	TP075563
ABDELMAKSOUD	
HISHAM A. H. LAZEN	TP077575
ZETA ZHAFIRA	TP075044
KADYROVA BERMET NURLANOVNA	TP071120

Table of Contents

1.0 Introduction4
1.1 Introduction of the customer
1.1 Introduction of the company4
1.2.1 Vision & Mission
1.3 Rich Picture Diagram7
2.0 Problems and Proposed Solutions
2.1 Problem: Manual Order Processing
2.1.1 Proposed Solution
2.2 Problem: Limited Payment Options10
2.2.1 Proposed Solution
2.3 Problem: Manual Coordination with Delivery Services11
2.3.1 Proposed Solution
2.4 Problem: Limited Customer Interaction and Management 12
2.4.1 Proposed Solution
2.5 Problem: Inventory Management Challanges 13
2.5.1 Proposed Solution
2.6 Aims and Objectives
3.0 Project Framework15
3.1 Software Development Life Cycle (SDLC) Phases15
3.1.1 Planning
3.1.2 Analysis
3.1.3 Design
3.1.4 Implementation

3.1.5 Security and Support	
3.2 Gantt Chart	
3.3 Workload Matrix	
4.0 Feasibility Study	20
4.1 Technical Feasibility	
4.2 Schedule Feasibility	
4.3 Operational Feasibility	
4.3.1 PIECES Framework	22
4.4 Economic Feasibility	25
4.4.1 Cost-Benefit Analysis	
5.0 System Analysis	28
5.1 Data Gathering using Surveys and Questionnaires	28
5.2 Functional Requirements	
5.3 Non-Functional Requirements	
6.0 Design Diagram	
6.1 Context Diagram	
6.2 Level-0 DFD	
6.3 Entity Relationship Diagram (ERD)	
7.0 Interface Design	
7.1 Prototype	
7.2 GUI Design Principles	54
7.3 Input Design Principles	56
8.0 Individual Component	57
8.1 Shayvitha Mahendran TP078615 (Project Manager)	57

8.2 Manon Niimi TP075090 (System Analysis)
8.3 Seif Elsayed Abdelrazek Nasr Abdelmaksoud TP075563 (Programmer)60
8.4 Hisham Lazen TP077575 (User Interface (UI) Designer)63
8.5 Zeta Zhafira TP075044 (Tester)65
8.6 Kadyrova Bermet TP071120 (Database Designer)67
8.7 Anas Wadhah TP077401 (Network Engineer)69
9.0 Advanced Design71
9.1 Level-1 DFD71
9.2 Data Dictionary76
References

1.0 Introduction

1.1 Introduction of the customer

Gorgeous Gift is a well-known local gift shop set in the centre of the city.



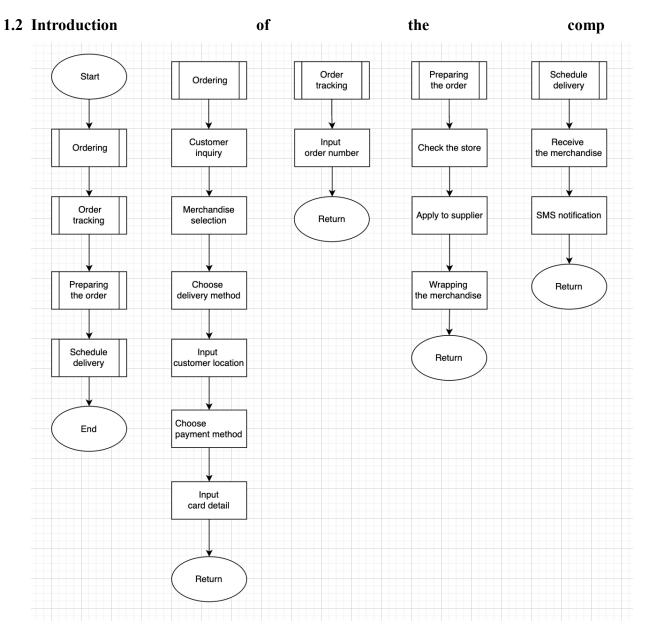
Figure 1.1.1 shows Gorgeous Gift shop

Currently, Gorgeous Gifts has been managing orders manually through a system. The retailer staff takes down the order details either with a pen in an order book or using MS Excel sheet after receiving an order. Their customers have several choices which can be wrapping a gift, adding accessories or perhaps giving a card with a personal message. Different payment methods exist but they range from the traditional banking channel to e-Wallet services, customers need to produce proof of payment through snap photo receipts. Once payment is completed, Gorgeous Gifts will begin the process of wrapping the gifts and arranging for a smooth and secure delivery of the gift items. SMS notifications are automatically sent to the customer after the shipments have been successfully delivered indicating a smooth shopping operation.



Figure 1.1.2 shows Gorgeous Gift's bestseller (Scented Candles)

Also, the store manager closely tracks down stock levels to make sure new pieces are ordered quickly from competent suppliers. The efficient manual system nevertheless, has the problem of failing at the busiest times causing the disruption of operation and customer satisfaction. Therefore, the firm has proposed to develop an information system that would be able to improve processes and increase scalability.



any



Figure 1.1.3 shows Nexus Development's Logo

Nexus Development is an IT-based development company that helps their clients to build a website based on their needs and demands. Nexus Development offers cutting-edge technology and user-friendly features in their websites. They focus more on creating long-lasting and innovative solutions for their clients. Also, they are determined to improve their service to thrive better in the current market and also the industry. Moreover, Nexus Development can satisfy the needs of their customers as well as improve and enhance the market and reputation of the company. Nexus Development is also focused on collaborating with new business partners in the industry. Thier primary goal is to expend and transform company into a remarkable one.

1.2.1 Vision and Mission

We envision a future where user interfaces seamlessly integrate with human intuition, unlocking the full potential of technology for both businesses and users.

Motto

Click. Connect. Captivate

1.3 Rich Picture Diagram

2.0 Problem and Proposed Solution

2.1 Problem: Manual Order Processing

Title	Manual Order Processing
Description	The sales team has to do the order recording by hand, which
	involves writing down customer requests down, item details, and
	quantity on paper or in a physical record book.
Causes	This method is time-consuming and error-prone because it
	depends on human accuracy and thus would lead to the
	occurrence of problems like missing orders, mistakenly written
	data, or wrong entries.
Effects	Incorrect delivery can produce extra costs of returning goods by
	taking more time and annoying customers about the company.
	Customers can potentially lose confidence and trust when errors
	or10 delays lead to a lack of satisfaction among them, which, in
	the long run, may decrease their tendency to order again.

2.1.1 Proposed Solution

Title	Automated Order Management System
Solution	Automation performs a function ensuring faster order
	registration and coordination beyond a manual mode. This helps
	a lot to allow the minimum of errors and mistakes to occur, thus
	the efficiency of operations of the company greatly improves.
	Companies will save time and have reduced human resources
	costs by automating these critical order management activities.
	These tasks, in turn, will increase productivity, and faster order
	fulfillment, and thus enhance customer satisfaction.

Title	Limited Payment Options
Description	Consumers might face difficulties while trying to process a payment since the accepted payment methods would be just cash or a limited credit card, which therefore may be inconvenient or stressful when the person prefers other types of payments.
Causes	This could reduce their convenience and also correspondingly, the businesses could miss on sale transactions. If businesses do not offer a sufficient variety of payment options, this can be a problem for some customers as they may leave their purchases and look for other retailers who offer a more friendly service regarding payments.
Effects	Prospective buyers may end up pulling back or feeling doubtful when they see that their preferred method of payment is not available. This might conclude that missed sales opportunities adversely affect revenue streams and might even lead to business growth being hindered and customer commitment levels being affected.

2.2 Problem: Limited Payment Options

2.2.1 Proposed soluton

Title	Diversified Payment Gateway Integration
Solution	Integrating many payment gateways into the system accomplishes the
	objective of offering customers a wide range of payment procedures
	and also creating better customer experiences. Businesses will use
	multiple payment methods to be better suited to smooth down
	purchase barriers, thus making it easier to complete transactions and
	users' satisfaction improve as well.

Title	Manual Coordination with Delivery Services
Description	Communicating with delivery agencies individually is a labor- intensive procedure requiring contacting various delivery companies, looking through the service provider's offerings, reaching agreements on the delivery plan, and so on.
Causes	As the coordination of manual controls is prone to errors, hold-ups, and operational issues due to the very nature of these operational inefficiencies, it is always possible that the end-to-end process can have less-than-perfect outcomes with less smooth workflow.
Effects	Miscommunication, late deliveries, and also poor brand image as a result of faulty logistics management. However, these drawbacks can adversely impact the smooth running of the process with the potential of becoming disruptive which can in turn taint customer experience, hinder business growth, and pose constraints for success.

2.3 Problem: Manual Coordination with Delivery Services

2.3.1 Proposed Solutiom

Title	Integrated Delivery Management System
Solution	Through the application of an integrated system of dispatching
	deliveries, businesses will have their processes streamlined and
	automated which in return leads to higher accuracy and timeliness of
	deliveries. In addition, the overall efficiency is enhanced and overall
	customer satisfaction levels go up.

Title	Limited Customer Interaction and Management
Description	The current communication channels are in a state of disarray, thus creating a delay in the responses and reducing transparency. Customers could be faced with the position of dealing with inquiries or orders because of the absence of a centralized communication platform.
Causes	The limited centralized communication platforms harm business performance as far as customer interaction and order management are concerned. Diversified communication channels, such as email, phone, and social networks, make it hard for store staff to deal with customer inquiries timely and to order efficiently.
Effects	Failure to respond to clients promptly, lack of transparency, and difficulties in managing inquiries and orders could lead to consequences varying from loss of reputation to more significant business issues. Such action may come in the form of negative customer reviews, loss of current customers with reduced commitment, and the possible forfeiture of future opportunities for business endeavors.

2.4 Problem: Limited Customer Interaction and Management

2.4.1 Proposed Solution

Title	Centralized Customer Relationship Management (CRM) System
Solution	Employing a comprehensive CRM solution will allow us to keep a record of all the customer care-related and order-related issues, thereby enhancing the communication between us and our customers. A tailored CRM system provides a single point for customer interactions and for tracking the orders/addressing inquiries system so that, customer satisfaction and loyalty increase.

2.5 Problem: Inventory Management Challanges

Problem

Title	Inventory Management Challenges
Description	Manual inventory management processes and feedback lag cause a
	downturn in inventory resulting in missed sales opportunities. To give
	an example, crippling inventory management, compounded with the
	reduced visibility into the stock levels, ends up with the stock running
	out or overstocking problem. Such problems could preclude new sales
	capacities or the need for extra storage space.
Causes	The manual operation suffers from such drawbacks as errors, and,
	consequently, inexactness of the inventory management. The inability
	to grasp the time specificity is the key issue in stock management due
	to the lack of real-time visibility and makes it very hard and
	impossible for the store staff to track inventory and make efficient
	decisions.
Effects	Besides experiential gaps during which the store incurs stockouts,
	overstocking as well as lost sales opportunities that may arise as a
	result of mismanaged inventory could affect the general operations
	and finances of the store. In this sense, these issues may cause a surge
	in discontent customers; their decreased revenue, and loss of profits,
	which later on may restrict the sustained growth and success of the
	business as a whole.

2.5.1 Proposed Solution

Title	Real-time Inventory Management System
	The real-time inventory management system, as an example, promotes
Solution	the ability to monitor variations in stocks and movement and improves
	inventory management. The livestock management system helps in
	the real-time monitoring of inventory level movement and setting
	stock level triggers so as to ensure optimal stock level and avoid or
	rectify issues like low or overstock.

2.6 Aim and Objectives

Aim:

The aim of the proposed system is to develop an e-commerce platform Gorgeous Glow Candles that embodies the vision of designing and offering the best quality wax candles with warm and tempting scents, creating a cozy and inviting home atmosphere for customers.

