



UTM
UNIVERSITI TEKNOLOGI MALAYSIA

Technology and Information System

(SECP1513)

Section 3

Product	Online Grocery Purchasing App
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Date of submission	
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Introduction

When it comes to translating high-level design concepts into an actual and tested item, a low-fidelity prototype is the fastest, easiest, and most straightforward method. In order to verify that the design and concept of the product are functional, feasible, and workable, low fidelity prototypes are used to test and ensure that the design and concept of the product are workable. There are various advantages to utilizing low-fidelity prototypes to represent our items in our marketing materials. Using low-fidelity prototypes, for example, may save us both time and money in the long run. To demonstrate, a low-fidelity prototype does not have to be elaborate and beautiful; rather, it may reflect contents, layouts, and flows in a straightforward and rapid manner. When designing a low-fidelity prototype, we often place more attention on the functioning of the product in order to guarantee that we are pleased with the product's architecture before addressing its visual appearance. As a result, a low-fidelity prototype is the most effective method of doing early testing.

Problem

The spread of COVID-19 has resulted in a significant loss of human life around the globe, as well as an unprecedented threat to people's health and mental well-being. The majority of people today choose to remain at home and get their necessities and important products on the internet rather than going to the shop. However, purchasing groceries using online grocery applications does not seem to be particularly popular in Malaysia, perhaps because there are no apps available that give the greatest service in terms of grocery purchase in Malaysia. For example, GrabFood is well-known as a firm that can give the best service possible when it comes to delivering food to customers. Anyone who wants to resupply their goods without putting oneself at danger of exposure to COVID-19 has had a frustrating experience as a result of this situation. Furthermore, individuals may have difficulty in purchasing their goods since the distance between their home and the grocery store is excessively long, resulting in them only being able to refresh their critical necessities once or twice a week.

Team working

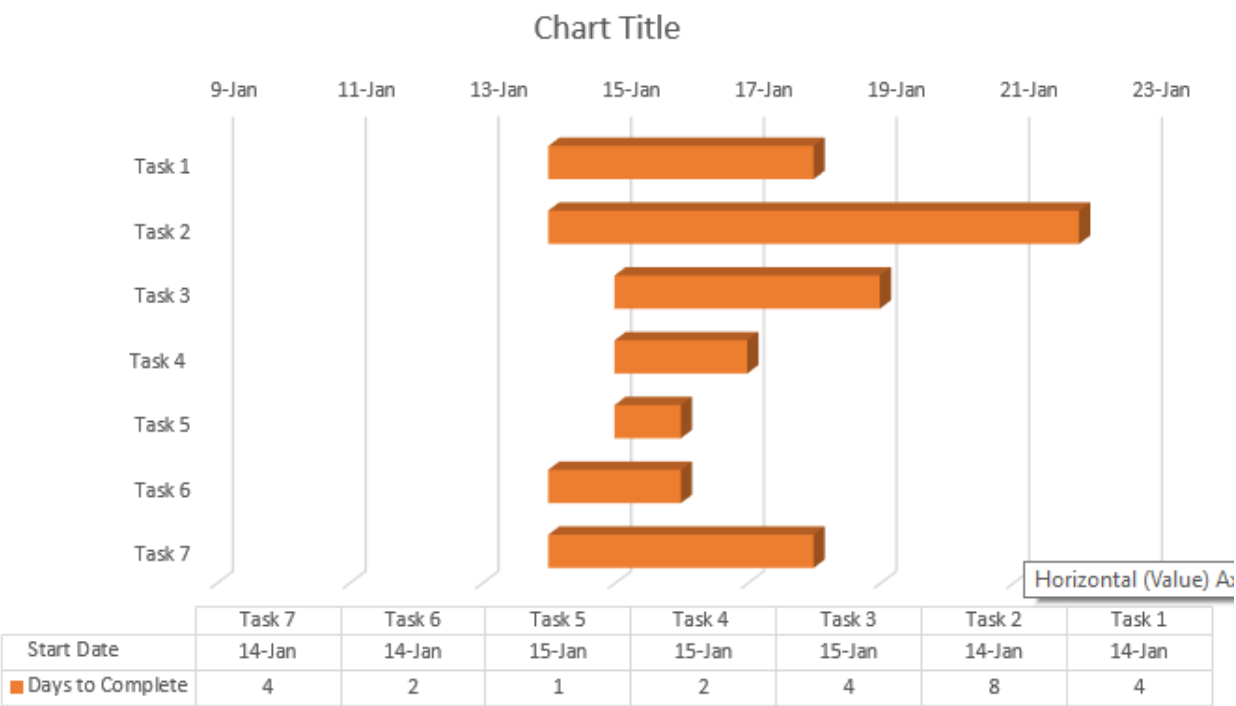
Because this is a group project, all decisions must be approved by all members. Each member must provide at least one solution to this problem, since we want to create an ideal solution that will entirely resolve this issue. By using Google Meet as a platform for brainstorming our ideas, we are able to convene a fast and easy discussion in order to determine a solution to this issue. After considering all of the features and components necessary for this project, we all agree on the solution.

