SECP1513-10 TECHNOLOGY AND INFORMATION SYSTEM

LOW FIDELITY PROTOTYPE - PROJECT 2

REPRESENTED BY

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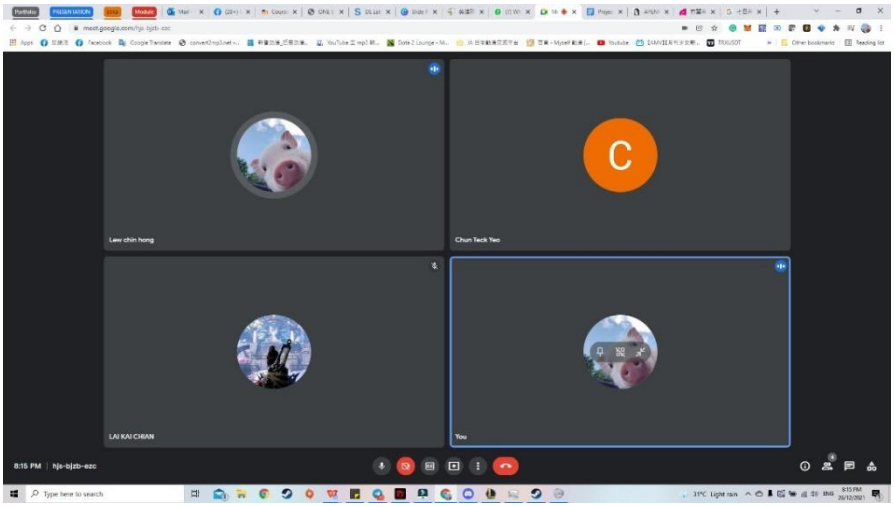
Introduction

On 7 November 2021, we sent a lot of emails to our potential customers to promote our service of developing a new system that suits their company's operation. As an outcome, we managed to receive a reply from one of them, which is the LYLN Home Decor Company. This company was established in the year 2020. From their reply, we know that they wish to have an enhancement on their existing online business platform. There are three weaknesses in their current platform which are unable to handle a massive amount of data, low level of platform security, and lastly, it does not provide on-demand service. Furthermore, due to the COVID-19 pandemic, the turnover of this company's physical store is affected critically, so they expect to concentrate their business via an online platform. To address these issues, we suggest a few of the fourth industrial revolution technologies, such as the Internet of Things (IoT).

Detail Steps and Descriptions

Date	Task
14/11/2021	All the group members were assigned a task, which is finding the potential client who could provide us with problems scenarios about the project. We also discussed which Fourth Industry Revolution technologies we are going to apply in this project.
15/12/2021	Since we were unable to find a potential client, Dr Naghmeh Niknejad provided us with an alternative way, which is creating imagined clients and problems scenarios.
16/12/2021	We have exchanged ideas about Project Part 1 in the WhatsApp Group. After discussing, we decided to choose Augmented Reality technologies as the main topic of our project topic. Since all the members were still confused about what going to do, we decided to ask for help from Dr and keep doing research first. Besides, all the group members are assigned with a task to hurry up complete the AWS Module since it is very important to conduct this project. In AWS Module 9, it is about Cloud Computing Architecture, and we are going to apply it in our project. We also decided to have a meeting on 17/12/2021.
17/12/2021	All members participated in the Google meeting to discuss Project Part 1. We discussed the introduction, case study, and we managed to evaluate some ideas about the selection of 4IR technologies applied.
23/12/2021	We had some discussions at WhatsApp group and completed the Cloud Computing Architecture Design.
25/12/2021	We conducted a group meeting through Google meet on this day and continued to process our project.

26/12/2012	Since the deadline for the Project 1 was around the corner, all members decided to complete it by today. We have a Google meet to complete the project Part 1 together in Google Documents. On this day, we finished our project Part 1 and submitted it to the lecturer through UTM e-learning. The picture below was taken during the discussion between group members. 
15/1/2022	We have some discussion about Project Part 2, and we decided to complete the prototype design first. In this project, we use Adobe XD to create our low fidelity prototype.
17/1/2022	Some prototypes were completed, and we further discussed the details of the prototype and prepared to write the contents of the report.
18/1/2022 - 27/1/2022	We worked together to complete the report, presentation slides, and video of the project 2. We finalized the contents of the report, the created video, and slides before we hand in these documents and videos.
28/1/2022	Do the final discussion about some appendix and due the project

Problem - Solution

LYLN Home Decor Company is a growing Malaysian company that has 10 million customers, RM200 Million annual revenue. Due to the COVID-19 pandemic, the company met some challenges, which are reduced passenger flow and management on their on-premises data centre. This is because on-premises data centre upfront charge necessary for additions and modifications, plus the time required to install, and physical space restrictions that can cap growth. The company has responsibility for provisioning, troubleshooting, and managing data centre infrastructure would consume a lot of operational costs and time. To overcome those challenges, we decided to provide solutions to the company, such as using the Cloud Computing service provided by AWS to provide an on-demand service hence reducing the operational cost, improving the security of the system, staff management, automatic software update and so on. Examples of Cloud services such as analysing data, storage, backup, and data retrieval, creating and testing apps, and delivering software on demand. To adapt to the change of the business due to COVID-19 and satisfy the demand of the company, we built an application that implements some kinds of 4^{th} IR technologies: Artificial Intelligence, Augmented Reality, Cloud Computing,5G, and Internet of Things. With the application we build, the customers can know the information of the furniture by pointing to their mobile devices to scan the product. The information of the furniture including the brand, the feature, and other things will pop up in the specific coordination of the furniture so that the customer can know more clearly about the function of the furniture. With this, shopping in the store without accompanying the staff could be achieved in real-life. This reduces the need to task more staff to provide guidance and information to the customers because the application will help the staff to execute most of this task. This will build up an environment to reduce the physical contact between the customer and the staff and obey the SOP procedures which are announced by the government. For the use of the company, the management staff can upload the information of the furniture by using the app. The information could be registered more efficiently. The application will be built up based on the cloud computing architecture. We found that AWS service could be a good solution to replace their on-premises data centre to overcome the previous weaknesses. AWS could offer highly dependable databases, large-scale cloud storage, and many centres around the globe. The information of the

furniture could be stored more securely and handled easily and does not need to recruit related professionals to handle the flow and the process in the databases. Most of the infrastructure is managed by AWS service providers. Besides that, by using AWS services, the company can collect user feedback in different aspects of user experiences. The data collected could be analysed and visualised in a way that the company could easily understand. They can gain this data through the digital portal.

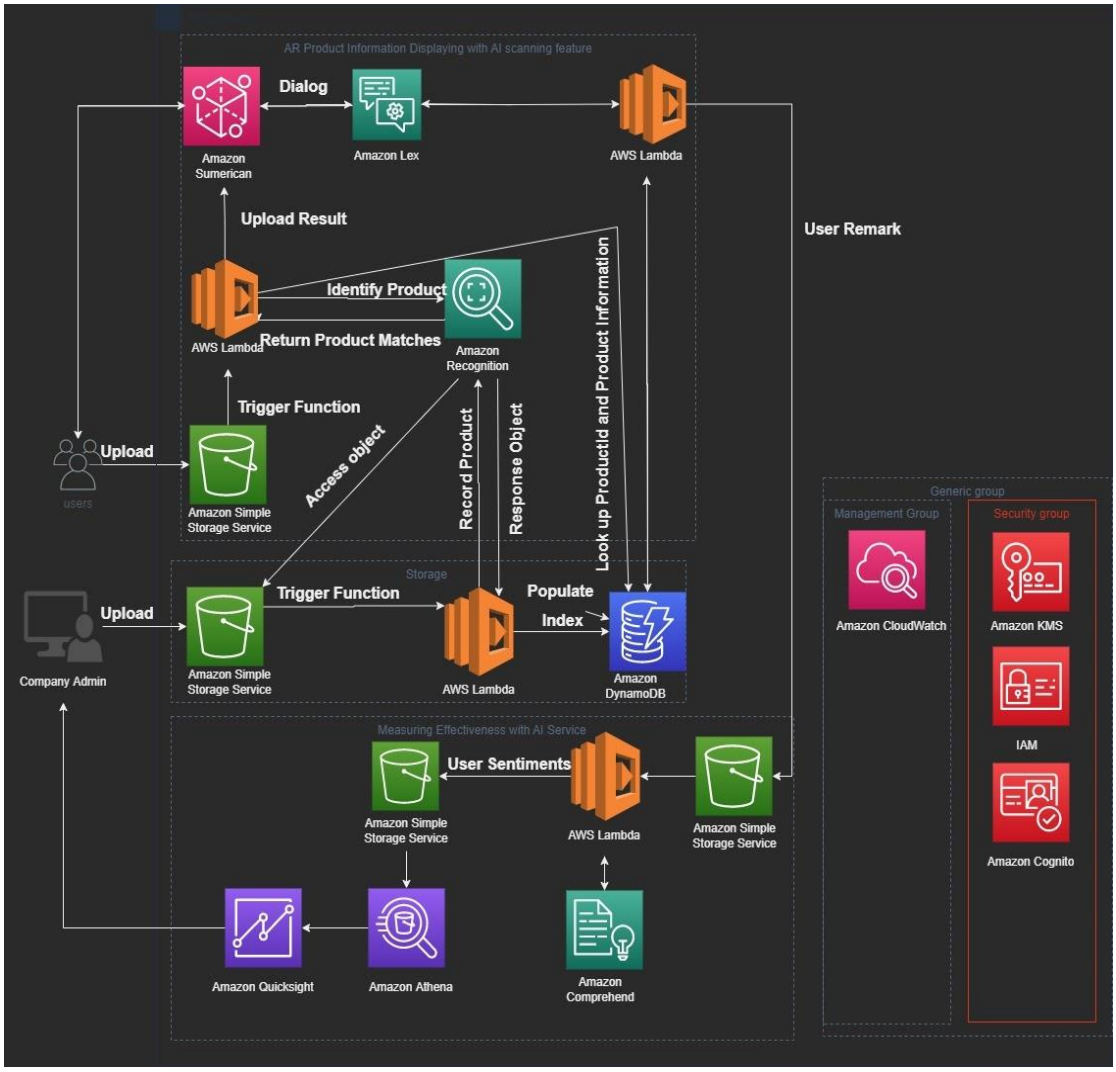
Teamwork

During the process of completing the project, we tried our best to cooperate with each of us and everyone was giving the contribution to the project. At the part of determining the direction of the project, we discussed together about the ideas and directions of the project. Every one of us spent some time doing some research on the Internet to find the information which is valuable to our project and shared our ideas in the discussion for processing the project report.

