UTM

UNIVERSITI TEKNOLOGI MALAYSIA

KURSUS

SIJIL PENGAJARAN PENGAJIAN TINGGI

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MODULE	
ASSIGNMENT TYPE	**GROUP**
PREPARED FOR	
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Introduction:

In this new age of modernism world, we are required to be able to solve things in such creative and innovative ways. It is important to keep ourselves as a modern society in solving problems by redefining it. The youth are especially need to put any effort into creating ways to think realistically creative by not just rely on the materials in front of their eyes for example in completing their task. So, to overcome this issue, Design Thinking is one of the approaches that we can develop to produce an attractive and innovative outcome.

Design Thinking provided us with a way of thinking based on our undefined problems by identifying alternative strategies and solutions which might not meet our level of understanding. It helps us systematically extract, learn, teach, and apply these human-centered techniques in creative ways. Furthermore, Design Thinking allows those who have ideas to embrace their thinking sides of creativity in resolve problems or improve technology towards more advanced in lines of the present. Last but not least, we can try to prove and test our skills through the experiment by building a prototype where it is a part of the process too.

Problem Background:

2020 has been the most challenging year so far in this 20-century, as the whole world is struggling to deal with the COVID-19 pandemic. Malaysia unfortunately does not manage to become an exception to the countries which are affected by Covid-19. Just like the rest, Malaysia was forced to invoke several measures like Movement Control Order and social-distancing in response to the raging pandemic since March. The citizens are still trying to adapt themselves to the new lifestyle brought by MCO to this day and some of them have been going through hardship to obey the MCO. Therefore, we as a group of students from UTM had decided to give a helping hand to the community in terms of providing a solution to their problem with MCO.

Empathy:

We reached out to the community in a search of any possible difficulty that they were facing with the MCO. Since MCO began, everything ought to be conducted online to prevent as much physical contact as possible. While this measure seemed to favor the majority of the community, the welfare of the poor the old community would be much neglected due to their limited access to the Internet and digital device. Therefore, we prioritized them as the source for us to collect the problem.

The first responder who responded her problem to us was Anis Syafiah Binti Muhd Arif Tey who is a widow who had 2 children. Anis shared her problem regarding the MySejahtera application that it required an Internet connection to be utilized. As a janitor, a mobile data plan had never been a necessity to her till MCO occurred, not to mention Anis who belonged to the B40 category could barely afford an extra expenditure during this hard time. “I know being poor is not a proper excuse to not obey the MCO rule, but no doubt a data plan would significantly increase my family’s expenditure,” she said. Anis was also concerned about the hygiene of using a logbook. “Although the government came up with the alternative of using logbook to record our check-ins, I just don’t feel that secured to do physical contact with the logbook,” she said.

The second responder, Muhammad Harith Hakim, who is a student, quite agreed with the opinion of the first responder. He told us that a smartphone had never been such important to all of us recently. “Sometimes, if I accidentally leave my phone at home, I have to ride from the restaurant back to my house, just to pick up the phone so I could scan the QRcode with MySejahtera,” he said. Meanwhile, Harith was bothered with the safety of a logbook in terms of personal information privacy. “It’s really not a bright idea to write your real name and phone number on a piece of paper that everyone else could easily see,” he said.

Mohd Ruzaimi Bin Yaakob, the owner of Kuali Ais Restaurant who volunteered to become our third responder was worried about the authenticity of names and contact numbers recorded in the logbook. He managed to notice that few customers who came to his restaurant purposely wrote the false phone numbers on the logbook. He asked the customers for the reason why they did such a thing. Unsurprisingly, most of them shared the same issue with the second responder and were concerned for the safety of exposing their personal information on the logbook. “There’s no way I would know that the customers give the false information if I’m not familiar with them, and what about if the customers make mistakes when filling up the logbook?” he said.

Defining the problem:

Limitation access to the Internet turns MySejahtera application from a service that supposed to help the poor in fighting pandemic, to an extra burden upon the low-status community

Logbook that served as an alternative to help in contact tracing ironically, encouraged more physical contact between people and objects which could be easily contaminated such as pen and paper.

Personal information written in the logbook such as real name and phone number was constantly open to everyone, failing in securing one's personal information privacy.

Logbook tolerated one's dishonesty and error in providing his/her personal information, which brought down its accuracy and efficiency in the contact tracing approach.

In short, we needed to solve the problem by inventing a device that had better and more efficient storage, a contactless way for users to check-in, guarantee over the authenticity as well as privacy of personal information.

Ideate:

Pre-solution #1

Collaborate with telecommunication companies to have a distribution of free sim card that comes with a mobile data plan to the needy community.

Pre-solution #2

Set up a digital storage device that could scan a person's Identification Card and store his identity, visited location, time and body temperature on spot to achieve the contact-tracing approach.

Pre-solution #3

Provide a portable digital device where the user would have to carry it along and the device could act as a movement tracking device.

Pre-solution #4

Provide a contactless digital logbook which comes with a voice-to-text converting feature for visitors/customers to do their check-ins.