Objectives:

1. Product Showcase: Create an attractive and visually appealing product display case that highlights the quality of Gorgeous Glow Candles by showcasing its warm and seductive aroma to provide a comfortable and pleasant feeling.

2. Seamless Ordering Experience: Develop a seamless ordering process that allows customers to easily browse products, select the desired items, and complete transactions efficiently, providing a convenient and customized shopping experience.

3. Direct Payments: Integrate a secure and fast payment gateway to allow customers to make immediate payments for their candle purchases, ensuring smooth and hassle-free transactions to increase customer satisfaction.

4. Customer Engagement: Implement features such as product reviews, ratings, and recommendations so that customers are encouraged to provide interactions and feedback so as to foster a sense of trust among buyers.

5. Global Reach: Optimizing the e-commerce platform for international shipping and localization, allows Gorgeous Glow Candles to reach customers worldwide and fulfill their mission of creating a comfortable and inviting home atmosphere on a global scale.

6. Continuous Improvement: Building a system to collect customer feedback and data analysis to improve the e-commerce platform, thereby enhancing user experience and product offerings based on customer preferences and market trends.

3.0 Project Framework

3.1 Software Development Life Cycle (SDLC) Phases

3.1.1 Planning

The Planning phase is the initial phase of the project development process and one of the most important phases since it contains factors that play a major role in the results of the project. This phase starts with the project scope definition where the goal and scope of the project are defined with the click and the borders around the project are depicted to all the stakeholders. Thereafter a proper Risk Assessment is made to figure out the risks that would possibly hinder the success of the project; then proper plans are made for their avoidance or reduction. Resource Planning is next, whereby one identifies and perhaps quantifies the human, financial, and physical resources that will be used in the implementation of the project. It is vital as it provides detailed planning of the project's activities and key milestones for the time being and thus maintains the flow of the project. It involves the following key areas of stewardship in resource management Funding is carried out in a way to follow the strengths and limitations of the project. The phase ends with a closeout to ensure that all possible planning has taken place and is coherently in line with project goals to provide a strong base for all the following stages in the process.

3.1.2 Analysis

The Analysis phase is where all the necessities of the project are carefully collected and studied with detailed precision. Requirement Documentation remains the process of documenting specific needs and expectations from stakeholders in a detailed manner to facilitate subsequent processes. Data Modelling draws out well-defined structures of the data that the system is to handle in order to optimize the process and its quality. Structured Analysis identifies the working processes to be dealt with by the system and presents it in a flowchart form. Prototyping Analysis involves creating crude models of the system for the purpose of testing and getting feedback. Feasibility Analysis determines how realistic and viable the project is and its probability of success from the technical, financial, and operational perspectives. At the end of the Analysis phase, there is a review meeting that checks that all requirements and analysis phases have been adequately documented and reviewed.

3.1.3 Design

The Design phase is the detailed mapping and planning that contributes to the building of the project out of the requirements and analyses. Database Design is the process of coming up with structures that will be used to store and manipulate data while at the same time making sure that the data model is complete to meet all its relevant functionalities. User Interface Design is all about envisioning and constructing the graphic and operational part of the system to make the usage a pleasant affair. DFD and Flowcharts are developed to present information on how data flows in the context of the given system, and it helps to have a general look at the logic of data processing. That is why there are prototypes, which are created to give a tangible representation of the system which in turn is improved. It is the process of effectively documenting the existing and expected design of an application or software so that other people who will handle the project in the future can understand it. This phase ends when it is clear that there are no gaps in the design of the system and all is set to start the implementation phase seamlessly.

3.1.4 Implementation

The project is about to go to the next level, from carefully designed blueprint to an active and significantly more kinetic field of operation. Our inclined developers are very much involved in this process, spending hours constructing the most crucial part of the system. At the same time, they bring desired characteristics to the interface of the future application and turn a detailed problem description front-end widget. This is another big factor in this process, and security is an important element of this process as well. Consequently, the payment gateway and external APIs that are vital for achieving the goal of the online transactions are coded with prerequisites. These requirements will act as a model for the secure protocols most importantly user authentication and authorization that should enhance protection of the system from any possible attacks. After each component has been extremely carefully built, several tests are performed to ensure that the constructed components are adequately functional. The initial form of testing is unit testing: it examines each unit's performance strictly and systematically. Upon this, the pieces of the system which were developed individually can now be connected and tested together. During this significant stage, the integration and coordination

of the different parts of the system are scrutinized for total optimality in terms of system performance.

3.1.5 Security and Support

This phase was established to include system, training the user, sustaining, and acquiring feedback from the user to enhance the system. Starting with the user training, it will be imperative to carry out extensive training for the end users. Here the aim is to impart knowledge and skills required in using the system to the users ideally. For the user, other documentation such as user manuals and training aids will also be developed. These sessions will thus be very practical to allow the users to ask questions and to interact with the system. The emphasis then turns to system sustenance once the systems have been established. Some routine jobs will be carried out to always ensure the smooth and effective running of the system. This ensures that system environment is stable and secured for users when addressing system maintenance issues. Following that, data will be gathered from actual users. The feedback that would be received shall be a source of information in determining which problems are there and what changes could be made to ensure that the needs of users are met much better. This feedback is then used to determine what changes to the system need to be made first and what updates are necessary. The Security and Support phase is work done and we are now onto phase three. During this phase, user training activities, system maintenance jobs, and information collecting from users are revisited to determine whether all processes were conducted rightly or not. This will be accomplished.

3.2 Gantt Chart

	Task Mode	Task Name	Duration	Start Finish	16 10	April 2024	6 0 12 15 1	Mi Mi Mi	ay 2024	6 10 21 24 27	June 2024 30 2 5 8 11 14 17
1	*	Phase 1: Planning	13 days	Thu 21/3/24 Mon 8		ss : s3 60 31 3		9 1 4 1 69 1 67 1 39	2 0 2 12	2 1 10 1 6 1 1 69 1 67 1	av. s. a. a. a. u. 14 17 1
2	-	Project Scope Definition	3 days	Thu 21/3/24 Mon 2	Advantation (in the						
3	-	Risk Assessment	3 days	Tue 26/3/24 Thu 28	and a state of the state of the	1					
4	-	Resource Planning	3 days	Fri 29/3/24 Tue 2/	4/24	in the second se					
5	-	Timeline & Milestone Planning	2 days	Wed 3/4/24 Thu 4/	4/24	*					
6	-	Budgeting	2 days	Fri 5/4/24 Mon 8	/4/24	×.	1				
7	-	Planning Complete	0 days	Mon 8/4/24 Mon 8	and Converting		₹8/4				
8	*	Phase 2: Analysis	13 days	Tue 9/4/24 Thu 25	5/4/24						
9	-	Requirement Documentation	3 days	Tue 9/4/24 Thu 11	1/4/24						
10	-	Data Modelling	3 days	Fri 12/4/24 Tue 16	5/4/24		in the second				
11	-	Process Modelling	2 days	Wed 17/4/24Thu 18	3/4/24		-				
12	-	Prototyping Analysis	3 days	Fri 19/4/24 Tue 23	3/4/24						
13	-	Feasilbilty Analysis	2 days	Wed 24/4/24Thu 25	5/4/24			in,			
14	-	Analysis Complete	0 days	Thu 25/4/24 Thu 25	5/4/24			\$ 25/4			
15	*	Phase 3: Design	16 days	Fri 26/4/24 Thu 16	5/5/24					1	-
16	-	Database Design	3 days	Fri 26/4/24 Tue 30	0/4/24						
17	=	User Interface Design	3 days	Wed 1/5/24 Fri 3/5	/24				-		
18	2	Data Flow Diagram (DFD) and Flowchart	3 days	Mon 6/5/24 Wed 8	/5/24						
19	-	Create Prototype	4 days	Thu 9/5/24 Mon 1	3/5/24				*		
20	-	Documentation Design	3 days	Tue 14/5/24 Thu 16	5/5/24				×.		
21	-	Design Complete	0 days	Thu 16/5/24 Thu 16	5/5/24					16/5	
22	*	Phase 4: Implementation	15 days	Fri 17/5/24 Thu 6/	6/24						
23	-	User Interface Development	3 days	Fri 17/5/24 Tue 21	/5/24					 1	
24	-	System Development	3 days	Wed 22/5/24Fri 24/	5/24						
25	-	System Integration	3 days	Mon 27/5/24Wed 2	9/5/24					1	8
26	•	System Testing and Debugging	2 days	Thu 30/5/24 Fri 31/	/5/24						
27	-	System Deployment	2 days	Mon 3/6/24 Tue 4/	6/24						
28	-	Report Documentation	2 days	Wed 5/6/24 Thu 6/	6/24						-1 ·
29	•	Implementation Complete	0 days	Thu 6/6/24 Thu 6/	6/24						₹ 6/6
30	*	Phase 5: Security and Support	9 days	Fri 7/6/24 Tue 18	and the second se						-
31	-	User Training	5 days	Fri 7/6/24 Wed 1	Contraction and a second second						l
32	-	System Maintainence	3 days	Thu 13/6/24 Mon 1	7/6/24						
	-	User Feedback	3 days	Tue 18/6/24 Thu 20	0/6/24						Lan International Contract of
34	-	Security and Support Complete	0 days	Thu 20/6/24 Thu 20)/6/24						

 			Student Cou	ASIA PACIFIC UNIVERSITY Systems Analysis and Design (CT026-3-1) Student Coursework Workload Matrics - Grades and Feedback Attachment	ASIA PACIFIC UNIVERSITY Systems Analysis and Design (CT026-3-1) ork Workload Matrics - Grades and Feed	SITY (CT026-3-1) is and Feedback /	vttachment			
INTA	INTAKE-APU/APD1F2309CS(CYB)	STUDENT NAME	SHAYVITHA MAHENDRAN	MANON NIIMI	ZETA ZHAFIRA	KADYROVA BERMET NURLANOVNA	SEIF ELSAYED ABDELRAZEK NASR	HISHAM A. H. LAZEN	ANAS WADHAH MOHAM MED QAID	
PROJ	PROJECT TITLE-	TP NO.	TP078615	TP075090	TP075044	TP071120	TP075563	TP077575	TP077401	
A G	A. Group Component	•								
8	ASSINMENT COMPONENT	ALLOCATED MARKS	CONTRIBUTION PERCENTAGE	CONTRIBUTION PERCENTAGE	CONTRIBUTION PERCENTAGE	CONTRIBUTION PERCENTAGE	CONTRIBUTION PERCENTAGE	CONTRIBUTION PERCENTAGE	CONTRIBUTION PERCENTAGE	TOTAL %
-	Planning - Introduction	5	35	33		31				100
2	Planning - Problem & Solution	5			25				75	100
ŝ	Planning - Project Planning	5	15	15	14	12	12	15	15	100
4	Planning - Feasibility Study	10	15	15	15	15	12	12	14	100
2	Analysis - System Analysis	10	14	12	15	12	15	15	15	100
9	Design - Context Diagram	10				100				100
9	Design Diagram	10	12	14	12	15	15	15	15	100
7	Interface Design	10	75		25					100
#	Overall Documentation	5	15	15	15	12	14	15	12	100
	Total Marks and Contribution	70								
		Digital Signature	A.	af non	At	A.	F.		Au	
]							print until this point only	itil this point only

3.3 Workload Matrix

19 | P a g e

4.0 Feasibility Study

4.1 Technical Feasibility

The technical feasibility of a project refers to its entire viability in terms of fields, programs, output, input, processes, and procedures. It's a helpful tool for identifying and fixing problems and long-term preparation. Determining if a project or product has the required technology is one of the most important steps in a feasibility study. These specs can help us design, install, manage, and operate the system needed for the project or product.

• Advantages of Technical Feasibility

Technical feasibility can help us decide if the project's or product's technical requirements can be satisfied with the resources available today. Evaluating whether or not the consumers' needs are met by the technology resources. For the project or product, it is also helpful to confirm that the technology is reliable and compatible with currently available technology. It also looks at the technical skills of the software development team.