Solution

We made the decision to create an app that can be used by everyone, regardless of where they reside, as long as they had access to the internet, which we did. We are all aware that in order to protect the coronavirus from spreading during this pandemic, we must control our movements and reduce them to a bare minimum as much as possible. Using this software, anyone may place orders for anything they need from wherever they are in the world. Additionally, orders for family members and friends may be made online. They don't have to go to a supermarket or shopping centre and stand in a big queue to pay for their purchases anymore.

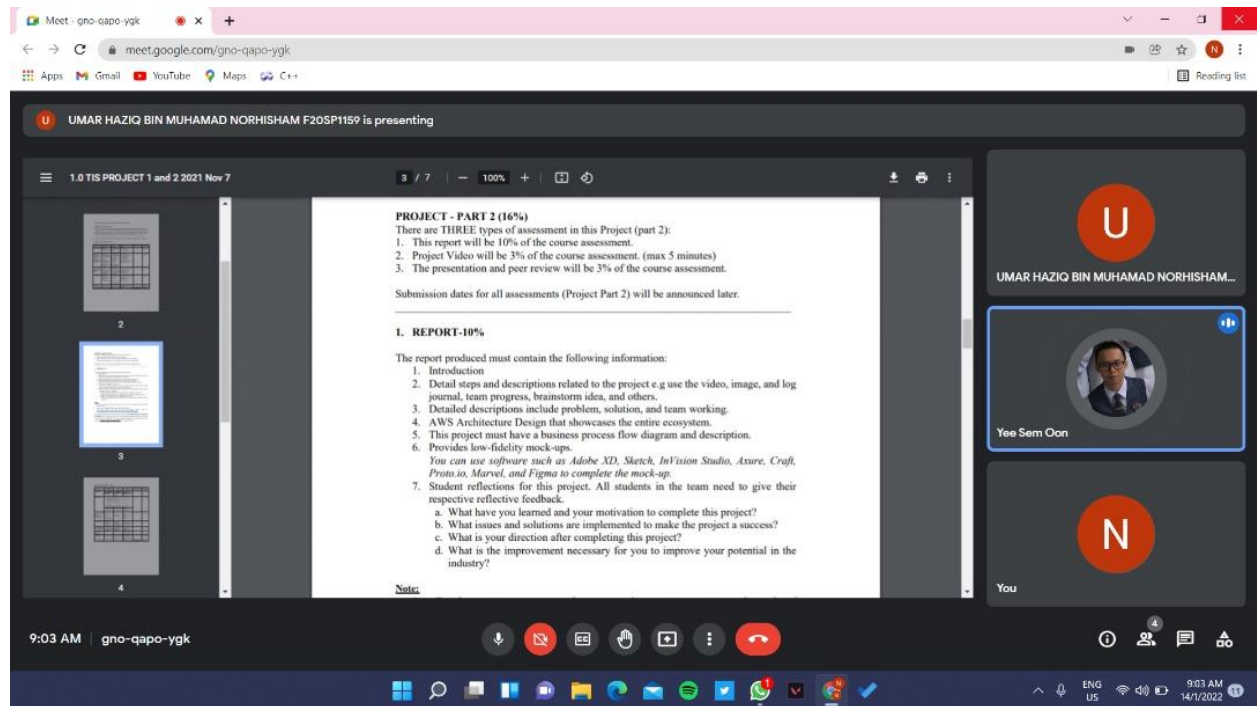
Users just need to download this programme from either the Google Play Store or the Apple App Store in order to begin using it. Then all they have to do is sign up for the event. As a consequence of the input, we just need the following information: name, address, phone number, and email address. It is likely that this information will be protected since it is limited. The information about customers is saved on the cloud. This software will be built using the 4th Industrial Revolution technologies idea, which incorporates big data analytics and the Internet of Things. This software also makes use of cloud computing features such as storage and security to guarantee that our application operates smoothly. We'll go through the specifics of how it works in the next portion of this study.

Gantt Chart



Journal

14 January 2022



A group meeting was conducted on 14 January 2022 to assign tasks for every group member (Sem , Shuhada). We have divided several tasks for each person.