For designing the cloud computing architecture, we decided to spend time learning AWS services together through AWS modules. We also did some research about different kinds of AWS services and shared our opinion about these services. Since our cloud computing architecture involved a wide range of 4^{th} IR technologies, we decided to do investigation on other cloud computing architectures based on related technology respectively so that we could acquire more knowledge in a short period. Then we integrated these technologies into our cloud computing architecture for the project.

After submitting our project part 1 to our lecturer, we started to work on the design of the low fidelity prototype. We discussed together to ensure the workflow of our low fidelity prototype so that it could achieve the purpose of the project. Besides that, we also spent our time to learn how to use Adobe XD and share our reviews about the weakness of our design and fixed these weaknesses together by providing different alternatives.

AWS Architecture Design



Service Used:

<u>Storage</u>

Amazon S3 is a scalability,data availability,security,and performance object storage service.The data related to the websites,mobile apps,backup and restore,archiving,enterprise applications,Internet of Things(IoT) devices,and big data analytics can be stored and protected in Amazon S3.Persistent storage,in which each file is turned into an object that can be retrieved from anywhere via a Uniform Resource Locator(URL)

AWS Lambda used to run code without provisioning or managing servers. Users can upload code to AWS Lambda and run only when it's triggered. It pays only for the compute time that you use. AWS Lambda supports multiple programming languages

such as C#, Java, Python, and others. Lambda runs the Lambda function by assuming a role that you specified when you created the Lambda function.

AWS DynamoDB is a fully managed cloud database that supports both document and key-value stores to maintain a reference of the ProductId returned from Amazon Rekognition, the full name, and the information of the product. AWS DynamoDB adds multiple references for a single person to the image collection because adding multiple reference images per person greatly enhances the potential match rate for a person. It provides additional matching logic to further enhance the results.

Amazon Rekognition is a service that allows you to easily integrate picture and video analysis into your app.It just sends photos or videos to the Rekognition API,which recognises a variety of goods.For the submitted photographs and videos,Amazon Rekognition can also deliver the most accurate product analysis and recognition.It does not save copies of the photos that have been analysed.Product feature vectors are the mathematical representation of a product in Amazon Rekognition's collection.This is also known as a thumprint or a faceprint.

AR Product Information Displaying with AI scanning feature

Amazon Sumerian is a service provided by AWS to execute augmented reality and 3D applications, without any professional skills in 3D graphics. Developers can use Sumerian to create highly immersive and interactive scenes and run them on common hardware such as IOS mobile devices. At the same time, Sumerians support multiple languages and gestures, making the interaction more realistic and friendly.

Amazon Lex is a service for building conversational interfaces with voice and text. It provides the ability to have interactive conversations with the user, understand its areas of interest, and deliver appropriate information.

AWS Lambda, Amazon Rekognition, and AWS DynamoDB as explained above will also apply in this area.

Measuring Effectiveness with AI Service

Amazon Simple Storage Service(Amazon S3) is used to store information and provides a data retrieval for AI service and AWS Lambda execute the code when there is demand.

Amazon Comprehend is a natural language processing service that utilise AI to extract meaning from text and assesses insights or sentiments in text.

Amazon Athena is an interactive query service that uses normal SQL to evaluate data in S3.

Amazon Quicksight enables business intelligence accessible to everyone and integrates analytics into the app,allowing you to execute complicated analyses using machine learning insights.

Security Service

Amazon Cognito is a service that makes integrating user sign-up and authentication into you app a to become a simple thing.

IAM allows user to securely control access to AWS services and resources.The owner may create and manage AWS users and groups using IAM.The owner can utilise the IAM authorization to grant and prohibit access to AWS resources to users and groups.The user or role that runs the commands in AWS must have authority to offer a set of managed policies to help you get started quickly.IAM might apply minimal managed policies to a user or role through:

- AmazonDynamoDBFullAccess
- AmazonS3FullAccess
- IAMFullAccess
- AmazonSumericanFullAccess

The AWS Key Management Service(AWS KMS) allows you to produce and manage encryption keys,and regulate how encryption is utilised across AWS services and in the app. In Amazon S3 and DynamoDB,the AWS Key Management Service encrypts all data at rest

Workflow:

Storage

First, the company admin provides the collection of the images with the pieces of information of the product as bytes or makes them available to Amazon Rekognition inside an Amazon S3 bucket. After that, Amazon S3 detects the object-oriented event and publishes the object-created event to Lambda by invoking the Lambda function. Hence, Lambda runs the Lambda function to process the images that we uploaded to Amazon S3. The function of Amazon Rekognition is to detect the product images and record them as an index is initiated, and create multiple entries within our Amazon DynamoDB key-value store for a mapping between the ProductID, the product's full name, the information of the product for later reference. Multiple references for a single product were added to the image collection because adding multiple reference images per person greatly enhances the potential match rate for a person. It also provides additional matching logic to further enhance the results.

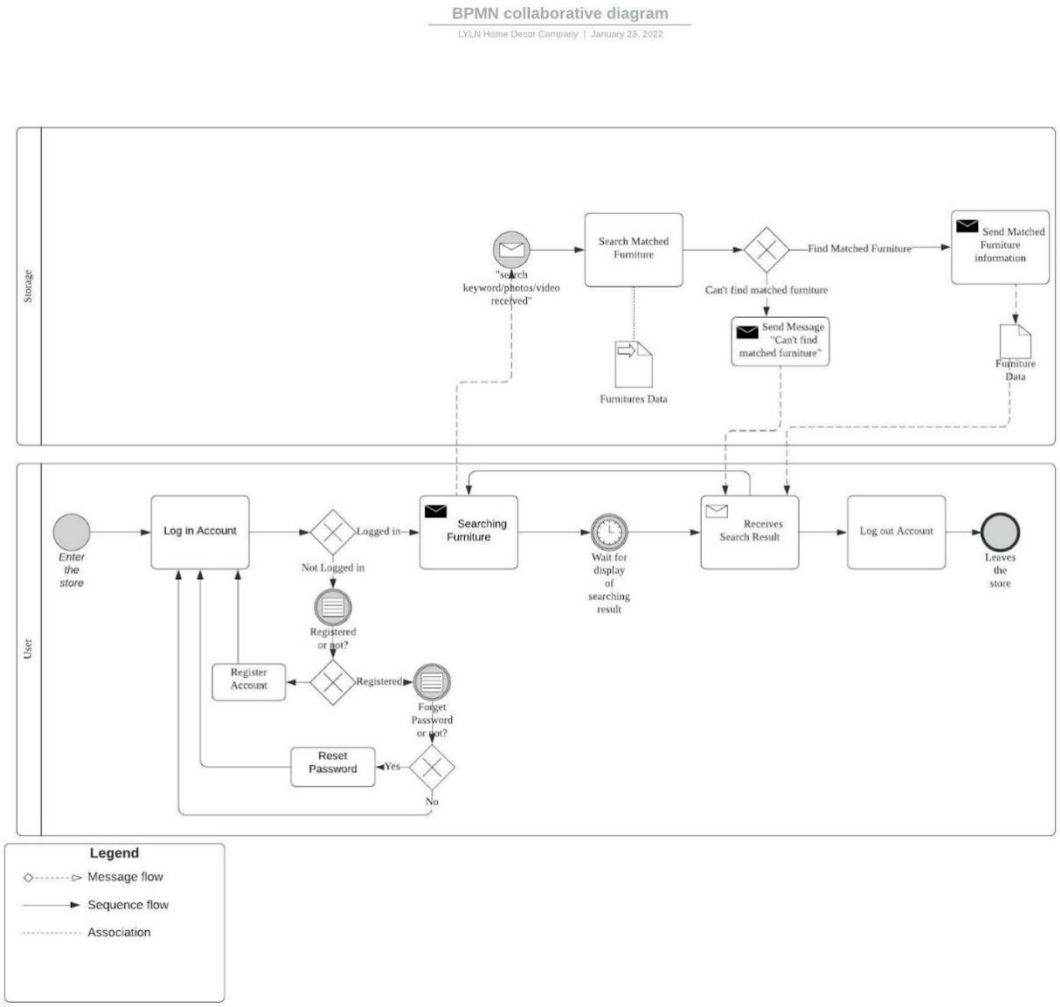
AR Product Displaying with AI scanning feature

At the start, users upload videos or photos through their phone app to S3 Bucket for saving photos to analyse. The Lambda function receives the trigger from Amazon S3 to execute its function to identify the product, and the Lambda function will use the Rekognition API to identify the product. By using the API, at least two parameters are needed to provide: the name of the collection to query, and the reference to the image to analyse. A reference to the Amazon S3 bucket name and object key of the image or the image itself as a byte stream is provided. In response, Amazon Rekognition returns a JSON object containing the ImageIds of the matches. This object includes the coordinates of the product within the images, among other metadata and information as documented to AWS Lambda. Later, AWS Lambda publishes the result to Amazon Sumerian and Amazon Lambda validates user inputs and fetches appropriate material from Amazon DynamoDB. The material is then delivered to Lex as a response to user queries and finally, the Sumerian editor will display the AR interface on the user's mobile device.