• Technical Feasibility Q&A

- Is the proposed technology or solution practical? Yes, the new system provides many guides and functions with details to the admin and the user which operates the system
- Do we use the technology support to work on the project for the system?
 Yes, we have used the application like 'Figma', an application that we create a prototype for the project.
- 3. Do we possess the necessary technical expertise, and is the schedule reasonable? Yes, we apply 4 application programmers and 3 applications to develop the system with a deadline with a very reasonable time.
- If the technology is not available, can it be acquired? Yes, that 3 applications MySQL, Microsoft Expression Web software can acquire from the Microsoft official website.

4.2 Scheduling feasibility

The Gantt chart submitted above shows the descriptive timeline of events and phases required to undertake the project, accomplishing it between March 21 and June 20 in 2024. The project is divided into five phases: The SDI model breaks up into PDIS: Planning, Analysis, Design, Implementation, Security, and Support with process tasks, and common check points like "Planning Complete" on 8th April, "Analysis Complete" on 25th April, "Design Complete" on 16th May, and "Implementation Complete" on 6th June. This corresponds to the previous list of activities that requires 72 days, so there is less flexibility to perform tasks as Project Scope Definition, Risk Assessment, Requirement Documentation, and User Interface Design one at a time and completely. The work plan has a contingency of a month of schedule to allow for flexibility in the case that some parts of the project are thrown off and to make sure that it is completed in a timely manner. Critical path activity draws attention to the importance of undertaking a specific task before moving to the other one, while resources map where their specific such as web designers, developers, and testers will be most effective. This structured planning and scheduling depicts a well-coordinated project, whereby all measures to ensure that the project is successful and completes on time are in-place. In the event of a security breach, we will enforce a strong password policy and deploy security software. To mitigate the risk of failure in design or development tools, we will use the latest versions and prepare alternative tools. Stakeholder feedback highlights the marketing team's desire for more calls to action and the development team's concerns about project complexity. Scenario analysis reveals that inadequate testing increases the risk of bugs and customer complaints, so we will involve customers in the testing process to gather feedback and ensure the website meets their needs. Confidently, we are well-prepared to tackle these challenges and deliver a high-quality product. Our plan to build a website for the gift shop is poised for success, as we have a capable team, ample time, and a robust strategy to address potential issues.

4.3 Operational Feasibility

Operational feasibility evaluates how well a proposed system meets requirements found during the requirements analysis phase and how well it addresses business problems or seizes opportunities. This part of the feasibility study concentrates on the organization's capacity to utilize, maintain, and run the suggested system when it is put into place. It entails assessing the solution's efficacy based on how effectively it satisfies user needs and integrates with the current operational workflow.

Operational viability assesses if Gorgeous Gifts' new information system will successfully raise customer happiness and expedite order processing. It entails assessing whether the new system can handle the operational difficulties that are already present, such as tracking inventories, coordinating deliveries, and processing orders manually.

4.3.1 PIECES Framework

The PIECES framework is an approach for system analysis and improvement. Performance, Information, Economy, Control, Efficiency, and Services are its acronyms. An analysis utilizing the PIECES framework to compare the old and new systems is provided below:

Performance

The existing Gorgeous Gifts system's reliance on human procedures degrades its performance. Orders are manually entered into physical order books or Excel sheets, which makes the process laborious and prone to error. There is a lack of integration with remote orders sent by WhatsApp and email, which results in misunderstandings and delays. Manual tracking has a comparable impact on inventory management, leading to imprecise stock levels and ineffective inventory control. The manual process of delivery coordination raises the possibility of misunderstandings and delays when integrated logistics tracking is not there. As opposed to this, the new system that is being suggested will automate every step of the order processing, from entry to delivery, greatly cutting down on processing time and error-proneness. All order channels will be integrated into a single, centralized system, which will expedite order tracking and remove delays.

Information

It is challenging to create thorough reports and acquire insights into sales trends and consumer preferences because the antiquated system is unable to track and analyze inventory levels and client orders. On the other hand, a centralized database in the new system combines order tracking, inventory control, and customer relationship management. With the help of its dashboards and real-time notifications, users may make better decisions by thoroughly analyzing data.

Economy

The old system incurs higher running expenses due to manual procedures and inefficiencies, with potential income loss resulting from delays and errors in order processing. In contrast, the new system lowers operating expenses by streamlining inventory control and order processing. Although there are initial implementation costs, these are mitigated by the anticipated increase in sales revenue and customer satisfaction

Control

Due to the outdated system's lack of control over inventory levels, order tracking, and delivery schedules, there was a greater possibility of human mistake, which lower service quality. On the other hand, the new system provides enhanced control through automated processes and centralized data management, improving the accuracy and dependability of order and inventory management.

Efficiency

Employees had to spend a lot of time and energy on manual tasks with the outdated technology, which resulted in delays and unhappy clients due to poor order management. On the other hand, the new technology increases productivity by streamlining processes and automating repetitive tasks, freeing up staff members to concentrate on more strategic work and producing more in general.

Services

The previous system's manual handling and communication issues resulted in uneven customer support and a restricted capacity to modify or alter the order processing procedure. On the other hand, the new system provides a user-friendly interface with adjustable settings and several ways to make payments. It greatly improves customer service by facilitating real-time updates and enhancing communication throughout the order process.

4.4 Economic Feasibility

Economic feasibility studies employ a benefit-cost analysis paradigm. The first stage in a benefit-cost analysis is to determine, quantify, and monetise all benefits and costs related with the newly released item or project.

4.4.1 Cost-Benefit Analysis

Cost-benefit analysis is a straightforward and efficient decision-making method that may help individuals and organisations make better decisions. It involves analysing the possible benefits of a certain option or activity and removing all related costs. Businesses may decide if a move will provide more value than the cost of implementation by evaluating the advantages and expenses. Any company project's first proposal stage must include a costbenefit analysis. This analysis provides the necessary basis for moving forward with a planned action.

Cost Area	Cost (Rm)
Hardware	
Computers	RM3,000
Tablets	RM2,000
Manhours	
Web Deleveloper	RM1.900 (fpr 3 months)
Database Administrator	RM1.900 (fpr 3 months)
Project Management Consultant	RM1.474 (fpr 3 months)
UX/UI Design Consultant	RM1.474 (fpr 3 months)
Software	
Adobe Photoshop	RM66/month
Illustrator	RM60/month
Pro-rated	
Rent for office-RM2000	
Projects per month $= 5$	
Cost per project = RM2000/5 = RM400/month	
Project duration = 3 months	
Total Pro-rated cost (RM400*3)	RM1,200
Total	RM13,326

• How much is our budget?

Project Budget: RM20,000

How much is our cost?

- Hardware: Computers: RM3,000 Tablets: RM2,000 Total Hardware Cost: RM3,000 + RM2,000 = RM5,000
- Manhours (Adjusted for 3 months): Web Developer: RM1,900 Database Administrator: RM1,900 Project Management Consultant: RM1,474 UX/UI Design Consultants: RM1,474 Total Manhours Cost: RM1,900 + RM1,900 + RM1,474 + RM1,474 = RM6,748
- 3. Software (for 3 months): Adobe Photoshop: RM66 x 3 = RM198 Illustrator: RM60 x 3 = RM180 Total Software Cost: RM198 + RM180 = RM378
- 4. Pro-rated Rent:

Total pro-rated cost for 3 months: RM1,200

Total Cost = Hardware + Manhours (Adjusted) + Software + Pro-rated Rent Total Cost = RM5,000 + RM6,748 + RM378 + RM1,200 Total Cost: RM13,326

• How much is our profit?

Profit: Budget (RM20,000) - Cost (RM13,326) = Profit = RM6,674

• Does the organization have adequate cash flow to fund the project during the development period?

Yes, the organization has adequate cash flow. With the total cost being RM13,326, the organization can fund the project and will make a profit of RM6,674.

Costs	Month				
	0	1	2	3	Total
Development costs	-5000				
Operating costs		-8874	-8874	-8874	
Discounted Costs/Discount rate - 7%/py	1	0.93	0.87	0.81	
Discounted Costs	5000	4597	4745	4902	<mark>19244</mark>
Benefits					
Tangible benefits from the new system	0	20000	25000	28000	
Intangible benefits from the new system	0	1300	1400	1700	
Discounted Costs/Discount rate - 7%/py	1	0.93	0.87	0.81	
Discounted Benefits	0	19906	24672	24057	<mark>66834</mark>
Discounted benefits/ Discounted costs	-5000	14906	19579	18964	
Cumulative benefits - costs	-5000	9906	29485	48449	

5.0 System Analysis

5.1 Data Gathering Using Surveys And Questionnaire

Logistic company questions

Question 1: What specific features or services would you like to see updated or introduced to make your shipping process better?

- Updates on Real-Time Tracking
- Faster shipping options
- Customer support

Question 2: How would you rank the clarity and accuracy of communication about shipment tracking and updates?

- Poor
- Fair
- Good
- Excellent

Question 3: Do you offer specialized services, such as temperature-controlled shipping or fragile materials handling?

- Yes
- No

Question 4: Do you think eco-friendliness and sustainability is important to your company during shipping process?

- Yes
- No

Question 5: How would you rate the professionalism and kindness of your delivery and customer service representatives?

- Yes
- No

• Customer Questions

Question 1: How would you prefer to contact customer support if you had questions or issues while shopping online?

- Email
- Live Chat
- Social Media

Question 2: Do you think its important to track your order in real-time and receive delivery notifications ?

- Yes
- No

Question 3: Would you appreciate personalized recommendations based on your browsing and purchase history online?

- Yes
- No

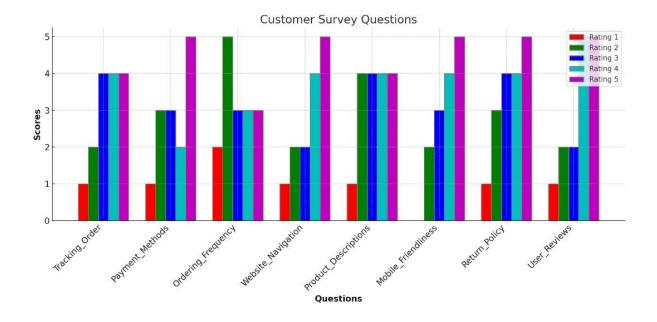
Question 4: Would you prefer a guest checkout option or creating an account for faster purchases on the website?

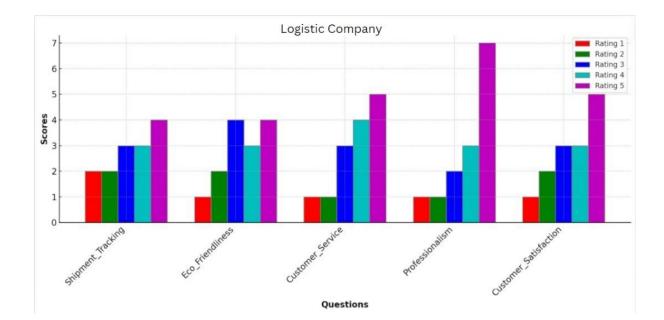
- Guest Checkout
- Create an account

Question 5: How important is it for you to have detailed product descriptions and images when making a purchase decision?

- Very Important
- Important
- Neutral
- Slightly important
- Not important

Bar chart





30 | Page

5.2 Functional Requirements

• Gorgeous gift's new system will allow the customers :

- 1. To register as a customer on the store's official website.
- 2. To log in as a customer on the official store website.
- 3. To retrieve the password in case you lose it .
- 4. To make an online purchase.
- 5. To pay online for a product that is being purchased.
- 6. To create and digitally display a receipt following the completion of the transaction and payment.
- 7. Using the official shop website to log out.

• Gorgeous gift's new system will allow the employees :

- 1. To log in as an employee on the store's official website.
- 2. To retrieve the password in case you lose it.
- 3. To include the booking details of clients who have finished their product purchases.
- 4. To handle the customer's payment for the purchase.
- 5. To produce a receipt confirming a profitable transaction.
- 6. To log out using the official shop website.