Sem

- a business process flow diagram and description
- Student reflections for this project

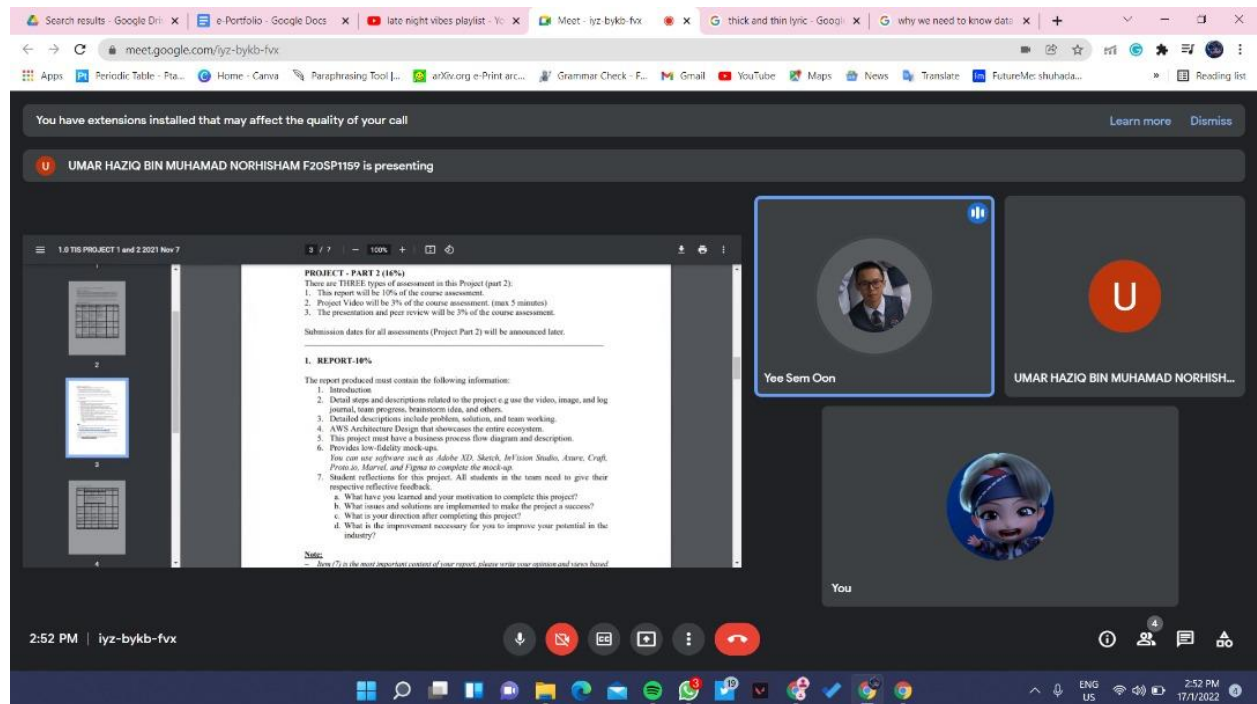
Shuhada

- Introduction
- AWS Architecture Design that showcases the entire ecosystem.

Umar

- low-fidelity mock-ups.

17 January 2022



A group meeting was conducted on 17 January 2022 to assign tasks for every group member (Sem , Shuhada). We have divided several tasks for each person. We were discussing and brainstorming the contents for our presentation slides and project video.

Sem

- Introduction (presentation slides)

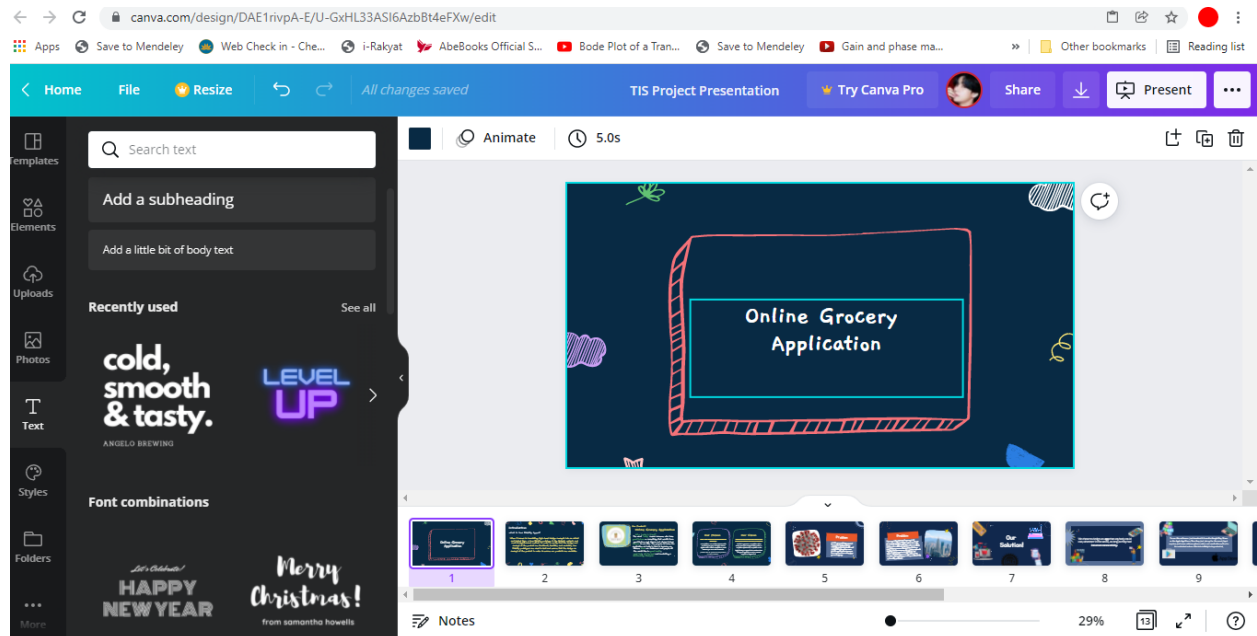
Shuhada

- Detailed descriptions include problem, solution, and team working (presentation slides)