Measuring Effectiveness with AI service

Amazon Lex collects user feedback, which is saved in Amazon Simple Storage Service(S3) and Amazon Comprehend analyses the feedback. Later, Amazon Comprehend finds meaning and insights/sentiments in text, and insights from user feedback are stored in S3. The insights from user feedback are analysed by using Amazon Athena. Lastly, Amazon QuickSight visualises the insight.

Business flow diagram

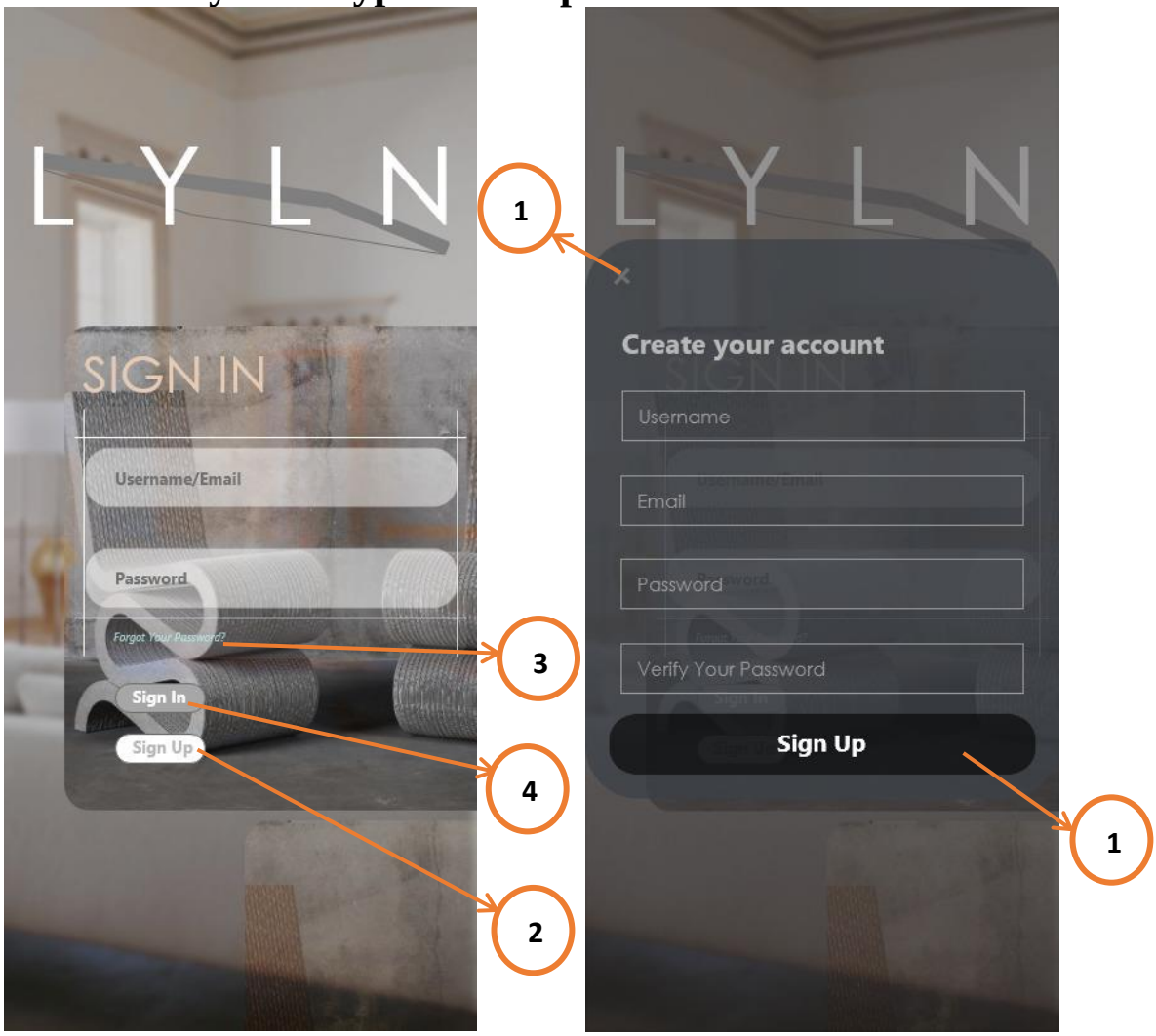


When the customers enter the store, they will be required to log in to their user account so that they can use the features of the app. If the customers can not log in to the app successfully, it may be because they have not registered their own account. Hence, they need to register an account so that they can log in. For those customers who had registered an account before, they may forget the password. With this, they are required to reset their password. Then, they can log in to their account with a new password. After they log in to their user account, they can use the “Scan” function in the app to scan the furniture to search for the information. The user also can search for interesting furniture by using the “Search” function, which means typing some keywords to search. The app will send scanned photos and videos or search keywords to the database. They need to take some time to wait for the display of the search result.

In the database, the uploaded information from the apps will be analyzed and used to identify which furniture data is matched with the uploaded information. Since this application is dedicated to LYLN Home Decor. The application's scan function will only be functional to the furniture based on the LYLN Home Decor, if the user tries to scan furniture which is not from LYLN Home Decor, the database would not find the matched furniture. This situation will be the same if the user types keywords that are not related to the furniture in the store.

If it fails to find the matched furniture, the app will receive a message "Can't find matched furniture" from the database and display the message on the customer's device. Oppositely, if it is successful to find matched furniture, the customer will receive the data about the matched furniture from the database. The scanner will pop out and 3D AR furniture will appear on the scanner's screen. Furthermore, it will also show the information about the furniture including size, price, material and so on details. The users could also choose a location to place the chosen furniture and test the suitability of the furniture in a different location. Besides, the user can interact with the 3D furniture by spinning the furniture to see the details on the furniture. Before they want to leave the store, they are required to log out of their user account.

Low Fidelity Prototype mock-ups



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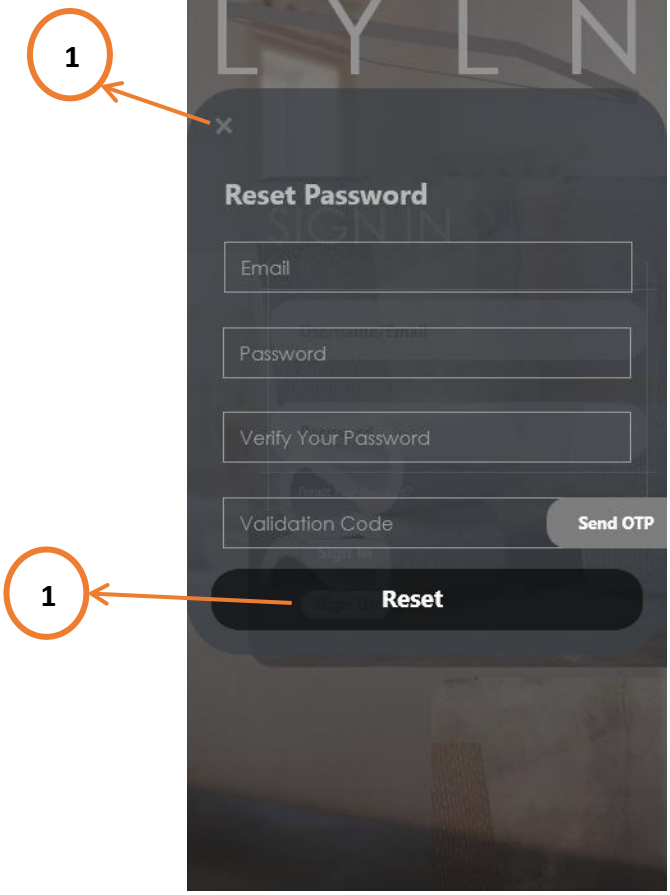
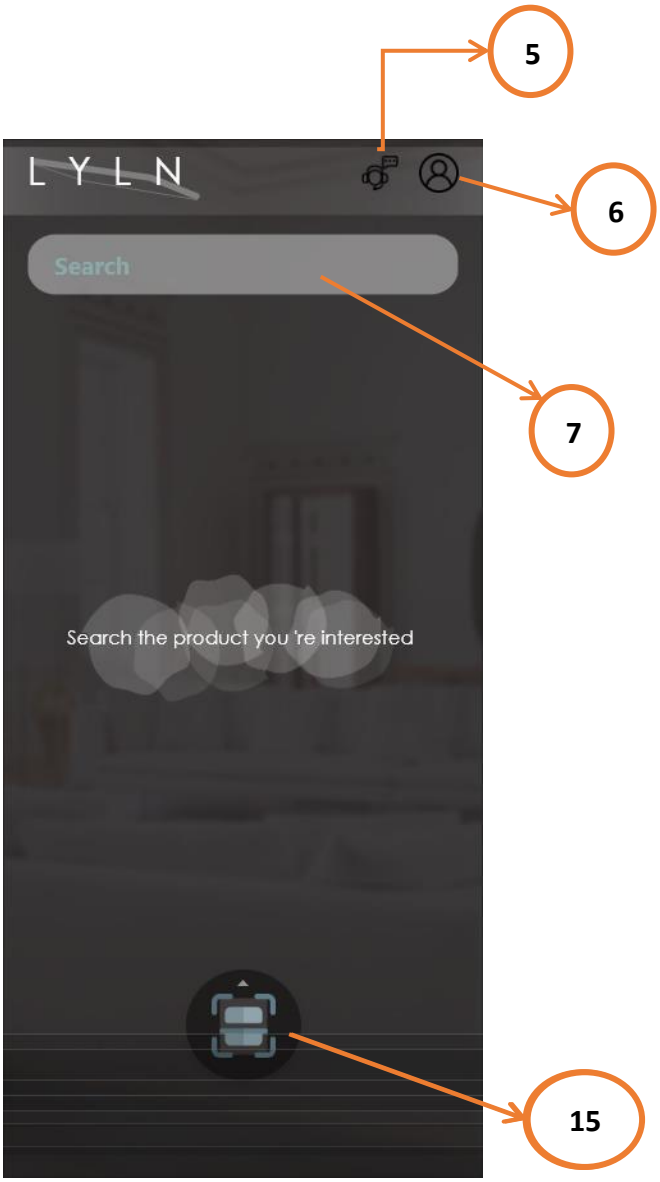