• Gorgeous gift's new system will allow the store's manager :

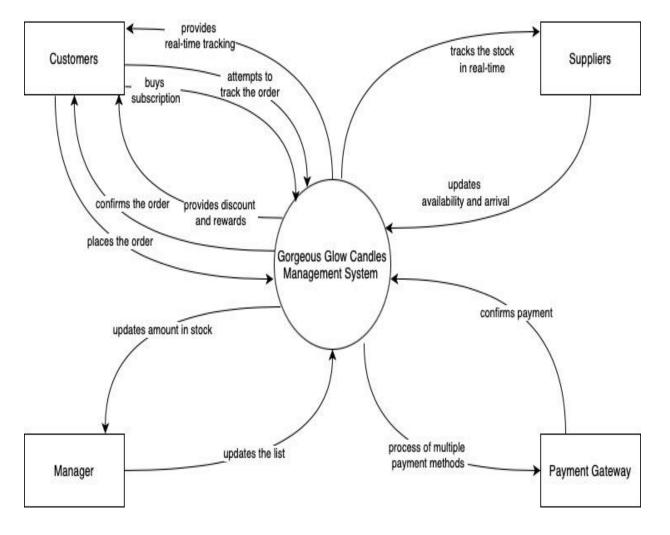
- 1. To log in as an administrator on the store's official website.
- 2. To retrieve the password in case you lose it.
- 3. To produce different store reports, including monthly and annual reports.
- 4. To log out using the official shop website.

5.3 Non-Functional Requirements

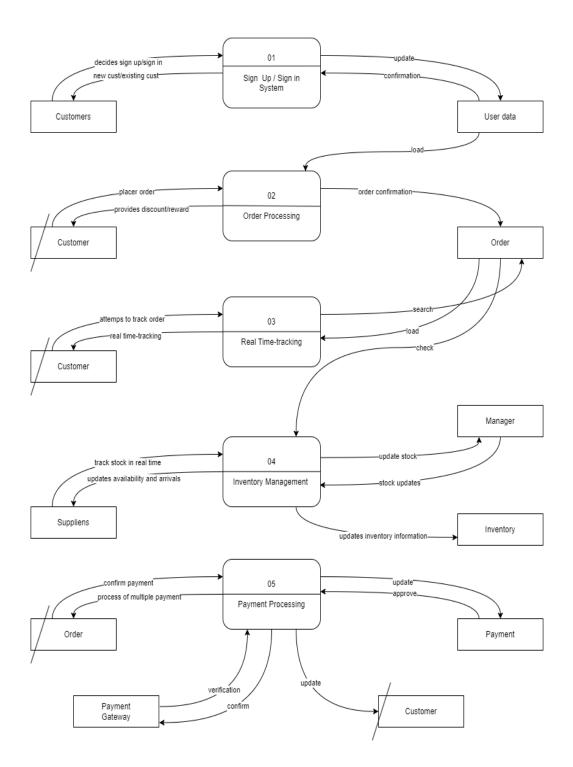
- 1. The management system should be intuitive and to user action with ease.
- 2. The system should be scalable in which the system can handle more users and transactions with little changes.
- 3. Adopt the right security measures like encryption for securing the users information and their transactions.
- 4. Provide API to integrate with other systems of the Organization with ease.
- 5. Alert users as soon as any activity regarding their account or changes on the services that they may be interested in occurs.
- 6. Provide a specific system dashboard for users to choose unique options suitable for their preference and primary basic action.
- 7. Create a transactional database and create a visualization map that will help the user to get a specific insight.
- 8. Provide extensive training support and realistic login procedures so that the clients will not take time to study the systems.
- 9. Implement a reliable backup, recovery and business continuity solutions in the event of a system failure.
- 10. Implement the best content management features for easy management of documents, images, videos, and other work.
- 11. Feedback from the users, survey and other forum and other platforms to do change continuously.
- 12. Support of easy access to third party accounts to ease the process of logging in.

6.0 Design Diagram

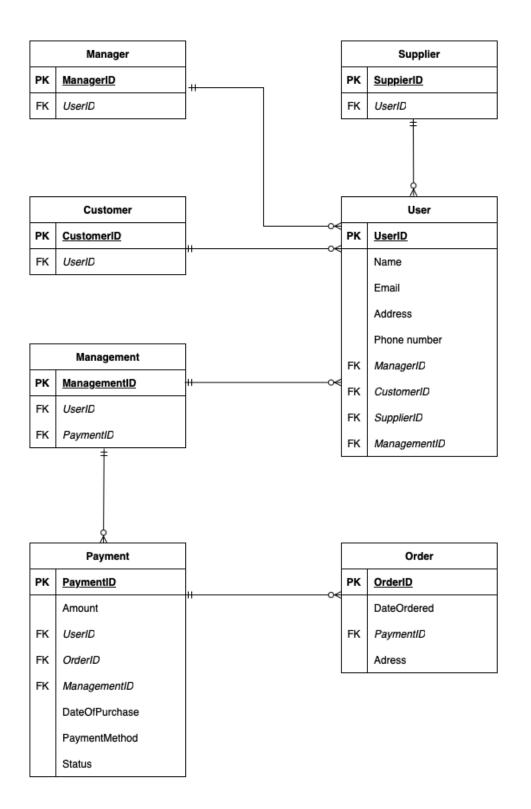
6.1 Context Diagram



6.2 Level 0 – DFD



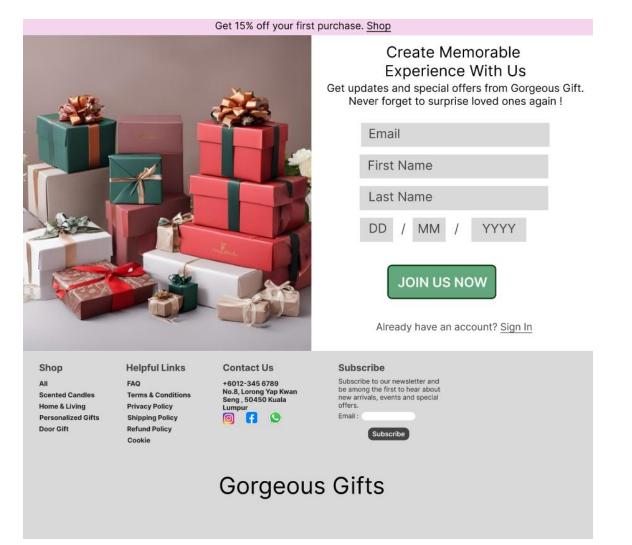
6.3 Entity Relationship Diagram



7.0 Interface Design

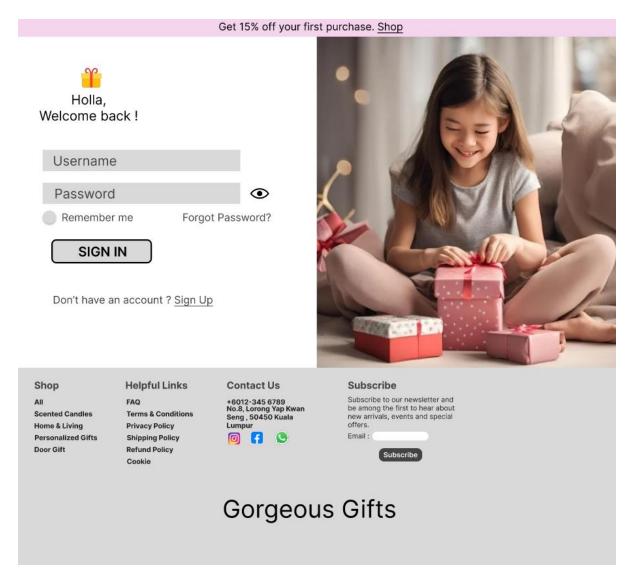
7.1 Prototype

7.1.1 Sign Up



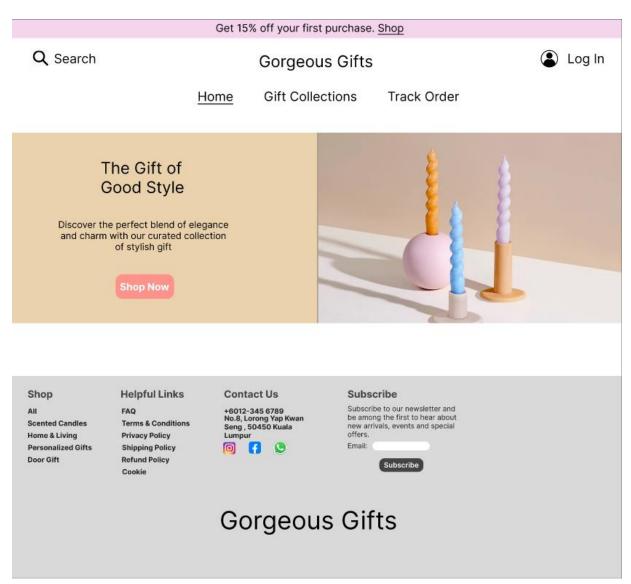
The registration page for the Gorgeous Gifts, where new members can fill in their credentials such as their email address, first name, last name and their birthday date to register themselves as part of their membership. After filling in the details, the user can click on the green button and a text box will be displayed saying if the member has successfully registered or not.

7.1.2 Sign In



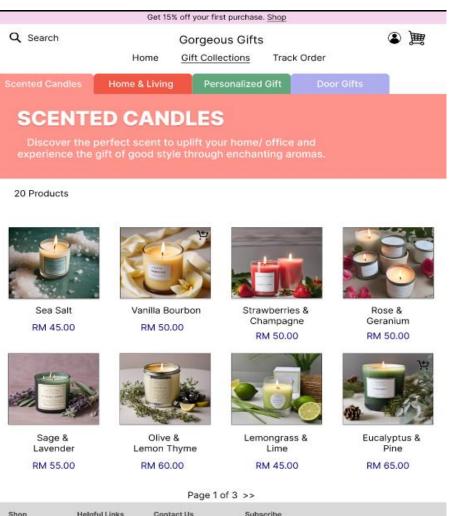
The sign in page for the Gorgeous Gifts for existing members to log into the gift shop's website and have access to all the membership privileges such as discount or coupon, online community for members and also free gifts once the member reaches the reward 'milestone'.

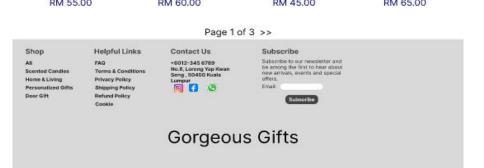
7.1.3 Homepage



The main homepage for the Gorgeous Gift where members that has an account can view all the exclusive gift collections.

7.1.4 Gift collections





In the Gift Collection page, the members of Gorgeous Gift can view scented candles as their best – sellers.

The "Home & Living" section of the "Gorgeous Gifts" online store is tailored to help you elevate your living space with stylish and timeless pieces. This section showcases five unique products: Pastel Candle Holders, Geometric Bedding, a Hand-Painted Ceramic Vase, Coastal Plates - Set of 4, and a Decorative Pillow, which is currently out of stock. The emphasis is on offering items that reflect your unique taste and love for good style.

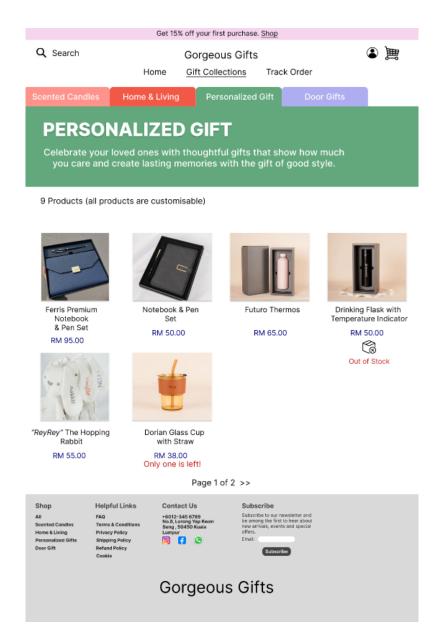
In this section, you'll find an "added to cart" icon located at the top right corner of the page. This small shopping cart symbol is crucial for keeping track of your selections. As you add items to your cart, the number displayed on the icon increases, providing a clear visual indicator of the products you've chosen. This feature is designed to make your shopping experience seamless and convenient, allowing you to review and proceed to checkout with ease.