Umar

- Description of the developed low-fidelity prototype (presentation slides)

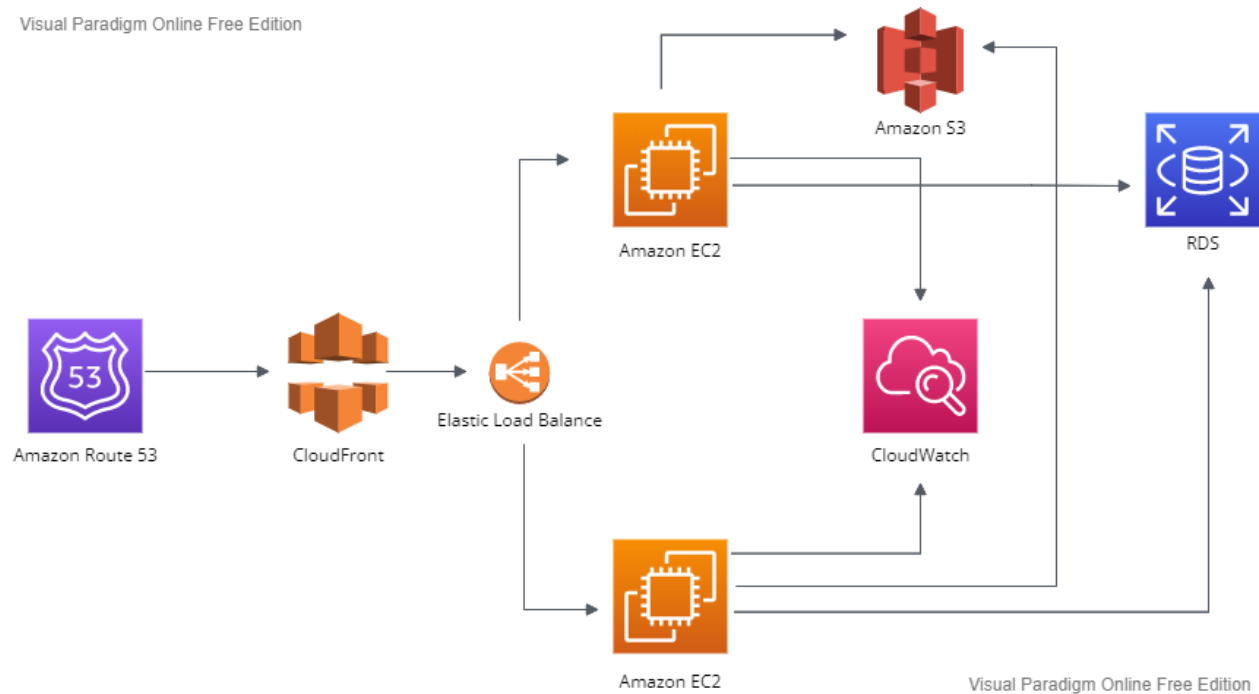
21 January 2022



Preparing slides for the upcoming presentation session with our lecturer Prof Shahizan on 24 January.