1
LYLN
Reset Password
Email
Password
Verify Your Password
Validation Code
Send OTP
1
Reset

3


5
LYLN
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Search
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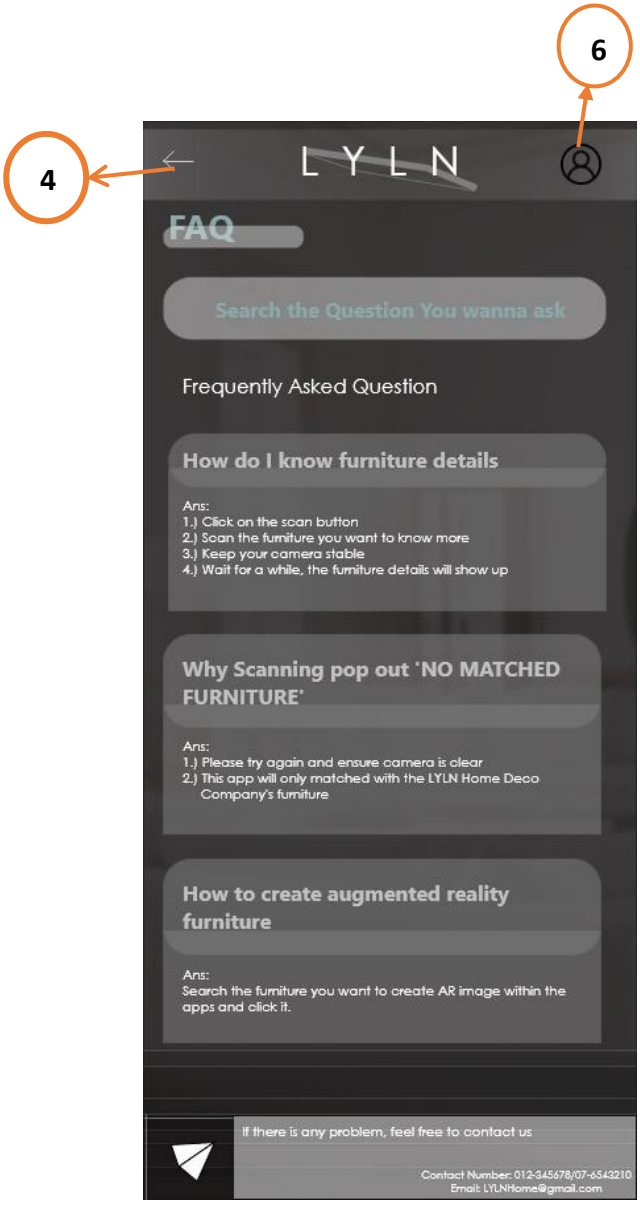
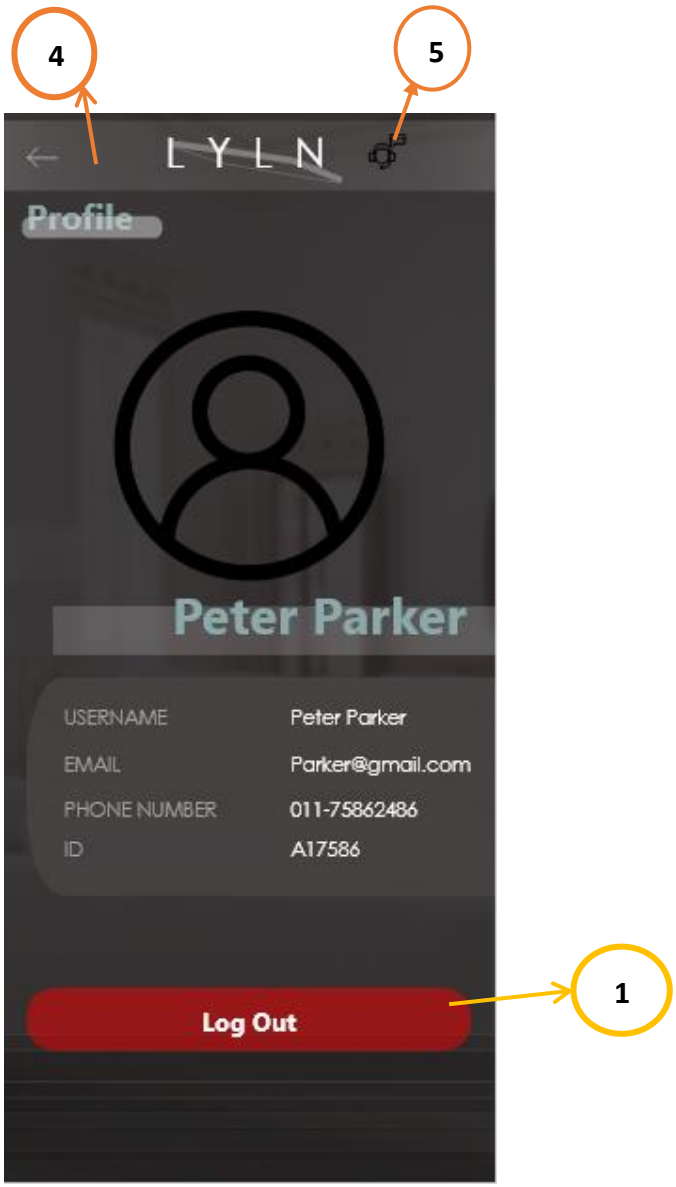
Search the product you 're interested
15