Get 15% off your first purchase. Shop							
Q Search		orgeous Gifts ft Collections	Track Order	Q	e 🎘		
Scented Candles	Home & Living	Personalized	Gift Do	or Gifts			
HOME & LIVING							
Elevate your living space with these timeless pieces that reflect your unique taste and love for good style.							
5 Products							
×1		ί	2	()) ())	*		
Pastel Candle Holders RM 25.00	Geometric Bed RM 75.00	Cera	d-Painted amic Vase M 98.00	Coastal - Set RM 5	of 4		
Decorative Pillow RM 25.00							
Out of Stock	F	Page1of1 >>					
All FAG Scented Candles Ter Home & Living Prin Personalized Gifts Shi Door Gift Ref	ms & Conditions No.8, Lorong Yi Seng , 50450 H vacy Policy Lumpur	se Subscrit	cribe be to our newsletter and rg the first to hear about wals, events and special Subscribe				
Gorgeous Gifts							

The "Personalized Gift" section is all about celebrating your loved ones with thoughtful, customizable gifts. This section features nine distinct products: Ferris Premium Notebook & Pen Set, Notebook & Pen Set, Futuro Thermos, Drinking Flask with Temperature Indicator (currently out of stock), "ReyRey" The Hopping Rabbit, and Dorian Glass Cup with Straw

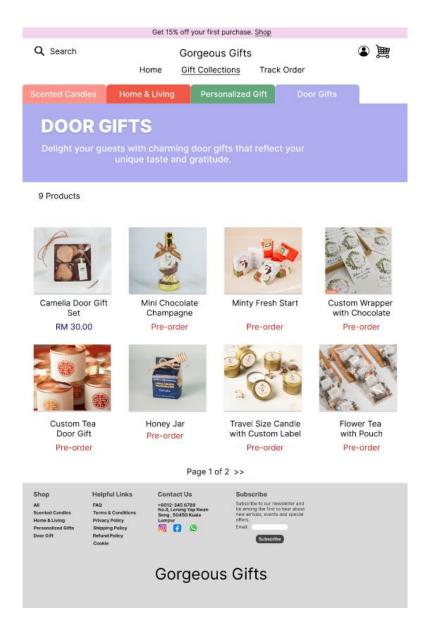
(only one left). Each product in this section can be customized to add a personal touch, making your gifts even more special.

Just like in the "Home & Living" section, the "added to cart" icon is prominently displayed at the top right corner. This icon ensures you can easily keep track of the items you're interested in purchasing. As you add items to your cart, the number on the icon updates, accordingly, helping you manage your selections and proceed to checkout smoothly.



The "Personalized Gift" section of the "Gorgeous Gifts" online store is all about helping you celebrate your loved ones with thoughtful, customizable gifts. This section showcases nine unique products: Ferris Premium Notebook & Pen Set, Notebook & Pen Set, Futuro Thermos, Drinking Flask with Temperature Indicator (currently out of stock), "ReyRey" The Hopping Rabbit, and Dorian Glass Cup with Straw (only one left). Each item can be personalized to add a special touch, making your gifts truly memorable.

One helpful feature of this section is the real-time inventory updates, which keep you informed about the availability of each product. For instance, you'll see that the Drinking Flask with Temperature Indicator is marked "out of stock," meaning it's temporarily unavailable. Meanwhile, the Dorian Glass Cup with Straw has a note saying, "only one is left," alerting you to its limited availability and encouraging a quick purchase if you're interested. These real-time updates help you make timely and informed decisions while shopping, ensuring you don't miss out on popular items.

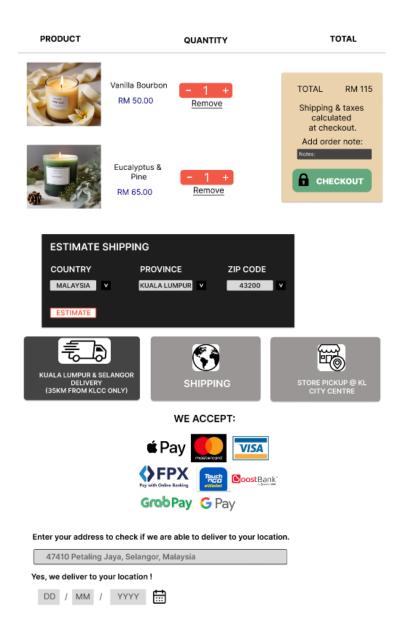


The "Door Gifts" section of the "Gorgeous Gifts" online store is perfect for helping you delight your guests with charming and thoughtful door gifts that reflect your unique taste and gratitude. This section showcases nine lovely products: Camelia Door Gift Set, Mini Chocolate Champagne, Minty Fresh Start, Custom Wrapper with Chocolate, Custom Tea Door Gift, Honey Jar, Travel Size Candle with Custom Label, and Flower Tea with Pouch.

A key feature of this section is the pre-order option for most of the products. Items like Mini Chocolate Champagne, Minty Fresh Start, Custom Wrapper with Chocolate, Custom Tea Door Gift, Honey Jar, Travel Size Candle with Custom Label, and Flower Tea with Pouch are all marked as "Pre-order." This means that you'll need to place an order in advance, which is especially useful if you need a large quantity of door gifts for special events such as weddings, parties, or corporate gatherings. The Camelia Door Gift Set is available for immediate purchase, priced at RM 30.00.

Pre-ordering ensures you can get the items you want in the quantity you need, allowing the store to prepare and customize them to your specifications. This way, you can be confident that your order will meet your expectations in terms of quality and personalization.

7.1.5 Cart



The checkout page of the "Gorgeous Gifts" online store is designed to provide a smooth and efficient shopping experience as you finalize your purchase. At the top, you'll see a summary of the items you have added to your cart. The page lists the products you've selected, such as Vanilla Bourbon and Eucalyptus & Pine, along with their prices. You can adjust the quantity of each item directly from the cart using the plus (+) and minus (-) buttons, and there's also an option to remove items if you change your mind. The total cost of your selected items is displayed, with a note that shipping and taxes will be calculated at checkout. There's also a field to add any order notes you might have. Below the cart summary, you can estimate your shipping costs. The shipping estimator allows you to enter your country, province, and zip code to get an estimate of the shipping charges. This feature helps you understand any additional costs before proceeding to checkout. The page provides various delivery options to suit your needs, including local delivery within Kuala Lumpur & Selangor (within 35KM from KLCC only), standard shipping options, and the choice to pick up your order at the KL City Centre store.

A variety of payment options are available to ensure a convenient checkout process. The store accepts multiple payment methods, including Apple Pay, Visa, MasterCard, FPX, Touch 'n Go, Boost, GrabPay, and Google Pay. To ensure your order can be delivered to your location, there's a field to enter your address. By inputting your address, you can confirm that delivery is available in your area. The page will confirm if delivery is possible to your location, and you can also select a preferred delivery date using the calendar feature.

Once you've reviewed all the details and are ready to complete your purchase, you can proceed by clicking the "CHECKOUT" button. This finalizes your order, and you'll be guided through the payment and delivery process. This checkout page is designed to make your shopping experience seamless, providing all the necessary tools and information to manage your order effectively.

7.1.6 Checkout page

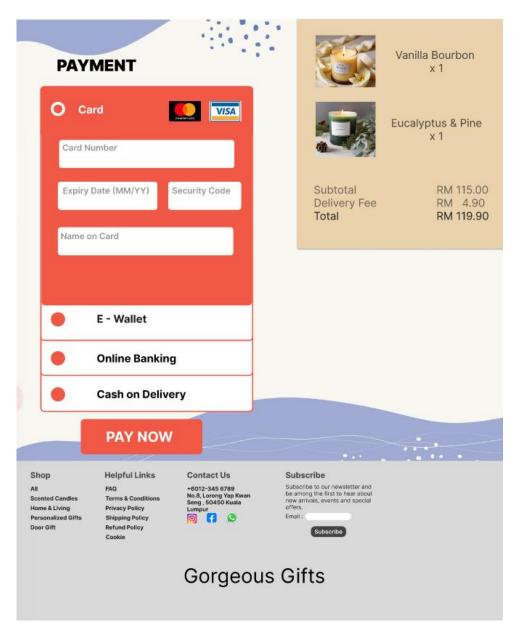
CHECKOUT	Vanilla Bourbon x 1				
Country / Region	Eucalyptus & Pine				
First Name	Subtotal RM 115.00 Delivery Fee RM 4.90				
Company (Optional)	Total RM 119.90				
Address	PROCEED TO PAYMENT				
Unit Number					
Postcode City					
State					
Phone Number					
All FAQ +6012-345 6789 Sub					
Gorgeous Gifts					

The checkout page of the "Gorgeous Gifts" online store is designed to streamline the final steps of your purchase, ensuring a smooth and efficient process. This page features a form where you need to enter your shipping details, including your country or region, first name, last name, company (optional), address, unit number, postcode, city, state, and phone number. Providing these details ensures that your order is delivered accurately and on time.

On the right side of the page, you'll see a summary of the items in your cart, such as Vanilla Bourbon and Eucalyptus & Pine candles, along with their quantities. The summary includes a breakdown of the subtotal for your items, the delivery fee, and the total amount payable. This clear display helps you understand the complete cost before you finalize your purchase. Once you've reviewed your order details and confirmed everything is correct, you can proceed by clicking the "PROCEED TO PAYMENT" button. This will take you to the payment page, where you can complete your transaction. The checkout page is designed to be straightforward and user-friendly, ensuring you can complete your purchase with ease.

The footer of the page includes helpful links, contact information, and a subscription option, providing additional resources and support as you complete your order. This streamlined checkout process ensures a seamless shopping experience from start to finish.

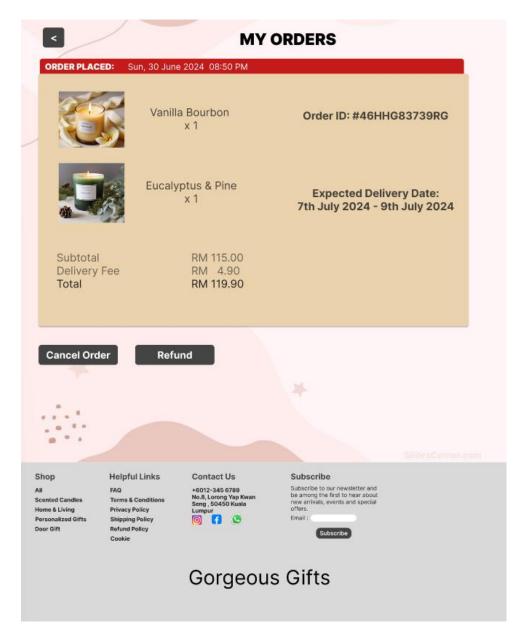
7.1.7 Payment Gateway



The payment page of the "Gorgeous Gifts" online store is designed to finalize your purchase smoothly and securely. This page offers multiple payment methods to suit your preferences, including card payment (Visa or MasterCard), e-wallet services, online banking, and cash on delivery. To pay with a card, simply enter your card number, expiry date, security code, and the name on the card.

On the right side, you'll find an order summary listing the items you've selected, such as Vanilla Bourbon and Eucalyptus & Pine candles, along with their quantities. The summary provides a breakdown of the subtotal, delivery fee, and the total amount payable. This helps you verify all details before completing your payment. After choosing your preferred payment method and confirming all information is correct, click the "PAY NOW" button to process your payment and complete the transaction. The footer of the page includes helpful links, contact information, and a subscription option, offering additional resources and support if needed. The design ensures that all necessary details are collected and processed efficiently, making your shopping experience straightforward and secure.