AWS Architecture Design

Visual Paradigm Online Free Edition



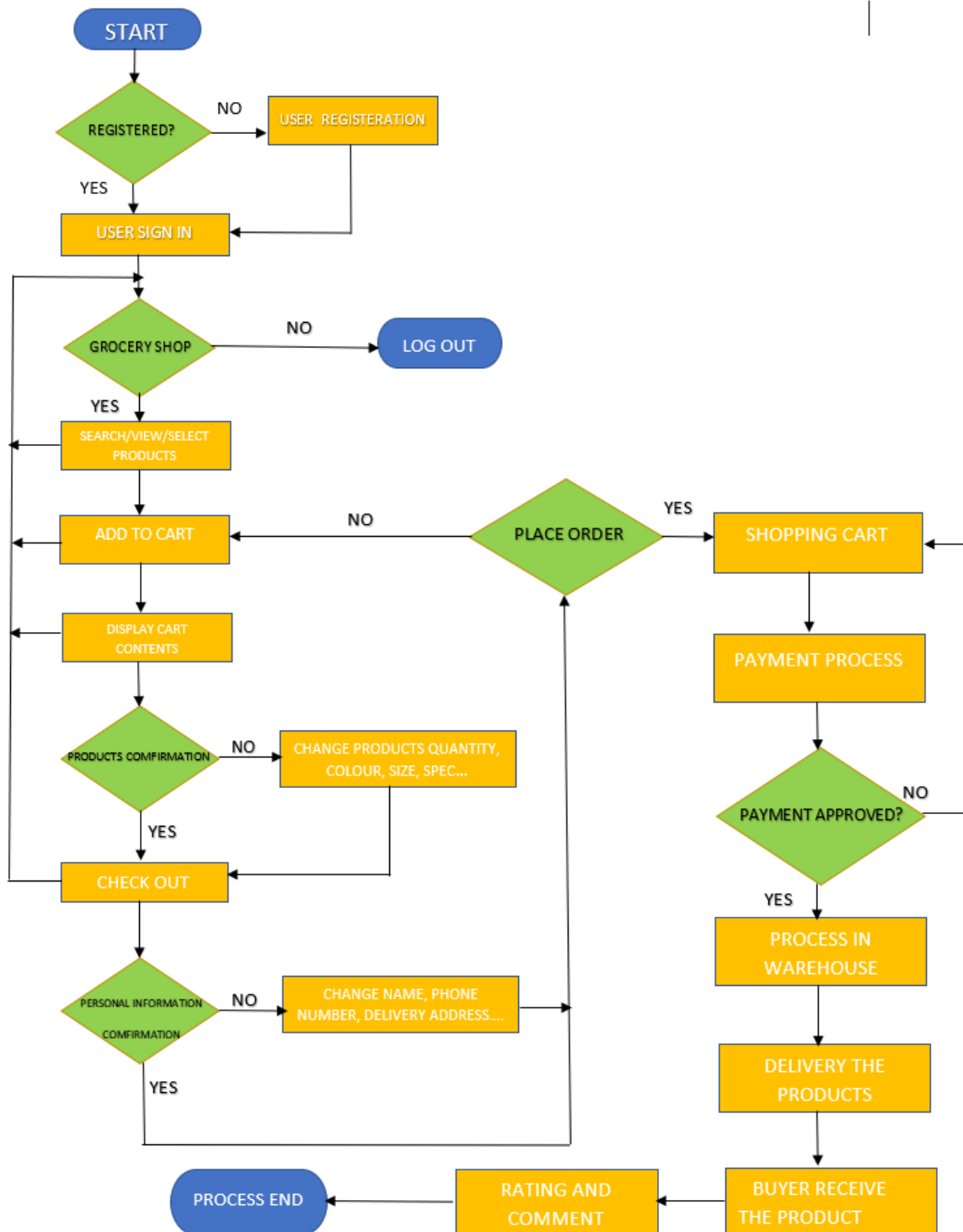
Amazon Route 53 will connect user requests to other infrastructure of AWS used. Amazon Route 53 also will monitor this application and help to prevent any failure while operating. Traffic caused by the huge number of users also will be managed by Amazon Route 53 so the apps will run smoothly even though many users are using the app at the same time. Amazon CloudFront is a content delivery network that will provide the fastest view to users. Users can view all the contents in the app without taking a long time to move to another section and show the icons and view of the section. It also has security that will help to protect the app.

Elastic load balancer(ELB) has the same function as Amazon Route 53 where the ELB will control the incoming traffic across the multiple targets. It also will keep checking the condition and health of the computer resource. Amazon EC2 provides memory and storage that will connect them with any availability zone all around the world. Assists in the creation of as many or as few virtual servers as required, the configuration of security and networking, and the management of storage. Amazon S3 will protect data from the application such as the input from the user and data that is already stored in the app. This will provide backup data and this data will be safely kept by Amazon S3. Data also will be classified and will be divided into many categories of data.

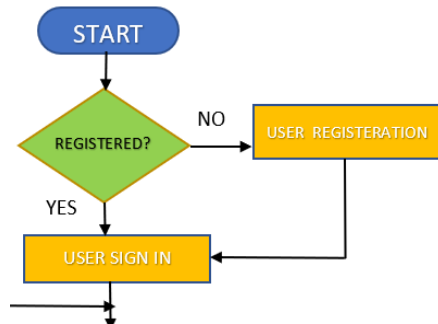
Amazon CloudWatch helps to monitor the applications that run on AWS. This project uses AWS so Amazon CloudWatch will monitor the application to make sure it runs smoothly. It also can

help to monitor Amazon EC2 for data transfer and disk usage activity. Amazon RDS managements and Amazon EC2 managements are same but Amazon RDS is more to management on AWS. Amazon EC2 is not a fully managed service so Amazon RDS will complete the function of Amazon EC2.