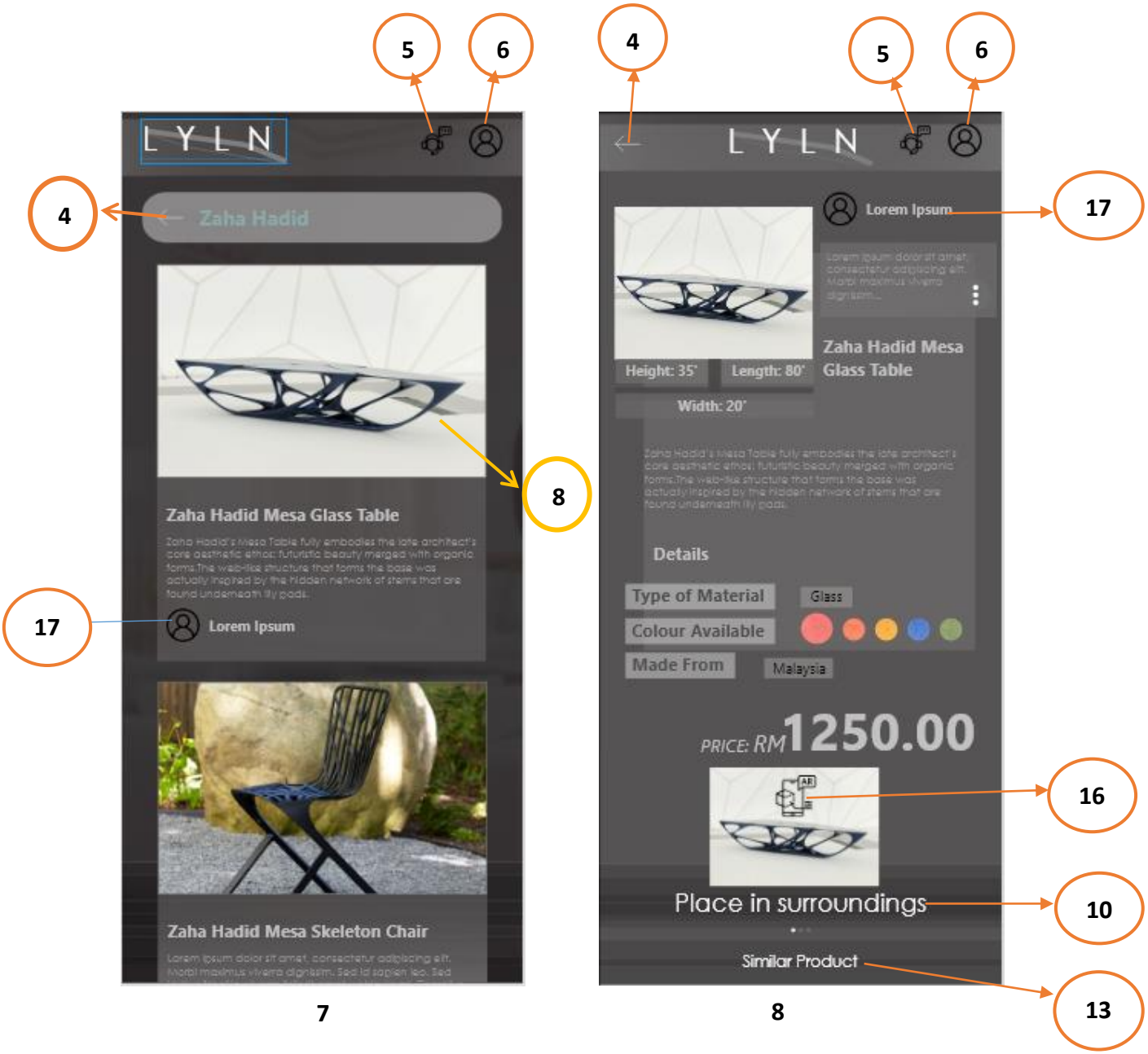
4


6
4
LYLN
FAQ
Search the Question You wanna ask
Frequently Asked Question
How do I know furniture details
Ans:
1.) Click on the scan button
2.) Scan the furniture you want to know more
3.) Keep your camera stable
4.) Wait for a while, the furniture details will show up
Why Scanning pop out 'NO MATCHED FURNITURE'
Ans:
1.) Please try again and ensure camera is clear
2.) This app will only matched with the LYLN Home Deco Company's furniture
How to create augmented reality furniture
Ans:
Search the furniture you want to create AR image within the apps and click it.
If there is any problem, feel free to contact us
Contact Number: 012-345678/07-6543210
Email: LYLNHome@gmail.com

5


4
5
LYLN
Profile
Peter Parker
USERNAME
Peter Parker
EMAIL
Parker@gmail.com
PHONE NUMBER
011-75862486
ID
A17586
Log Out
1

6


5
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LYLN
Zaha Hadid
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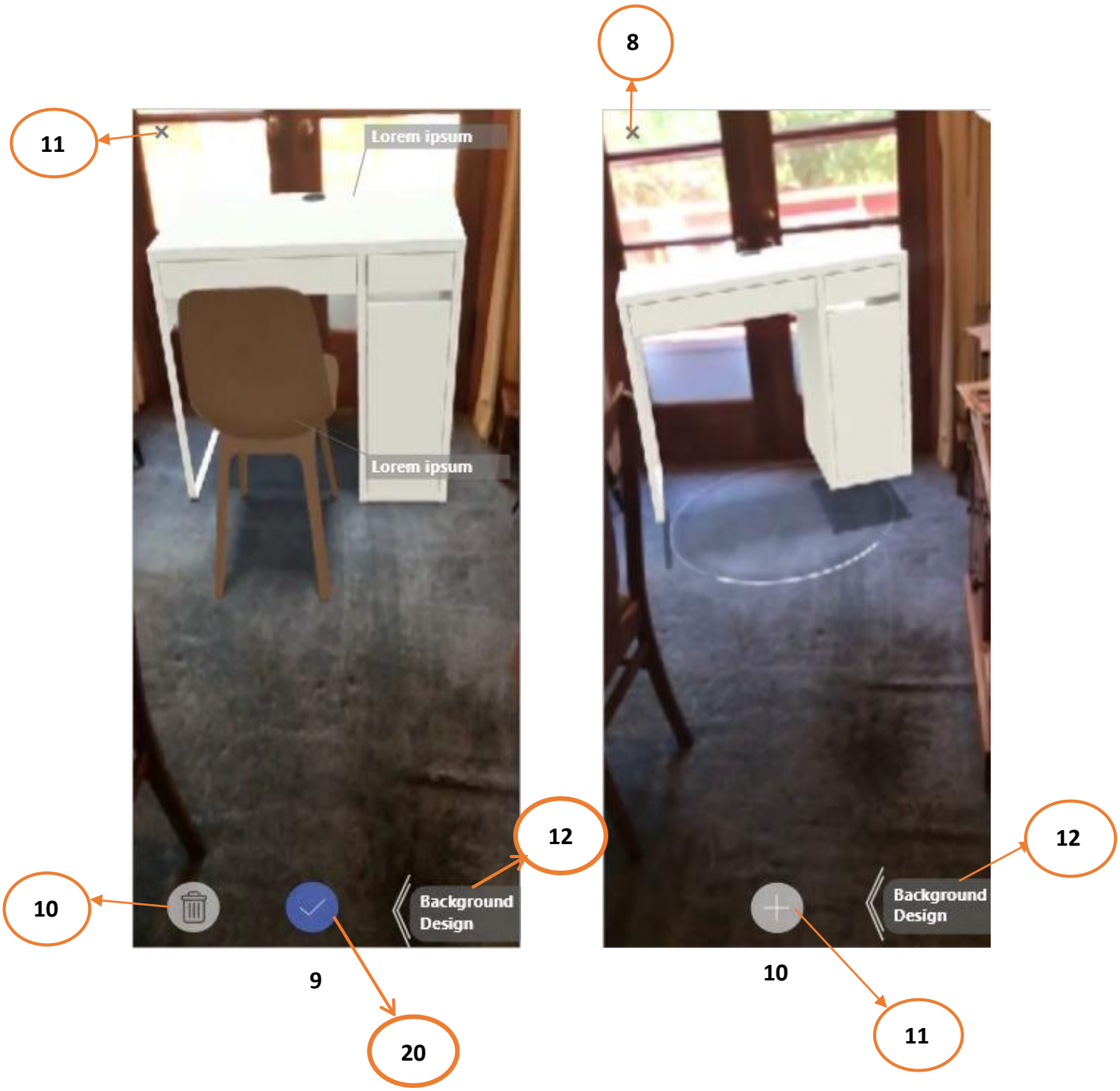
Zaha Hadid Mesa Glass Table
8
17
Lorem Ipsum
Zaha Hadid Mesa Skeleton Chair
7
LYLN
Lorem Ipsum
17
Height: 35"
Length: 80"
Width: 20"
Zaha Hadid Mesa Glass Table
Details
Type of Material
Glass
Colour Available
Made From
Malaysia
PRICE: RM 1250.00
16
Place in surroundings
10
Similar Product
13
8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Background Design
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Background Design
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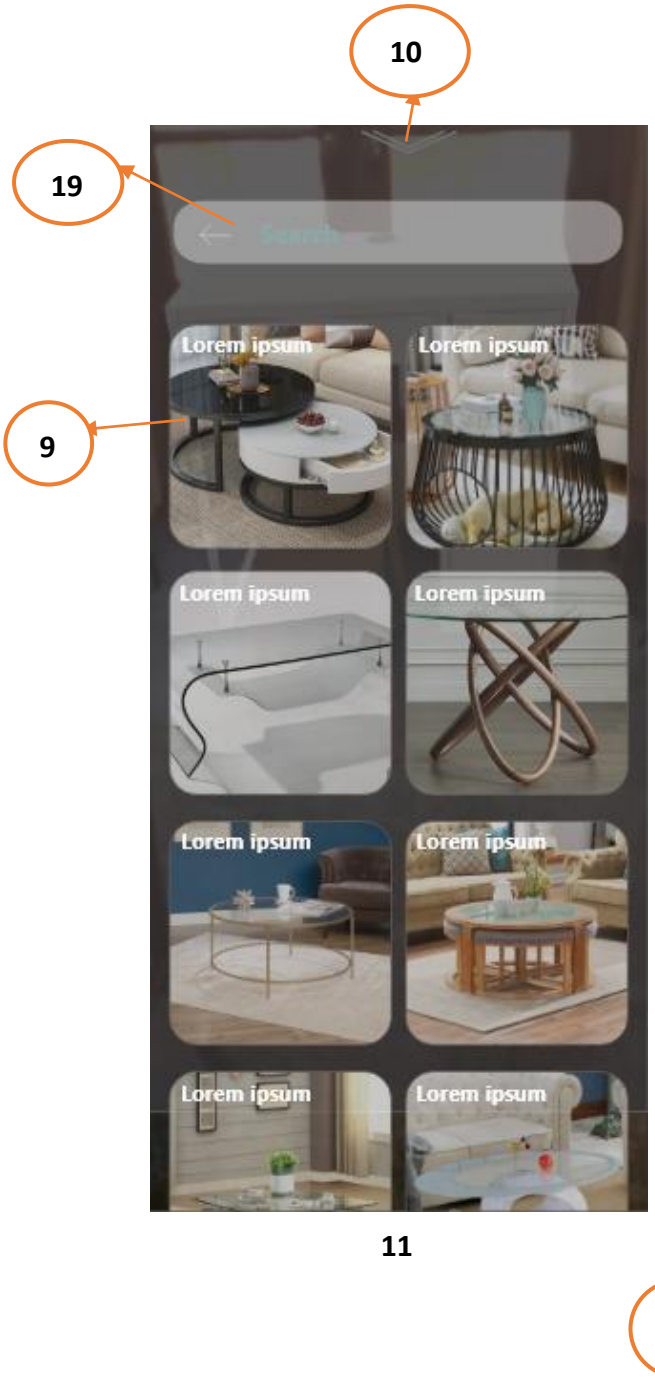
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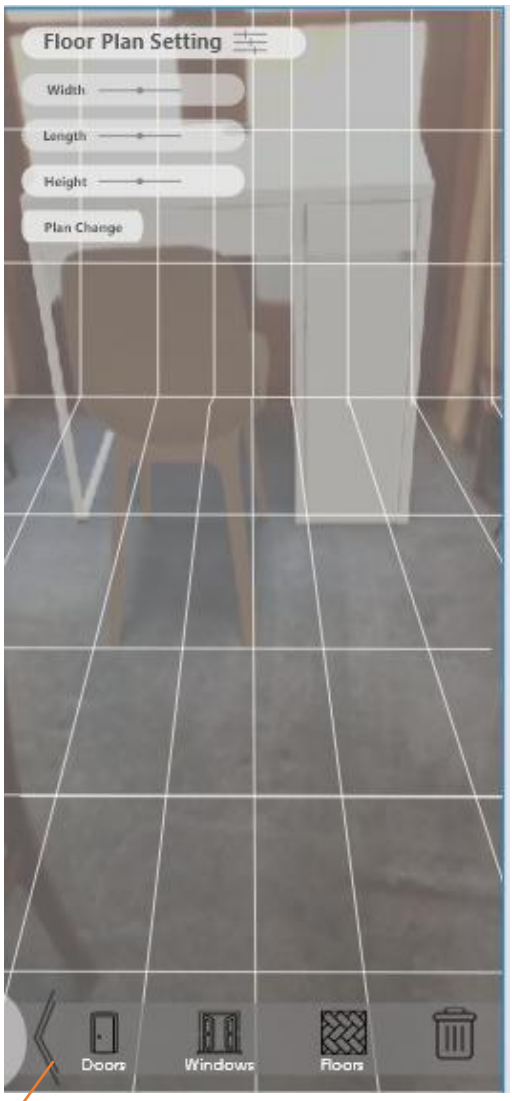
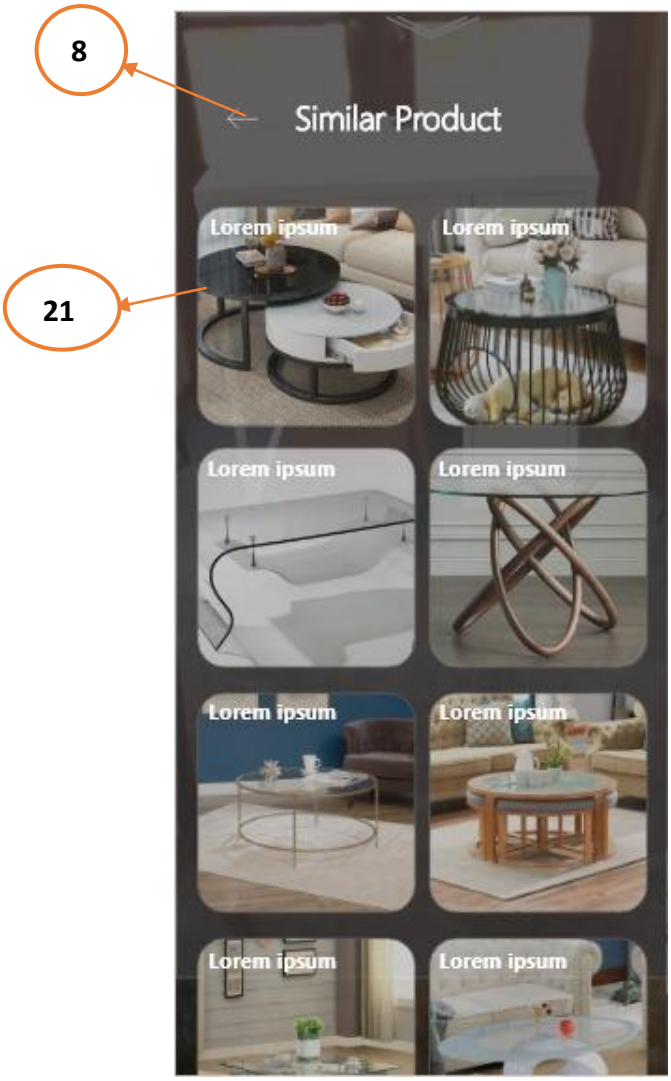