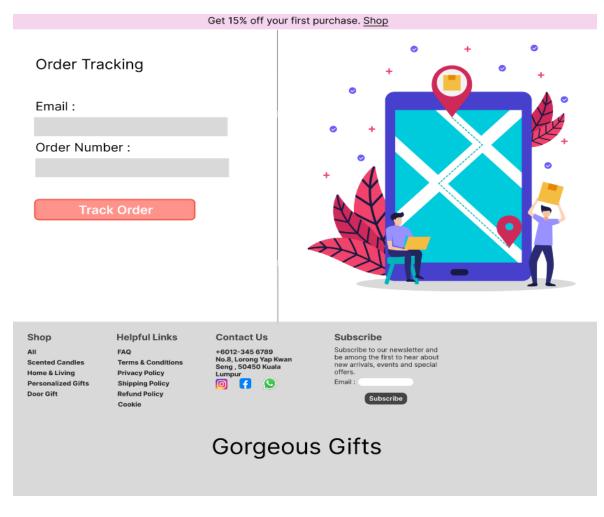
7.1.8 My order



The "My Orders" page of the "Gorgeous Gifts" online store provides a concise summary of your recent purchase. It lists the items ordered, such as Vanilla Bourbon and Eucalyptus & Pine candles, with their quantities, subtotal, delivery fee, and total amount (RM 119.90).

Key features include the order ID (#46HHG83739RG) and the expected delivery date (7th July 2024 to 9th July 2024). The order ID helps with tracking and inquiries, while the delivery date gives you a clear timeframe for when to expect your items.

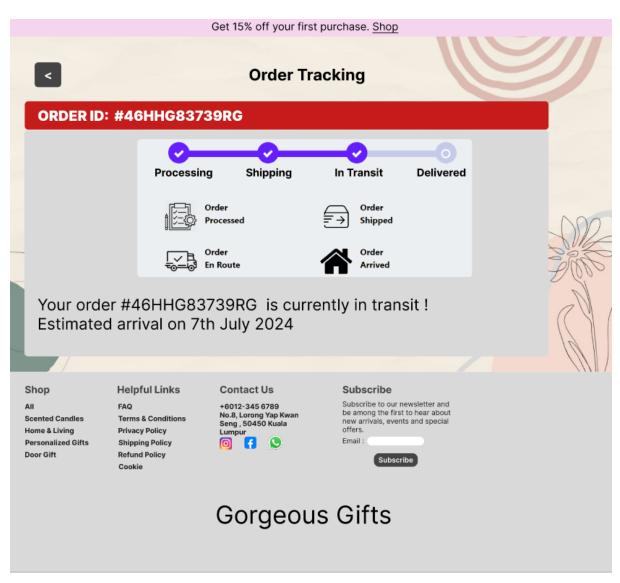
The page also offers options to cancel the order or request a refund, providing flexibility and peace of mind. The footer includes helpful links, contact information, and a subscription option for additional support. This layout ensures a smooth and transparent shopping experience.



7.1.9 Order tracking

The "Order Tracking" page of the "Gorgeous Gifts" online store is designed to help you easily monitor the status of your purchases. To track an order, you simply enter your email address and order number into the provided fields. Once you've entered this information, click the "Track Order" button to view the current status and location of your shipment.

This feature ensures you can stay updated on your order's progress and know when to expect your delivery. The footer includes helpful links, contact information, and a subscription option, offering additional support and resources. This tracking system is meant to give you peace of mind by providing transparency and real-time updates on your purchases.

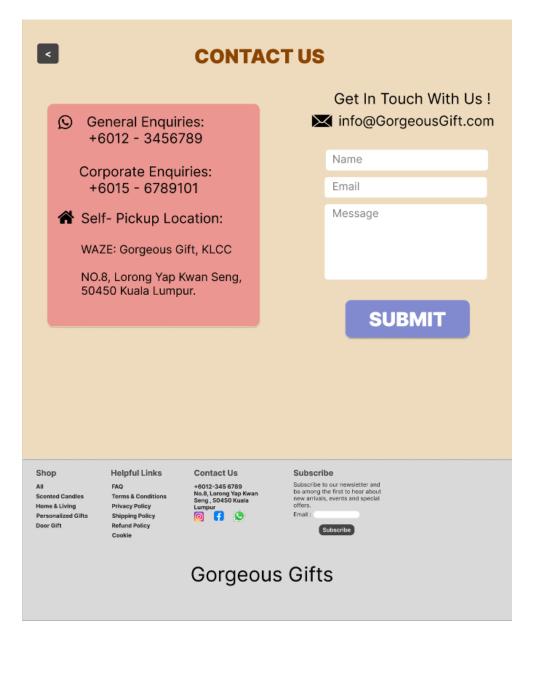


7.1.10 Real - time order tracking

The "Order Tracking" page of the "Gorgeous Gifts" online store provides a clear and detailed update on your order status. At the top, you'll see your order ID, #46HHG83739RG,

which is crucial for tracking and any inquiries. The tracking system shows the progress of your order through stages: Processing, Shipping, In Transit, and Delivered. Currently, your order is in the "In Transit" stage, with an estimated arrival on 7th July 2024. This information helps you anticipate when your order will arrive, giving you peace of mind and allowing you to plan accordingly. The footer includes helpful links, contact information, and a subscription option for additional support and resources. This tracking system is designed to keep you informed with real-time updates, ensuring a transparent and reassuring shopping experience.

7.1.11 Contact us



The "Contact Us" page of the "Gorgeous Gifts" online store provides various ways for you to reach out for feedback, inquiries, or assistance. If you have any feedback or complaints, you can easily contact them via email at info@GorgeousGift.com, ensuring your concerns are addressed promptly and efficiently.

For more immediate assistance, especially for general inquiries, you can use the provided WhatsApp number (+6012-3456789), which is ideal for quick questions or smaller orders. For corporate inquiries and larger orders, such as those for big events, there is a dedicated WhatsApp number (+6015-6789101). This allows you to discuss your needs in detail and receive personalized service for large-scale orders.

The page also provides the address for self-pickup: No. 8, Lorong Yap Kwan Seng, 50450 Kuala Lumpur. To make it even easier, you can use Waze with the keyword "Gorgeous Gift, KLCC" to find the location. This is a convenient option if you prefer to collect your orders in person, with the shop's central location making self-pickup hassle-free.

There's also a contact form where you can enter your name, email, and message, then click "Submit" to get in touch with the store. The footer includes helpful links, contact information, and a subscription option, offering additional support and resources. This setup ensures you have multiple ways to communicate with the store, making it easy to get the help you need.

7.2 GUI Design Principles

1. Simplicity

User interface (UI) simplicity reduces distractions and improves usability. Simplicity guarantees that people can do activities effectively by removing extraneous parts and concentrating on key aspects. Simple, uncomplicated designs facilitate more intuitive system understanding and interaction from users, lowering learning curves and lowering the risk of frustration.

2. Consistency

UI design automation includes features like auto-fill, suggestions, and smart defaults that streamline repetitive activities and minimize human input. This reduces user mistake, saves time, and improves efficiency. Automated procedures streamline user interactions, freeing up the user to concentrate on more difficult tasks and enhancing user pleasure in general.

3. Automation

Automation in UI design involves streamlining repetitive tasks and reducing manual input through features like auto-fill, suggestions, and smart defaults. This enhances efficiency, saves time, and minimizes user errors. Automated processes simplify user interactions, allowing them to focus on more complex tasks and improving overall user satisfaction.

4. Responsiveness

A user interface that is responsive adjusts to different screen sizes and devices, making it as useful as possible on PCs, tablets, and smartphones. Because responsive design keeps functionality and aesthetic appeal across all devices, it improves accessibility and user experience. It guarantees that across all platforms, the interface stays user-friendly and effective.

5. User-Centric Navigation

The user's wants and preferences are given priority in user-centric navigation, which makes it simple for users to locate information and finish tasks. It has clear labeling, logical organization, and intuitive routes. This method assures navigation is simple and meets user expectations by concentrating on the user's path.

6. Accessibility

When UI design is accessible, it guarantees that anyone with a range of skills, including those with disabilities, can use the interface. This entails following guidelines such as the Web material Accessibility Guidelines (WCAG), allowing keyboard navigation, and offering substitutes for both visual and audio material. Equal access and inclusivity are encouraged via an accessible user interface (UI).

7. Content Readability

The goal of content readability is to deliver information in a way that is understandable and simple to comprehend. This entails the use of readable typefaces, suitable font sizes, and adequate contrast. Readability is increased when text is organized with headings, bullet points, and white space. Users' experience is improved overall when they can easily understand and retain information thanks to clear and legible material.

7.3 Input Design Principles

Keeping the input design consistent makes it possible for users to guess how they can interact with a system, if for instance, framework, and the layout, input controls as well as feedback mechanisms within a gismo are consistent all over the parts of an application. This decreases the mental effort and increases users' effectiveness by providing them with a standard interface. Simplicity in turn concentrates on reducing the mapping intricacies so as not to overburden the user. It is proforma that compliant input field and instructions should be brief, clear and unambiguous so that the users are easily able to understand what is expected of them and thereby making a fewer mistake and feel frustrated, thus making the system more usable and satisfying.

Easy and efficient feedback to the inputs from the end users is something that should be observed. These are the elements of interaction that might involve visual signals, notifications of a mistake, or a confirmation. Positive feedbacks provide user's information as to whether or not their input has been recognized or if they need to make alterations for the next time to prevent unwanted consequences. Accessing is the process of making sure that disabled persons can equally and efficiently use a particular system. This includes; keyboard-only navigation, screen reader support and contrast between colors which improves the applicability of the application to the largest population.

The choice of input design is flexible to allow space to work with the diverse users and their preferences. This can comprise offering multiple ways of input like keyboard, voice, and touch and ways that allow the end-users to modify it. Flexibility of designs facilitates approaching interaction from the side users find most comfortable and effective in the given context and with the given device. In this way, input design can greatly enhance the general usability of a system, making it easier, more welcoming and useful to a larger array of people through consistency, simplicity, feedback, accessibility and flexibility.

8.0 Individual Component

8.1 Shayvitha Mahendran (Project Manager)

The first step in project planning is to identify all of the tasks which are required. Each of the tasks must be carefully looked through and estimated in terms of the time needed for the completion of the project. This step will make sure that a clear understanding of the project's scope is identified. Once all tasks have been identified we are required to schedule the project where we are required to create a realistic timetable. In this schedule each task should be in detailed and identified any crucial task that will delay the project even further.

A manager should also be well prepared and have a clear understanding of the tasks and responsibilities in order to complete the project in time. It is also crucial to determine if certain task can be started before some are completed or they are dependent on each other. This understanding will help the project manager to come up with the efficient and realistic schedule which ensures that each tasks start and end at the given time. Moreover, the manager should be aware of distributing the tasks to appropriate members to prevent overworking and underutilising group members. This ensures a balance workload accross the team and efficient project management.

Project monitoring and controlling involves many steps which are guiding, supervising and coordinating the project team's workload to make sure that the quality is up to the standard. Also, we can conduct specialised walkthroughs to identify and monitor issues in team member's work. These walkthroughs will help to maintain a improved and high-quality work efficiency. Other than that, the team can prevent smaller issues into escalating into bigger ones.

Reporting of project status regularly is important as it keeps all stakeholders up to date. This progress reports should be created regularly and shared with management, users and the project team itself. These kinds of reports will provide updates on the current situation and highlight any issues faced by the team. Status meetings with the stakeholders should be scheduled regularly to discuss about project progress and the next steps. In some cases, Gannt charts can be presented which makes it easier to understand and analyse.

8.2 Manon Niimi (System Analyst)

As a system analyst, you should have a combination of technical skills and tools, analytical and communication skills. An insightful knowledge of systems design and architecture, technological expertise is essential to begin with. As an aspect of this job, you must be skilled in developing and accessing system structures so that all parts of a system will interoperate and function in unison. Skills in management of databases are also desirable especially in the creation of good structures of the associated databases as well as technical skills in coding of advanced SQL statements. Also, it is imperative to understand that system analysis is all about using analytical skills. To be effective in the job, you should possess skills in identifying, compiling, assessing, and recording various requirements as captured from the stakeholders. This goes hand in hand with not only a technical skill set but also and perhaps more importantly, the ability to comprehend and meet business requirements. A great ability to solve problems is necessary to evaluate the existing problems in the systems and come up with reasonable proposals for their improvement.