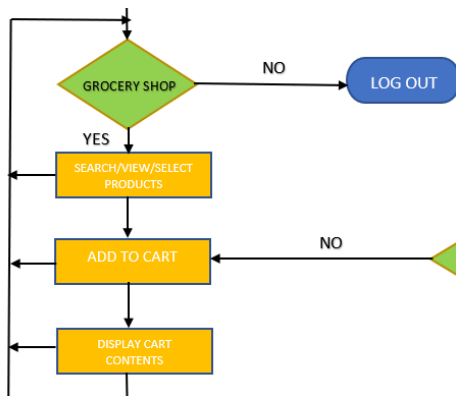
Business Flow Diagram



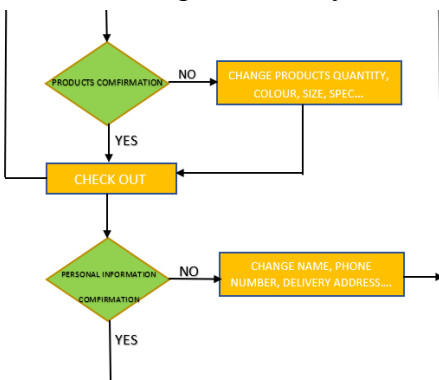
Description of business process flow diagram



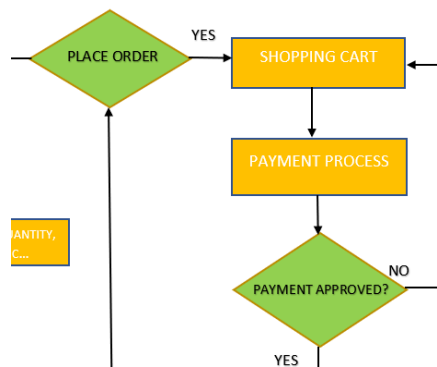
1. At first, users will enter the registration interface. If the users have an account, the users will be invited to sign in into their accounts. Otherwise, the users need to register a new account and sign in into their accounts.



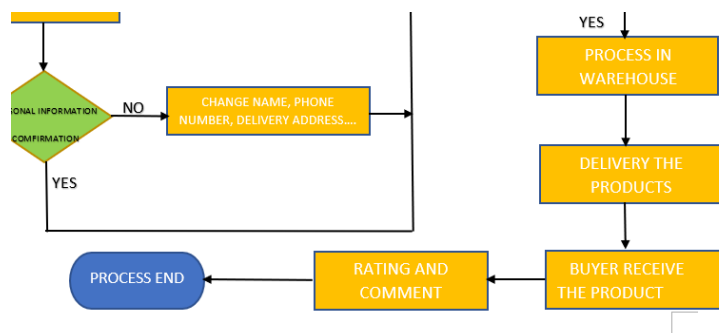
2. After signing into their accounts, users will enter the main page, which is the grocery shop interface. In this page, users are allowed to view, search and select the groceries or necessities that they need and desire. After selecting favourable products, they can add the products to cart and in the cart interface, it will display the information and contents of the products. If the users do not want to purchase any items, users can log out the application.



3. Next, in the cart interface, users are needed to check and confirm the information of the selected items for instance, quantities, sizes, colours, specifications, models and so on. After checking, users are allowed to check out in order to see and ensure prices of the selected items are affordable and reasonable for users. Besides that, in this phase, users also need to check their personal information such as name, address, phone number and so on for delivery purposes. If users discover any error or insufficient in their personal information. They are allowed to add on or correct it.



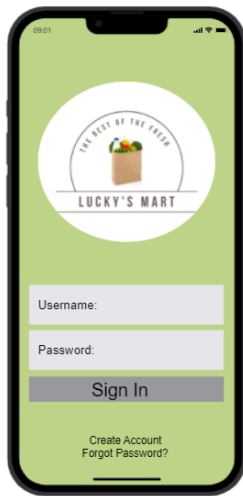
4. After checking and confirming all the selected items' and receivers' information, users are allowed to place orders and conduct payment processes. If the users are not ready to order, it will go back to the cart interface. After the payment processes are done by users, our system will examine the payment. If the payment is not approved by our system. It will go back to the shopping cart interface to invite users to conduct the payment process again until our system receives the payment and approves it.



5. After the payment is received and approved by our system, the items of our clients will be processed in the warehouse. After the inserting details and packing processes are done, we will ship the products to our clients. After clients receive the products, our clients and customers are kindly invited to give ratings or comments to our products and services in order to reflect ourselves and elevate our services and products to meet the demands of our clients.

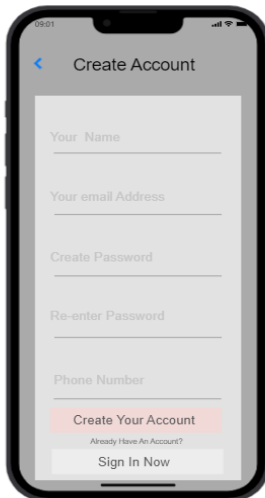
Low - fidelity mock-ups





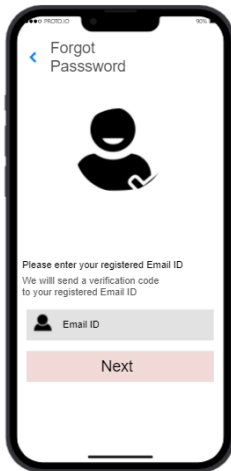
Login Page

The login screen is for registered users who intend to make a grocery purchase. To access our app, they must first enter their username and password.