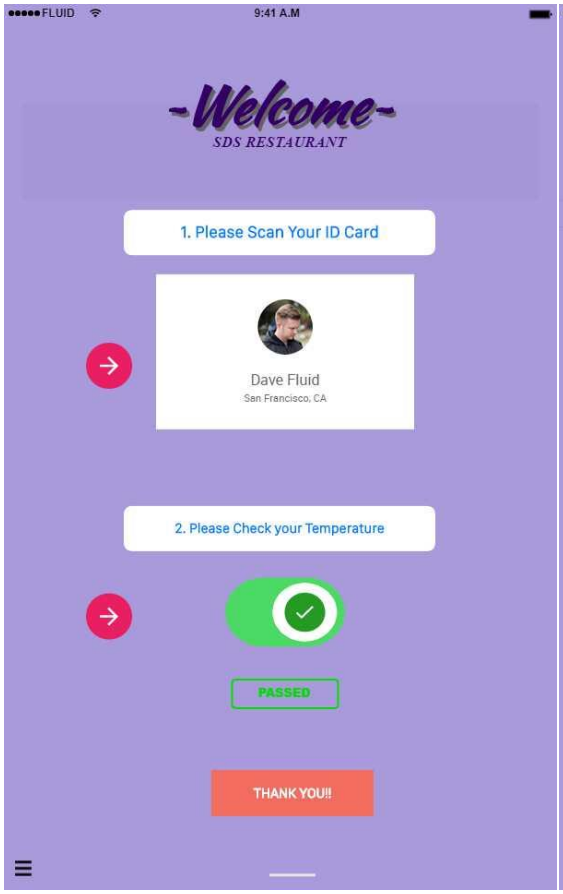
In this session, members of the group conducted a discussion to suggest their pre-solution. Then, the group had determined which pre-solution had better efficiency and potential in terms of solving difficulties regarding the logbook and MySejahtera app. Eventually, we decided to implement pre-solution #2 because it was relatively cheap compared to pre-solution #1 which required the government or companies to spend a decent amount of budget. Unlike pre-solution #3, pre-solution #2 did not bind itself to the users as a "restrain" and respect the users' personal space and privacy. While pre-solution #4 might have an issue with the accuracy of the voice-to-text converting feature, pre-solution #4 could operate almost without any error or mistake on the information entered. It also ensured the authenticity of the information.

Prototype:

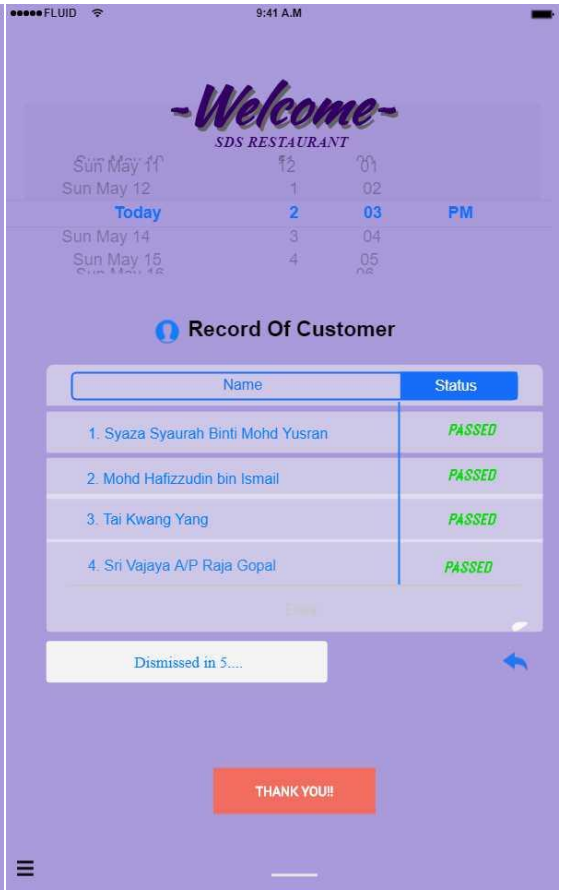
The team had conducted a meeting to discuss desired features that the prototype should have. Before the discussion started, team members gave a name to the prototype which is “SasCure-370i”. First, Ieskandar proposed that SaSCure-370i should be equipped with a 32GB SD Card as the main storage. He added that SD Card could only be plugged out by entering a password so the safety of users’ personal information was guaranteed. Then, Syaza came out with an idea that SaSCure-370i should also have an Identification Card (IC) scanner as its input. She supposed that an IC scanner could secure the authenticity of the personal information entered by users. While agreeing with Syaza’s idea, Naim suggested that we should consider the integration a thermometer into SaSCure-370i so the body temperature of users could be recorded on spot. After that, Lai suggested that SaSCure-370i should have a data synchronization feature where it would share data with other similar devices. In this way, individuals who had a history of going to COVID-19 hotspots or abnormal body temperature recently could always be detected no matter which SaSCure-370i they used for check-in. Lai added that this feature could operate only with the presence of an Internet connection and dedicated servers. Before the meeting ended, Hibban offered the final suggestion that SaSCure-370i needed to have a screen that could serve as an interface and display simultaneously.

Test:

First, the users would be prompted to scan or insert their MyKad into the SaSCure-370i. If they succeed, users would then be instructed to measure their body temperature using the thermometer on the left side. When a normal temperature was recorded, LED-light below the thermometer would turn from red to green and users would be notified with a message “PASSED” that appeared on the screen. Otherwise, SaSCure-370i would activate its alarm and displayed a message “FAILED” when a body temperature more than 37.5 was recorded. At the same time, profiles of all users which included their name, IC number, phone number, check-in location and home address would be stored for 3 weeks. The profiles would be stored locally in SaSCure-370i and sent to a dedicated server for back-up purpose. Servers and databases of SaSCure-370i would be set up in the local hospitals. In this way, personnel from the Ministry of Health could easily identify individuals with suspected COVID-19 based on those profiles.



The customer check-ins.



The owner record of customers they had.