Some of the tasks and responsibilities that I consider as vital to be undertaken by the system analyst include the following. At the analysis stage, there is the identification of key stakeholders and gathering of specific requirements from the persons of interest. Feasibility analysis is carried out with the view of assessing the project for technical, financial and operational credibility and practical possibility of achieving the project targets given the challenges inherent in the project. In the design phase, one of the important factors is selecting effective data structures for storing and accessing the data since they play the key role in the effective functioning of the system. Moreover, creating an attractive and easily navigable graphical front-end for the application is one of the paramount important steps toward better and smoother usage experience. During the implementation phase, a significant role is played by supervision of the development of the System. This serves to ensure that the construction is in adherence to the various aspects of the details that have been designed. Other tests like unit testing and system integration testing are also important to help confirm that each part of the system and all the components are working correctly. Lastly, in the security and support step, training sessions for utilizing the system must be made along with preparation of user guides and manuals as to the ability of the users to ensure they operate the system effectively. Features such as soliciting users' feedback to uncover problems requiring fixes and upgrades or to discover new ways to extend and improve the system guarantee the system remains relevant to

users. Pointing to these areas will maximize your abilities and informative as a system analyst to make the proper decision for the project's successful fulfillment.

At this juncture, it is desirable for a candidate to execute these crucial tasks with great care to make a worthwhile input in the process of developing, establishing, and maintaining a sound and effective functioning system that is in tune with the strategic plan of the organization

8.3 Seif El Sayed (Programmer)

These are the tasks and roles that ill need to do as the programmer of this assignments to full fill all other necessary requirements to undertake our project for gorgeous gifts

Planning Phase One:

Sample Tasks and Activities

Defining the Scope of the Project: The programmer will especially assist in identifying the extent to which the technological aspects of the project will be feasible. For example, Gorgeous Gifts may require an e-commerce software that is enabled with the requirements such as product database, order management, and the shopping cart. Risk management involves managing countermeasures, which are measures employed in dealing with the risks, and identification of technological risks, which may include aspects of the web hosting such as choosing a reliable hosting provider and use of documented APIs and the risks concerning aspects of the payment system such as scalability and compatibility with current payment systems. Resource planning means the plan of facilities and items needed for a specific stage of work, including the time required for the task, for example, cloud services or .NET.

Analysis Phase:

Model Assignments and Exercises: Assembling Materials: Identifying idea about needs through the interview. For instance, stock owners will be interested in having a sales/money-making feature, whereas customers may require a guest account option. Implementation also involves creating an entity-relationship diagram (ERD) where the format of the data is described to outline how it will be contained within the database. This could therefore feature components such as Orders, Payments, Products, and Customers with interconnecting interactions indicating how they work together. Prototyping: To accommodate this need, a clickable wireframe of the website is created in software like Adobe XD or Figma and shared with the stakeholders in the initial stages of development before the actual implementation of the site.

Design Phase:

It is easier here to describe the activities that may involve decision making as part of their daily routine: Database design: adding tables and fields in relational databases along with associations between two or more fields. For instance, establishing a "Products" table with the

following columns: Price, Stock Quantity, Description, ProductID, and Name are the basic fields.User Interface Design: To develop front-end designs employ frameworks for example React or Bootstrap in the creation of responsive web designs. designing mockups to highlight how the homepage, the checkout page, and product page would look like in the actual site. Data flow diagrams (DFDs): A comprehensive map detailing how data is transported through the different layers of the system. For instance, the DFD can present the actions to be undertaken when fulfilling an order of a client such as changing the order status, processing payments and stock checks.

Stage of Execution:

Model Tasks and Activities: When we write code on the front end using java script and on back end with languages such as Python or Java it is scripting. Bessaging, purely messaging and chat like interface, product listing, authorization, and payment all are the features that should be developed.Integration: Developing a connection that will enable the website to be linked to other payment processing companies or popular payment methods such as PayPal and Stripe.

This calls for adopting the APIs that these services offer and performing all transactions through such means. Testing: Running tests on a specific unit to check, for instance, that a function that calculates the total was developed correctly. testing for integrated components to ensure that they work as a cohesive unit.

Phase of Security and Support

All the terminology is related to practical activity; in particular, such terms as tasks and actions are at the heart of the Tasks and Actions Model Instruction for Users: Create edutainment videos or conduct orientation sessions to provide the store personnel with knowledge of how to use the admin panel to process orders and merchandise. Documentation: Developing complex and detailed sets of documentation to explain how the code will function, how one can set up the system and moreign probable errors that might emerge. Some examples include README files and API documentation, user manuals, and references.Upkeep: applying it often including bug and vulnerability fixes, enhancements or changes in overall features offered by the system. For instance, due to the users' complaints, the programmer introduces a new feature called, 'wish list' into the website to suit the users.

Crucial components and examples:

Automated Order Management System: Designing a backend server that updates the database and informs the customers on the status of their order in a backend service.Payment Gateway Integration: Developing the efficient code which handles the transactions safely and fulfills the PCI-DSS conditions. For instance, incorporating the API techniques of the Stripe service tool to include refunds on customer payments and credit card operations.Delivery Management System: Inputting the data into a third-party delivery service such as UPS or FedEx that will automatically generate shipping labels and track updates for the parcels.CRM System: Creating features such as returns, response to calls, distributing fliers and newsletters, previous orders, and others.Establishing a form of inventory tracking system that enables users to obtain up-todate information on the available stock and generate a notification whenever the stock nears its minimum level. For example, the application of the order replenishment to decrease the quantity of inventories after receiving an order and inform the customers when the stocks get closer to a specific level for replenishment are some of how to replenish.

8.4 Hisham Lazen (User Interface (UI) Designer)

As a User Interface (UI) Designer, the primary skills and knowledge areas needed for involvement in an Information Systems (IS) project include proficiency in design tools, understanding of design principles, user-centred design, coding basics, adherence to accessibility standards, and communication and collaboration skills. Knowledge of design applications such as Adobe XD, Sketch, and Figma, as well as the use of different prototypes, is desirable. These tools assist in the development of wireframes, mock-ups, and even the simplest interactive models. Understanding design principles is also crucial; these basics include color, type, layout, and space, all of which are significant for creating visually appealing interfaces. Additionally, knowledge of user-centred design concepts, such as user experience or user interface design, is obligatory. This involves developing user profiles, moderating usability studies, and prototyping changes based on usability feedback. Although not strictly required, knowledge of HTML, CSS, and JavaScript is very useful as it aids in understanding implementation limitations and facilitates discussions with developers. Adherence to accessibility guidelines, such as WCAG, ensures that UI designs are accessible and usable by persons with disabilities. Finally, successful designers must possess strong interpersonal skills to effectively explain and share their design concepts with managers, developers, and other stakeholders involved in the process.

The main activities of this position are : gathering requirements, creating UI blueprints and design mock-ups, designing the UI, testing, and reviewing with the development team, and refining. In this step, the project's stakeholders which includes the system analysts, project managers and the clients that will help in identifying the need of the system taking into consideration the users needs, business goals/strategies and technology limitations. Wireframing and prototyping require creating a number of triage and concept maps for determining the general structure of the interface and the elements that the screen that will host will include. Visual design mainly refer to the visuals that include the concepts, images, AN icons, buttons, colours, and even the tone of voice or the font size and style. This creates a streamlined appearance thus if the interface is to adhere to a design system or style guide, it will be constant throughout the application. It is about scheduling tests, keeping track of information gathered through the observation of users engaged in the prototype, and determining areas of pain and possible enhancements or redesigns for the interfaces. Since designs have to be translated into actual developments, it is important there is a strong interaction between the developers and the rest of the team; therefore, carrying out a clear explanation of the definitions of such assets and precise instructions on how to implement them. Design iteration is the cyclic process of making changes on designs to reflect feedbacks from the stakeholders and the users before arriving to an optimal solution that yields the best performance and look.

8.5 Zeta Zhafira (Tester)

As a Tester, my primary responsibility is to ensure the quality and reliability of the ecommerce platform being developed for Gorgeous Glow Candles. This role involves systematically identifying, documenting, and resolving any issues or defects in the software to ensure it meets the specified requirements and provides a seamless user experience. The objective is to ensure that the platform is robust, user-friendly, and free of defects before it is launched to the public.

The skills and knowledge required for this role include a combination of technical, analytical, and communication skills. Firstly, technical skills are crucial, including understanding various testing frameworks and tools such as Selenium, JUnit, and TestNG. Additionally, a basic understanding of programming languages such as Java or Python is necessary to write automated test scripts. Knowledge of SQL and database management is also important for data validation. Familiarity with web technologies like HTML, CSS, and JavaScript is essential for effectively testing web applications.

Analytical skills are equally important. Attention to detail is paramount in identifying and documenting defects, while problem-solving abilities are essential for analyzing and troubleshooting issues to determine their root causes. Knowledge of the Software Development Life Cycle (SDLC) and different testing methodologies, such as Agile and Waterfall, is necessary for planning and organizing test activities, including creating test plans and test cases.

Effective communication skills are vital for documenting clear and concise test cases, test plans, and bug reports. Collaboration with developers, project managers, and other stakeholders is essential to communicate defects and testing needs effectively (Myers, 2004).

The tasks to be carried out include several critical activities. Firstly, developing a comprehensive test plan that outlines the scope, objectives, resources, schedule, and deliverables of the testing activities for the e-commerce platform is necessary. Secondly, creating detailed test cases based on the requirements and design documents ensures all functionalities of the e-commerce platform are covered, including testing the product showcase, seamless ordering process, direct payments, customer engagement features, and global reach functionalities.

Test execution involves performing both manual and automated test cases to validate the functionality, performance, and reliability of the e-commerce platform. This includes testing for different user scenarios, such as browsing products, placing orders, and making payments. Defect tracking and reporting involve identifying, documenting, and tracking defects using a defect management tool such as JIRA. Communicating defects to the development team and participating in defect triage meetings to prioritize and resolve issues is also essential.

Developing and maintaining automated test scripts is crucial for improving the efficiency and coverage of the testing process. This includes automating repetitive tests for critical functionalities. Conducting regression tests ensures that new changes have not adversely affected existing functionalities, involving retesting the platform after updates or bug fixes. Performance testing ensures the platform can handle expected load and performance requirements, including testing response time, scalability, and stability under different conditions.

Finally, collaboration and review involve working with developers, business analysts, and other stakeholders to understand requirements and ensure comprehensive test coverage. Participating in review meetings to discuss and improve the testing process is also a part of the role. By focusing on these tasks and leveraging the necessary skills and knowledge, I can effectively contribute to the quality and success of the e-commerce platform project as a Tester.

8.6 Kadyrova Bermet (Database Designer)

Making and keeping databases is the responsibility of database designers. They collaborate with many kinds of companies, from startups to established multinationals. Their responsibility is to guarantee that information is arranged so that it is simple to locate and employ.

The process of building a database's structure to meet business needs is known as database design. It entails a procedure for efficiently tracking, saving, and recovering data. Understanding relational databases is vital for developing databases as they are used to create tables with distinct identifiers and data types. Additionally, it enables users to connect distinct identities to various data points in various tables. There are several essential technical skills that need to be learnt. SQL is a programming language used mostly by database designers developers and designers to create and manage databases. NoSQL is another database language that use a structure different from a table. Being acquainted with both is advantageous. Also, employing Python language could beneficial because Python has become the preferred general-purpose language among programmers across several technical domains. Python can provide database designers with an application programming interface (API) and built-in database functionality. Python proficiency might be useful for database designers working with IT specialists and business executives to create software integration with various databases. Technique of illustrating a database is known as data modelling. The capacity to analyse possible data organisation and presentation formats is required for this process to work. When creating their models, data modellers frequently utilise data modelling tools. Moreover, one of the most crucial abilities for entering the IT sector is problem-solving. Database developers employ these abilities to recognise and fix issues. This ability is used to debug issues and correct logical problems in functional code that isn't operating correctly.