Create Password Screen

Users who have not yet registered for our app will see this screen. They must submit their contact information, including their name, email address, and phone number. For security reasons, new users must also create a password.



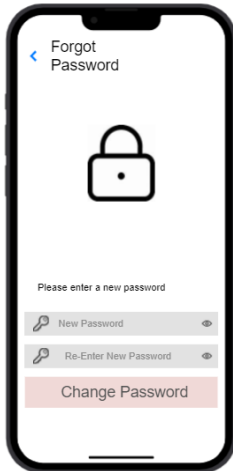
Forgot Password Screen

Users who have forgotten their account passwords will see this screen. For us to verify the account and provide a verification code, they must input their registered email address.



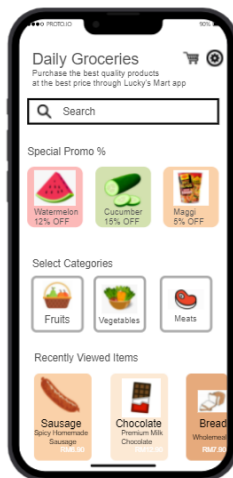
Forgot Password Screen -2

To verify and reset their account password, a verification code will be provided to the user's email.



Forgot Password Screen -3

The user can begin setting a new password for their account password



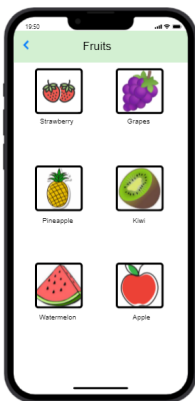
Main Screen

Our main screen is separated into three sections: promotional items, item categories, and recently seen items. This will make it easier for users to see our promotional items and choose the category item they want to buy. Users can also review previously seen items.



Items' category Screen

Users can check and select the category of the item they wish to buy on this screen.



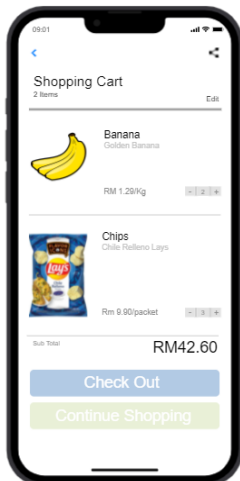
Items Screen

After selecting a category on the category screen, users can view and pick the things they want to purchase.



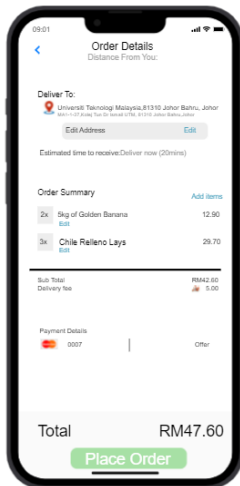
Items' Details Screen

The item's price and description are displayed on this screen. Additionally, this screen allows the user to add their own items to the shopping cart.



Cart Screen

Users can see what they've added to their shopping cart. This cart displays the number of products buyers will purchase as well as the total cost, excluding free delivery.



Payment Screen

Customers can view the information of the things they will be purchasing and getting on this screen, including the amount of each item and the overall price for the entire purchase. This screen will also allow customers to specify the delivery location for their products. After the customer has evaluated the information, they can make their payment using online banking and submit their order.

Reflection

a. What have you learned and your motivation to complete this project?

The thing that I have learned in this project is big data analytics. In this project, our group decided to develop an online grocery application by selecting big data analytic technology to elevate our product to become more advanced and meet market's demands and customers' needs. Via this project, I have studied deeply and found lots of information about this technology in order to understand this well. It is also important for me to develop the best architecture and write the report. Undeniably, it has directly improved my understanding, knowledge, uses and importance of big data analytics and I strongly believe that this knowledge is imperative in the industry in the future. My motivation to complete this project is I strongly believe the experience to develop this project is imperative for me in the future. As my dream is to become a mobile app developer and via this project I can learn and gain the experience to develop a low fidelity prototype of an application. This knowledge is important for me to purchase my dream and it has successfully motivated me to struggle hard to complete this project.

I've learned a lot from this project. One of the requirements for this project is that I must collaborate with others and give it my all. We've never met before, yet this project requires us to collaborate. This helps me learn how to work with others, even when we live thousands of miles apart. Nowadays, technology makes it possible for us to stay in touch and complete our tasks on time by allowing us to collect them all into one file. We have no excuses for failing to complete this assignment. Because this is a new endeavor for me, I am eager to see it through to the end. This internal drive enabled me and the other members of my team to complete the job on time.