Floor Plan Setting
Width
Length
Height
Plan Change
Doors
Windows
Floors
9

12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Similar Product
Lorem ipsum
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4
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Scanning

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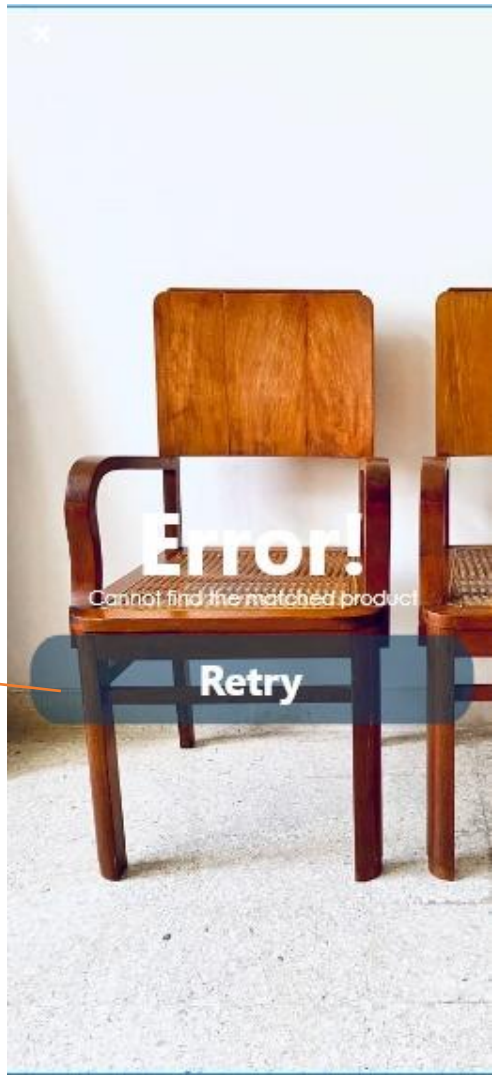
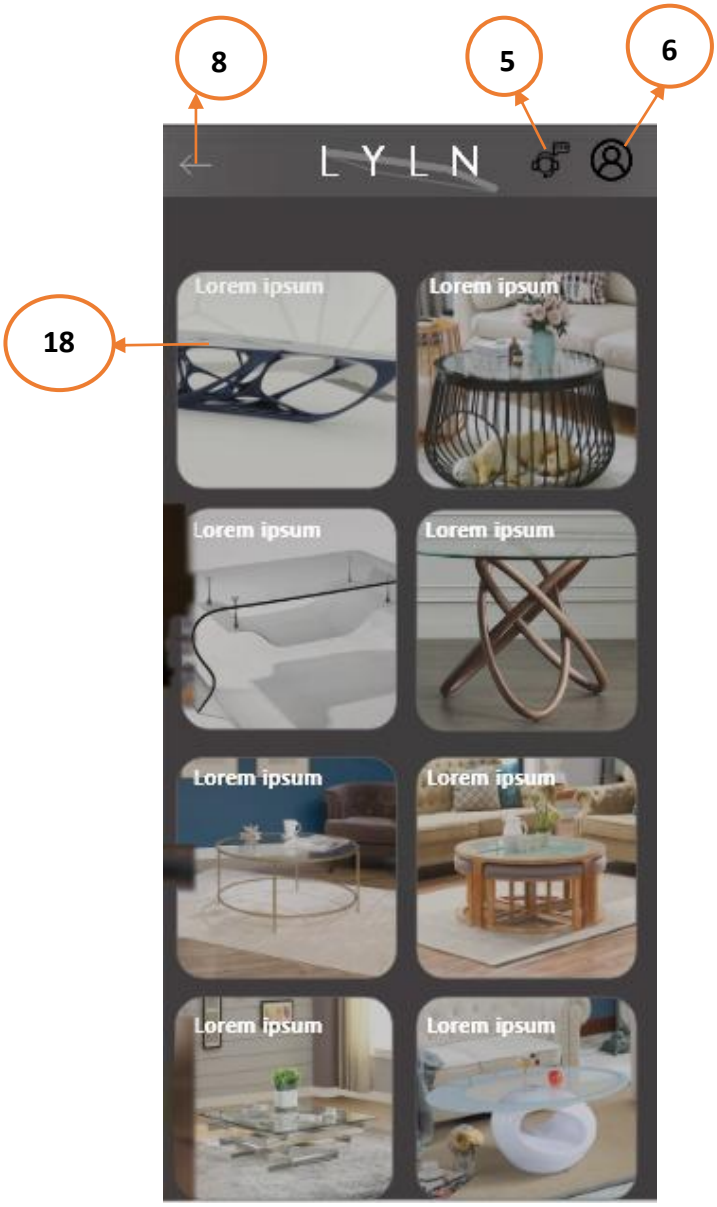