As database designer, there are several tasks that should be done like requirement analysis, data modelling, database architecture, schema design, data migration, performance tuning, security implementation and backup and recovery. Requirement analysis consists of communication with collaborators such as business architect and consumers to understand and record data requirement. Designing and creating abstract, logical and physical data models. Also, Entity Relationship Diagram can be used to show the structure of the database. Normalization could

be done to lessen data redundancy. For this project, it is essential to define database architecture. Planning data migration for sharing data.

There are several skills that are important and steps that are crucial for this project. Database design is essential in today's corporate settings. Its significance cannot be emphasised since it makes managing data more efficient, boosts productivity, strengthens data security, and allows data analysis to support informed choices. Companies may realise the full value of their data, obtain a competitive advantage, and prosper in today's data-centric environment by giving good database design priority.

8.7 Anas wadhah (Network Engineer)

The job of a network engineer requires understanding technical issues, solving problems, and being able to communicate well. It means that one must know about network design and architecture, protocols such as TCP/IP, DNS, DHCP, VPNs, VLANs, OSPF, BGP, SSL/TLS, and security protocols like IPS and IDS. You need to be a skilled professional in constructing and sustaining firm network structures and demonstrate knowledge of different devices like routers, switches, firewalls, and IP addressing (IPv4,IPv6).

Technical competencies include routing protocols (TCP/IP, DNS, DHCP, OSPF, BGP), hardware (routers, switches, firewalls), and network management tools. Problem-solving skills that include analytical capabilities would be useful when monitoring network performances, determining areas of congestion, and finding ways to enhance the overall flow. Your approach to problem-solving is important when addressing network challenges ranging from connectivity issues to errors. Clear communication is critical when it comes to describing technical aspects to non-technical staff and others department.

They are involved in all network projects from requirements analysis phase to implementation to ensure that solutions are in line with organizational objectives. The feasibility studies analyze the technical, financial and operational factors for proper network proposals. During the design phase, you build scalable and available network structures and apply proper IP addressing and secure network topologies.

During implementation you oversee deployment, to ensure that the devices meet certain specifications, setting up the devices and conducting several tests to confirm results.

During the security phase you put in measures such as Firewall, IPS, and IDS conduct training, and constantly embark on monitoring, maintenance and troubleshooting.

Performing these tasks effectively is crucial to build and sustain the right communication networks in line with organizational objectives. It is all about strategic thinking and about the ability to build and enhance networks in a constantly changing environment. You achieve this by concentrating on the above areas; thus, giving your all towards guaranteeing your organization's network infrastructure success.

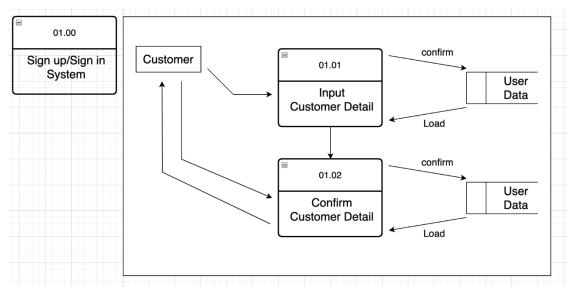
Although, it is perceived that the job of a UI Designer is less important in an IS project they are actually fully responsible to define and improve the skills and activities that contribute to build the best overdrive interface for the users.

9.0 Advanced Design

9.1 Level 1-DFD

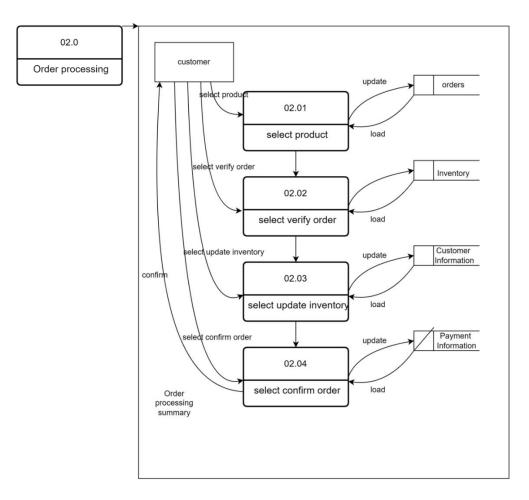
• 01 Sign Up/Sign In

(MANON NIIMI TP075090)



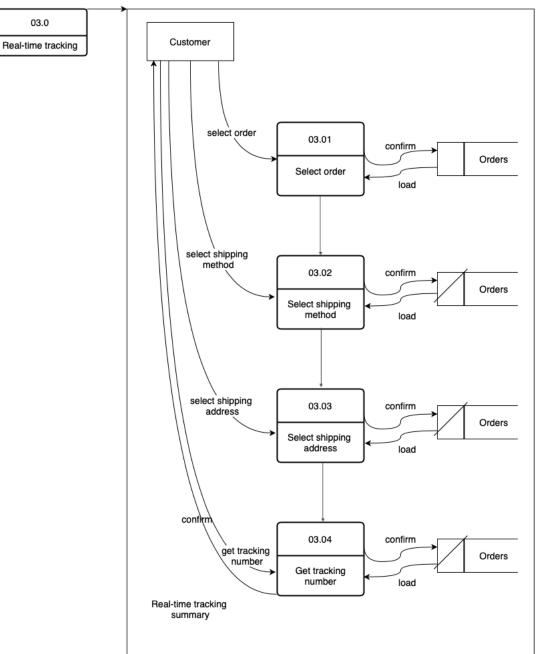
• 02 Order

(ANAS WADHAH MOHAMMED QAID TP077401 & ZETA ZHAFIRA TP075044)



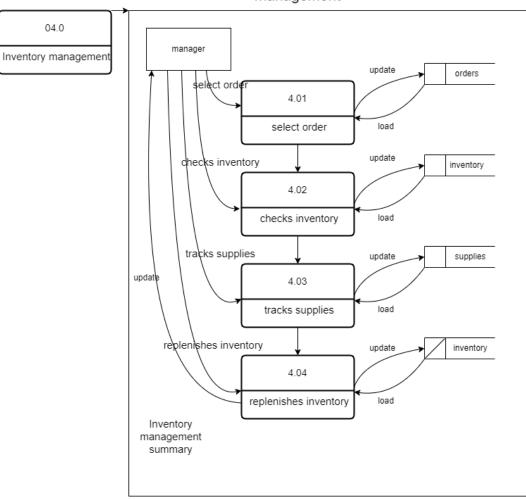
• 03 Real Time-Tracking

(KADYROVA BERMET NURLANOVNA TP071120)



DFD Level 1 - 3.0 Real-time tracking

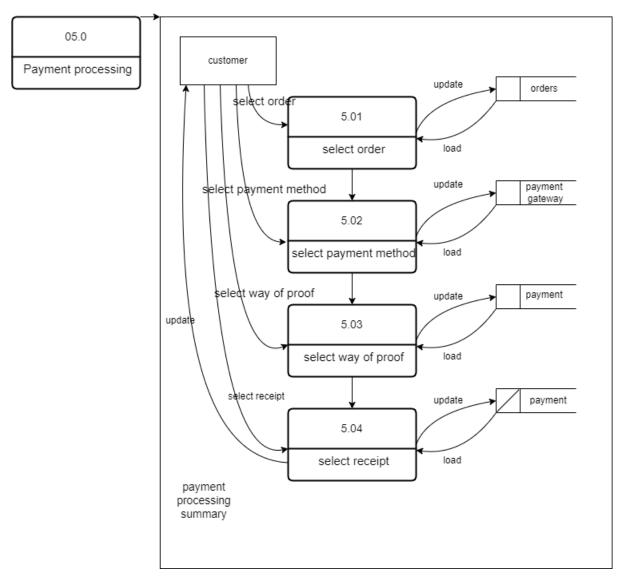
04 Inventory Management (HISHAM A. H. LAZEN TP077575 & ZETA ZHAFIRA TP075044)



DFD level 1 - 4.0 Inventory management

05 Payment

(SEIF ELSAYED ABDELRAZEK NASR ABDELMAKSOUD TP075563 & ZETA ZHAFIRA TP075044)



DFD level 1 - 5.0 Payment processing

9.2 Data Dictionary

(SHAYVITHA MAHENDRAN TP078615)

• Sign Up/Sign in Process

User Table

Field Name	Data Type	Field Lenght	Constraint	Description
UserID	Int	11	Primary key	UserID, auto
				increment
Name	Varchar	255		User's name
Email	Varchar	255		User's email
Address	Varchar	255		User's
				address
PhoneNumber	Varchar	11		User's phone
				numbber
ManagerID	Int	11	Foreign Key	Manager ID
			(Manager)	
CustomerID	Int	11	Foreign Key	Customer iD
			(Customer)	
SupplierID	Int	11	Foreign Key	Suppllier ID
			(Supplier)	
ManagementID	Int	11	Foreign Key	Management
			(Manageme	ID
			nt)	

Customer Table

Field Name	Data Type	Field Lenght	Constraint	Description
CustomerID	Int	11	Primary Key	Customer ID
UserId	Int	11	Foreign Key	User ID, auto
			(User)	increment

• Data Flow

Name: Sign Up/Sign In details

Description: Allows customer to log in to the system

Origin: Customer registration process

Destination: Customer external entity

Data structure: Username, Password

Data Store

Name: User Data

Description: Store the registration details and uploaded details of the customer

Input data flows: Registration details

Output data flows: Updated customer details

Data structure: CustomerID, Name, Address, Phone Number

References

- Zhang, A. B., & Gourley, D. (2009). Selecting material for digitisation. Elsevier EBooks, 19– 30. Retrieved from <u>https://www.sciencedirect.com/topics/computer-</u> <u>science/technicalfeasibility#:~=Technical%20feasibility%20evaluates%20the%20tech</u> nical,the%2Dart%20techniques%20and%20tools
- Lucidspark. (2024). How to conduct a feasibility study. Retrieved from https://lucidspark.com/blog/conduct-a-feasibility-study
- Splunk. (2024). Data dictionaries: A comprehensive guide. Splunk. Retrieved from https://www.splunk.com/en_us/blog/learn/data-dictionary.html
- Yada, V. (2022, December 18). Here are the top skills to succeed as a database developer. Medium; Dare To Be Better. Retrieved from <u>https://medium.com/dare-to-be-better/here-are-the-top-skills-to-succeed-as-a-database-developer-72bba11854b8</u>
- Indeed Career Guide. (2021). What is a database designer? (Responsibilities and salary). Retrieved from <u>https://in.indeed.com/career-advice/finding-a-job/what-is-database-designer</u>
- ProjectManager.com. (n.d.). What is a feasibility study? How to conduct one for your project. Retrieved from <u>https://www.projectmanager.com/blog/what-is-a-feasibility-study</u>
- Asana.(2024). How to conduct a feasibility study: Templates and examples. Retrieved from https://asana.com/resources/how-to-conduct-feasibility-study
- Lucidchart. (n.d.). Data flow diagram guide. Retrieved from https://www.lucidchart.com/pages/data-flow-diagram
- Creately. (n.d.). Data flow diagrams: Examples, symbols, and levels. Retrieved from <u>https://creately.com/diagram/example/jy67cbf2/dfd-level-0-diagram</u>
- HubSpot. (n.d.). 9 guidelines & best practices for exceptional web design and usability. Retrieved from <u>https://blog.hubspot.com/website/web-design-best-practices</u>

Hotjar. (n.d.). 13 web design best practices to follow: Website tips for 2024. Retrieved from <u>https://www.hotjar.com/web-design-best-practices</u>

Webflow. (n.d.). 10 essential UI (user-interface) design tips. Retrieved from https://webflow.com/blog/ui-design-tips