For me and my group members, completing and finalizing this low-fidelity project was really difficult and challenging. We never imagined that we would be given the assignment to create a low-fidelity application. Nonetheless, like regular humans, we must always encounter new problems in our lives. I learned a lot of new knowledge when brainstorming ideas and solutions for this project, which will come in handy as I continue to expand my profession as a software engineer. First and foremost, I learned how to create an application that emphasized user-friendliness in order to make all users feel at ease and at peace while using it. I've had some experience with a stressful application where the instructions are quite difficult and tough to understand, which is something I don't want to happen with our application. Next, it goes without saying that my group members' communication, commitment, and experience have all played a critical role in ensuring the success of this project. They are really helpful and dedicated to completing all tasks assigned to them without complaint.

b. What issues and solutions are implemented to make the project a success?

The solution that my group implemented to make this project succeed is teamwork. Frankly speaking, this is the first time for us to conduct a mega project. In the journey to complete this project, we encountered lots of issues for instance, without direction in writing reports, lack of skills, lack of knowledge in the related fields and so on. However, due to the teamwork of my group, we collaborate jointly with each other, we find information together and we will do a meeting when we faced any problems or difficulties in completing the project in order to discuss together and find the best method to solve the issues. Fortunately, because of our cooperation, we have successfully completed our project with flying colors.

A problem I ran into is that my group just had a very general understanding of what this project is all about. To be quite honest, this is the first time that I have undertaken a task of this magnitude. In addition, my group members have just a little amount of information on this project, and the guideline is not as clear as we'd want. So that we can get beyond this obstacle, we have regular meetings to ensure that we are all working from the same set of ideas. Perhaps inquire about this idea with some of your acquaintances. Because I know I must learn how to use the software and master it in order to accomplish this assignment, we as team members worked together to overcome this challenge. Learning how to use the software is made easier by watching tutorial videos on YouTube.

The third important aspect I'll mention is the proper definition of group roles. A group's success can only be accomplished if and only if each member of the group plays their part and commits to each task assigned by the leader. For example, we always divide our project duties into three pieces, with one component given to each of us. The benefits of establishing group roles include knowing what each group's job and responsibilities are in relation to their assigned tasks. Furthermore, the development of group responsibilities is critical to the project's success.

c. What is your direction after completing this project?

About my direction after completing this project is that I will try my best to study others' 4IR technologies for instance Internet of Things, Augmented reality, Artificial Intelligent and so on. As I know, these technologies are imperative to elevate the productivity, customers' experience and efficiency in various sectors such as manufacturing, logistics, banking, businesses and so on. As my beloved country, Malaysia is planning and moving into the 4TH Industrial Revolution to become a modern and advanced nation. I hope I can prepare myself with this knowledge to contribute to my country to become a high-technological nation.

Upon completion of this project, I want to expand my technological knowledge base. We learned a lot about cloud computing, information systems, and more throughout the course. My degree is

in this area, so naturally I'd want to learn more. I'm well aware that what I've learnt in class is really the bare minimum that each college student should be familiar with. To fully grasp this course, I need to take the initiative. The skills and information I gained from this project will also be useful in innovation contests, therefore I want to participate in them as well.

First and foremost, I am grateful and proud of myself for successfully completing this project with my group members after devoting our hearts and souls to it for such a long time, discussing and exchanging ideas. Now is the ideal time for me to use what I've learned from this low-fidelity project to my own success. As a computer science student, I will take this opportunity to make myself a better person by putting all of my knowledge to good use. The positive outcomes that I gained from this project will serve as a guide for me as I work toward my goal of becoming a software engineer. For example, because I believe our country lacks this talent, I will use all of my AWS Academy and cloud computing knowledge to construct and develop a reliable software or website. In addition, I will make an effort to learn more about 4IR technologies, as this is the most recent technology that we will be employing in these hard times.

d. What is the improvement necessary for you to improve your potential in the industry?

The improvement necessary for me to improve my potential in industry is my knowledge and problem-solving skills. Undoubtedly, in the real-world industry, we will encounter different types of issues in completing our jobs and projects. Thus, our knowledge and problem-solving skills are imperative for us to settle any problems in industry. About my plan to improve my problem-solving skills and knowledge, I plan to go for an internship in order to gain the experience in solving the problems and gain the knowledge via learning from seniors during my internship in order to enhance my problem-solving skills and knowledge related to organization, 4IR technologies and so on.

Technique and understanding of software use are two things I need to work on before I enter the sector if I want to maximize my potential there. Actually, I'm simply learning about some of the tools we'll be using in this project. Many of these pieces of software are new to me. If I don't already know how to use this programme, it will take some time for me to get up to speed. It is imperative that I acquire as much information as possible in order to better myself for the future. This project has opened my eyes to the fact that, in order to work with the technologies in the future, we will need a broad range of knowledge and abilities.