Error!
Cannot find the matched product
Retry

15


Click and hold to rotate

16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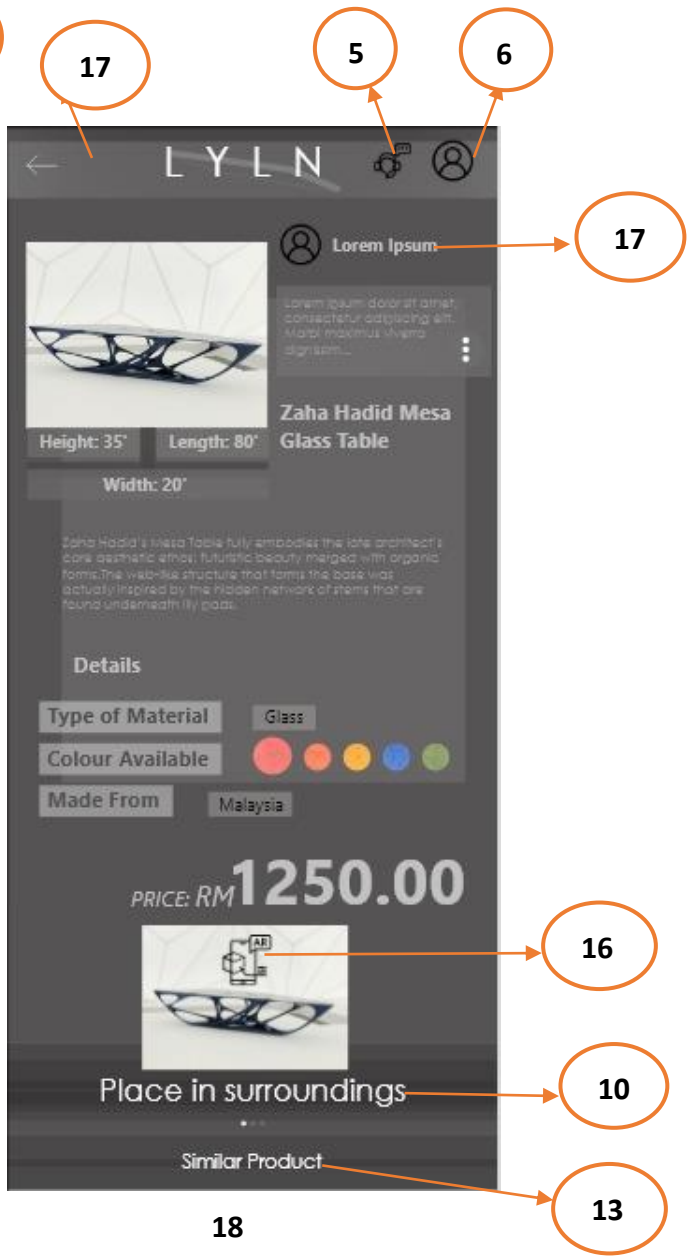
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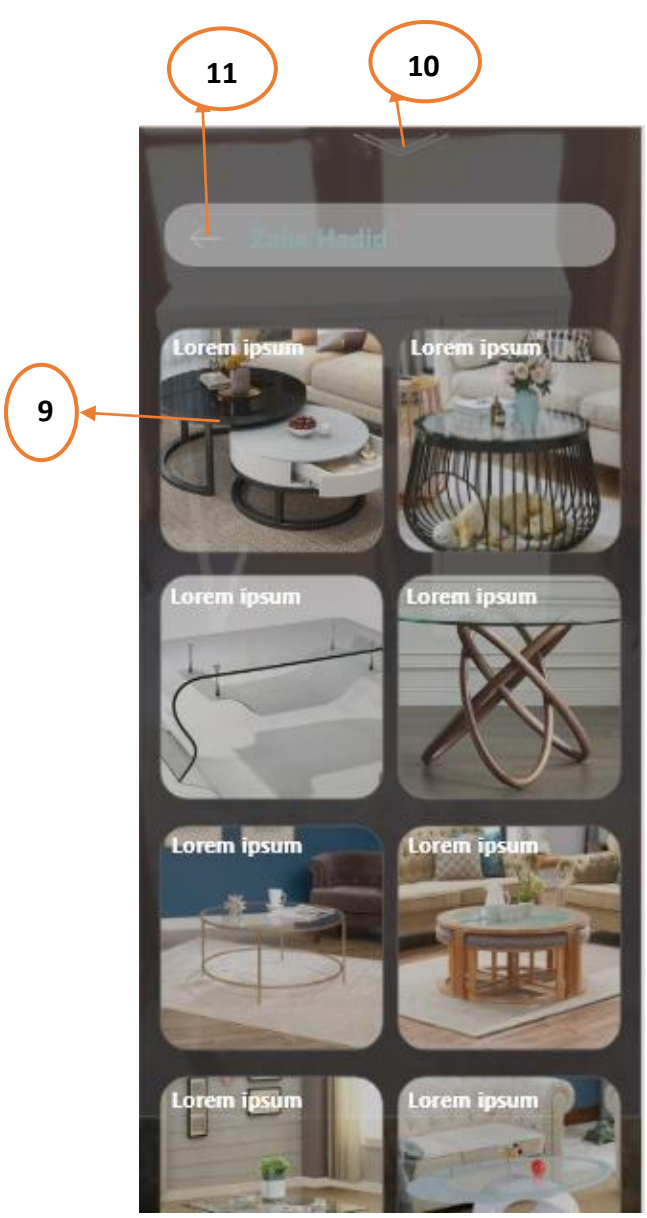
LYLN
Lorem Ipsum
Zaha Hadid Mesa Glass Table
Height: 35"
Length: 80"
Width: 20"
Details
Type of Material
Glass
Colour Available
Made From
Malaysia
PRICE: RM 1250.00
Place in surroundings
Similar Product

18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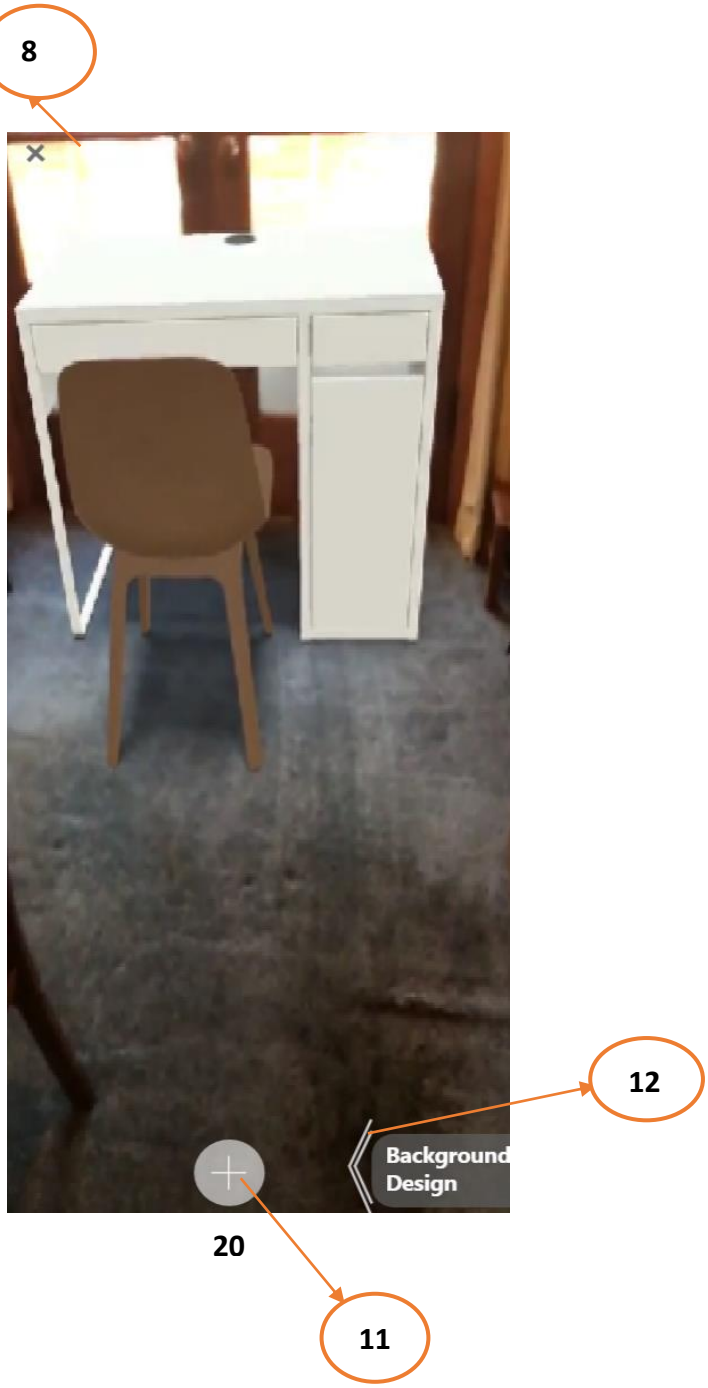
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Background
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Lorem Ipsum
Zaha Hadid Mesa Glass Table
Zaha Hadid Mesa Glass Table
Height: 35"
Length: 80"
Width: 20"
Height: 35"
Length: 80"
Width: 20"
Details
Details
Type of Material
Glass
Colour Available
Made From
Malaysia
Type of Material
Glass
Colour Available
Made From
Malaysia
PRICE: RM1250.00
PRICE: RM1250.00
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16
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Place in surroundings
Place in surroundings
10
Similar Product
Similar Product
13
13
21
22

Reflection

Ng Kai Zheng

Within this project, we have touched a lot on the Fourth Industry Revolution (IR4.0) technologies such as Artificial Intelligence, Internet of Things(IoT) especially in augmented reality and virtual reality because our project topic is related to it. We have more insight into prototype design and cloud architecture. In my opinion, this field is professional knowledge, what I know so far is only a small part, I should keep exploring and researching. This provides us with the opportunity to learn how to build a prototype by using UI/UX design software such as Adobe XD and Figma. Furthermore, We also have more understanding of cloud computing architecture and its components and functions. Both front-end and back-end play a very important role to improve user experience and making the system more efficient. Throughout this project, I have the opportunity to take part in problem scenarios and solve the problems by a team. This is a great experience for future development and learning how to solve problems as a team.

At the start of the project, We have faced a lot of challenges because all of us are new in technology and information. The first challenge we met at the very beginning of the project was we could not find potential clients who could give us a problem scenario, but Dr Naghmeh Niknejad provided us with a solution which is imaginary clients. We do spend a lot of time researching cloud computing architecture and learning how to use UI/UX design software to complete the project. Sometimes when we are facing problems very complicated, we will ask for help from Dr Naghmeh Niknejad and Dr was very passionate about answering our questions, We are very much appreciated it. All the members in the team are giving very good cooperation and teamwork makes the dream work. After we overcome all of those challenges, finally we successfully complete the whole project.

This project has piqued my interest, I am very willing to continue learning about knowledge in cloud computing and prototype design. I would like to explore more functions on AWS Cloud Computing because I saw cloud computing trends in the future. In this project, I have the honour to participate in the prototype design. I believe this experience will help me a lot in similar projects in the future. Besides, I

will try to self-learning on prototype design because I wish I could build out software including front-end and back-end on my own. So even after the project, I will keep following up with interest in cloud computing and prototype design.

In the point of my view, I think I should improve my soft skills such as communication skills, teamwork skills, especially adaptability skills. Since at the very beginning of the project, I was very confused and had no idea about what should I do because this is the first time I have the opportunity to take part in a development team. This actually could be improved because I have to learn to adapt to challenges and new technologies to improve my potential in the industry. This is because technology is constantly improving, and in order to keep up with the changing times, I have to keep updating my knowledge to stay competitive.

Lai Kai Chian

Throughout this project, we are exposed to different components of the Fourth Industrial Revolution (4IR) such as cloud computing, virtual reality(VR), Internet of Things(IoT), and so on. While conducting this project, we learned more detail about how cloud computing works, the concepts of implementing virtual reality and augmented reality in daily life, and the usage of other 4IR technologies. We also learned how to implement the cloud computing services provided by Amazon Web Services to design and create a website or an application. Besides, in order to complete this project, we are introduced to several useful UI/UX design software such as Adobe XD, Figma, Marvel, and so on which can be used to design the prototype. In this project, we learned the skills to develop a website by using these software programs. We also learned how to create a cloud computing architecture diagram to design and exhibit the relationship between the components such as databases, storage, security, and more.

In the beginning, we were confused about the ways to conduct this project, especially when we were told to find a potential client who can provide input and problem scenarios encountered to complete this project. However, since most of us could not find a client to assist us in completing this project, Dr Ngahmen Niknejad allowed us to create our own case study and explain the case study based on the viewpoint of the imaginary client. Hence, we came out with our own idea and create an imaginary client who is a manager of a home furniture and decoration company. Apart from that, we also faced issues in finding the correct theories and ways to implement 4IR technologies in our prototype. We spent a lot of time searching for articles about cloud computing and cloud architecture. Since this is the first time we in touch with a prototype, we spent time studying how to use design software to create a prototype. Throughout this project, we also discuss with each other to think of a solution whenever we encounter a problem. Besides, our lecturer, Dr Ngahmeh Niknejad also helped a lot in providing many ideas and clues for us to complete this project.

During the process of completing this project, I gained a lot of knowledge on how to create a prototype, especially the steps involved and technologies used to

develop a website or an application. In my opinion, I think this knowledge is very useful, and I will keep developing and enhancing my prototyping skills. Besides, I am looking forward to study more about the cloud computing web services provided by Amazon Web Services, which can be very useful for me to deal with issues related to cloud computing.

In my opinion, I need to improve my understanding of cloud computing, the 4IR technologies, and other knowledge related to cloud architecture to improve my potential in the industry. This knowledge will help to improve my ability to implement cloud architecture in designing a website or application. Besides, I also need to improve my soft skills such as communication skills, team-working skills, and so on to cooperate well with my team members and produce a high-quality product.

Yeo Chun Teck

In this project, we have explored more about the Fourth Industry Revolution (IR4.0) technologies that were focused on and discussed in the course. There are many different kinds of technologies like Augmented Reality(AR), Virtual Reality(VR), Artificial Intelligence(AI) and others. This project also produced us an opportunity to study cloud computing and the concepts or the mechanisms behind it. The knowledge which we had learned from the course and the industry talk had become the ideas for us to create prototype and cloud architecture for our project. Implementing 4th IR technology in the project had motivated us to complete it because it is very interesting to discover and explore the probabilities that could be achieved in the future. Besides that, we also learned the skills to create a low fidelity prototype design by using UI/UX design software like Adobe UX which was recommended by our lecturer, Dr Naghmehn Niknejad.

In the process of completing this project, we had faced some issues actually in the part of finding a potential client for providing us input and problem scenarios so that we could help him or her to solve the problem. This part was very difficult for us because we had no idea on finding what person as our potential customer due to having no wide network with companies in a different field. It caused the progress on our project to be delayed. However, Dr Ngahmeh Niknejad provided us with an alternative way that we could imagine a potential client and create our own case study. This alternative way had solved our difficulty, and we could start to discuss the project. We did a lot of research and discussion on the future trends of different industries and finally decided that our imaginary client is a manager of a home furniture and decoration company. After that, we started to do our project. Since all of us had no experience doing a project like this before, we had faced some obstacles in implementing our ideas in the project. To solve this problem, we spent a lot of time studying about AWS services and doing some research on other cloud computing architectures which were based on AWS services to get the resolutions. At the last, we are successful to complete the project before the deadline due to the cooperation and teamwork of our team.

After completing this project, I will put my view on a further future. The project had given me some opportunities in discovering and exploring the

probabilities we could see in the future. It also gives me a lot of inspiration and motivation toward future technology development. The existence of cloud computing had provided a new gate for the rising of some new technology. I believe that it will be a trend which is very useful to many fields. I will keep myself moving forward to learn and research about knowledge of different technologies, including cloud computing.

There are many improvements necessary for me to improve my potential in the industry. One is the improvement in productivity and efficiency of my work. I need to explore a way that could shorten the time of work but produce high quality of outcomes. It is very important for me to carry out different tasks in the same time so that it will not cause any delay to any progress. I also need to learn and master different hard skills so that I could have the ability to bring ideas into real life.

Lew Chin Hong

After completing this project, I have a better understanding of some fourth industrial revolution(4IR) technologies, such as augmented reality(AR), 5G, Artificial Intelligence, the Internet of Things(IoT) and virtual reality(VR). Among these technologies, we focused on augmented reality and 5G to develop our project. Thus, I have a chance to get to know about how does AR works and how powerful 5G is. Before doing this project, my only knowledge about AR is about the "Pokémon Go" game, and I never think about using this technology to develop something. After this, we also develop our project about cloud computing architecture. For me, this is the hardest part of this project, since it is totally an unfamiliar field for me. We have to develop it using Amazon Web Services(AWS) and this is also quite difficult for me. Luckily, the industry talk or lecture conducted before this project had taught us some basics about cloud computing, so it is still computable for me. Besides, we also have to develop a prototype in our project using the tools recommended by our lecturer. We chose to use Adobe XD to develop this prototype. I must say that this is the most interesting part of this project since it is new for me to develop a software or website, although it is just a prototype and also, I have learned about how to design the user interface(UI) or user experience(UX)by using tools.

It was not a smooth process for us to develop our project. We already faced some difficulties before starting the development. At first, we had to find our own client that having problems with their old system, and we needed to develop a new system for them and this is where the difficulty occurred. We could not find a real client for us to develop a system for them. Thus, our lecturer provided us with an alternative way to do this project, which is a virtual client. Hence, we decided to imagine a client and started our project. We chose to help a furniture company that wish to focus on their online business model and their old system could not support it. There are two parts that we had to develop in the new system, which are cloud computing architecture and prototype. These two parts required two different tools or services, which are AWS for cloud and Adobe XD for prototype. Both of these parts are complicated, so we spent a lot of time doing the research, and we had to repeat the correction process many times. Besides, our lecturer, Dr Naghmeh Niknejad also helped us a lot during this project since she gave many extra explanations about this

project, and she answered patiently every question we asked. However, it is still a fun process while developing this project.

After completing this project, I have gained knowledge of the 4IR technologies. All of these technologies are useful, and they are the trend for future industries. For example, AR technology would help us in a variety of fields, such as education, medical or entertainment. After that, I also learned about cloud computing architecture and Amazon Web Services. AWS is truly a powerful and useful service for us or any other developer to develop the cloud computing architecture. Before doing this project, I have completed the course about cloud computing in AWS academic. Thus, it helped me during the development of cloud computing architecture. Next is the prototype part. Before completing this project, I am only a website or software user and I never think about the working mechanism of a website or software. Thus, I am glad that I have a chance to develop a prototype using the prototyping tools since this is the first time I get to know how software or website works and these tools are useful for our future career. Hence, after completing this project, I will try to discover or explore more about the 4IR technologies and system development.

I believe that there are still a lot of improvements for me to improve my potential in the industry. Firstly, I have to master and have a fluent command of cloud computing architecture and system development. This would enhance my competitiveness and help me find an ideal career in the future. After the improvement of hard skills, I must also improve my soft skills. The main soft skills that I have to improve are time management skills. I am a person who suffers from procrastination, and this really troubled me a lot. Thus, I wish to change this bad habit and always complete tasks on time.

Citation

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