****

**CZ2006 Software Engineering**

Group Name : TeamLost

**Name:**

Li Jin Quan U1722463A

Lee Jian Hao U1721619C

Chen Xing Yu U1721205J

Kok Jia Hui U1721022E

Tee Wan Yi U1721844C

**Lab Group:** SSP5

Table of Content

[**User Requirements**](#_ju6p7utcu91m) **3**

[**Data Dictionary**](#_tyjcwt) **5**

[**Use Case Diagram**](#_17dp8vu) **6**

[**Use Case Description**](#_26in1rg) **7**

[UC001](#_lnxbz9) 7

[UC002](#_1ksv4uv) 8

[UC003](#_44sinio) 9

[UC004](#_2jxsxqh) 10

[UC005](#_z337ya) 11

[UC006](#_3j2qqm3) 13

[UC007](#_1y810tw) 15

[UC008](#_1ci93xb) 16

[UC009](#_2bn6wsx) 17

[UC010](#_3as4poj) 18

[UC011](#_2p2csry) 19

[UC012](#_23ckvvd) 20

[UC013](#_3fwokq0) 21

[UC014](#_2u6wntf) 22

[UC015](#_ik7napsua8yc) 23

[UC016](#_pa3xzfld2o15) 24

[**UI Mock Up**](#_yxyvrzhunnf5) **25**

# 

# User Requirements

**Functional Requirements**

1. The user must be able to register an account to be able to use certain functions.
   1. The system must be able to validate user input to ensure that they entered the correct format.
2. The user shall be able to make selection of various healthcare premises given by the system.
3. The user shall enter the desired location.
4. The user shall allow detection of their current location.
   1. The system must be able to detect user’s current location.
5. The system must be able to locate healthcare premises based on the entered location.
   1. The user shall be able to select the desired hospital.
      1. The user shall check on the routing checkbox.
      2. The system must be able to display the recommended route based on the user’s selection.
   2. The user shall be able to select the desired clinic.
      1. The user shall check on the routing checkbox.
      2. The system must be able to display the recommended route based on the user’s selection.
   3. The user shall be able to select the desired pharmacy.
      1. The user shall check on the routing checkbox.
      2. The system must be able to display the recommended route based on the user’s selection.
   4. The user shall be able to select the desired dental.
      1. The user shall check on the routing checkbox.
      2. The system must be able to display the recommended route based on the user’s selection.
   5. If the system fails to find any health premises during the search, the system must display a message to inform user about the search failure.
6. The user must be able to view address of selected healthcare premises.
7. The user must enter user details to book an appointment.
   1. The user must login to the system before they can book appointment.
   2. The system must send appointment details to user via SMS upon successful booking.
8. The user shall be able to make changes to their medical appointment.
   1. The user shall edit their medical appointment.
   2. The user shall cancel their medical appointment.
9. The user must be able to view frequently asked question (FAQ).
10. The user must be able to search frequently asked question (FAQ).
11. The user must enter feedback details before submitting feedback at the feedback page.
12. The administrator shall be able to view the feedbacks submitted.
13. The user must be able to view health-related tips.
14. The user must be able to view health-related news.
    1. The system must be able to retrieve the health-related news.
15. The user must be able to logout.

**Non-Functional Requirements**

|  |  |
| --- | --- |
| Usability | * Help messages must be displayed in local language. |
| Reliability | * In case of system failure, our system will make use of our backup server while the main server is being fixed. |
| Performance | * When an appointment is booked, the system must be able to update the database within 10 seconds. * The system must be able to retrieve information from Google map within 5 seconds. |
| Supportability | * The system database will be updated according to the latest version of MySQL, which is used in our system. |
| Security | * Personal and health information will be strictly kept confidential and it will not be disclosed. |
| Safety | * One of the possible loss from using of product is loss of personal information. However, our database ensure that data are kept secured since we used google cloud to store information from our database. Google cloud provide a lot security, which include, network security, application security and data security. |

# 

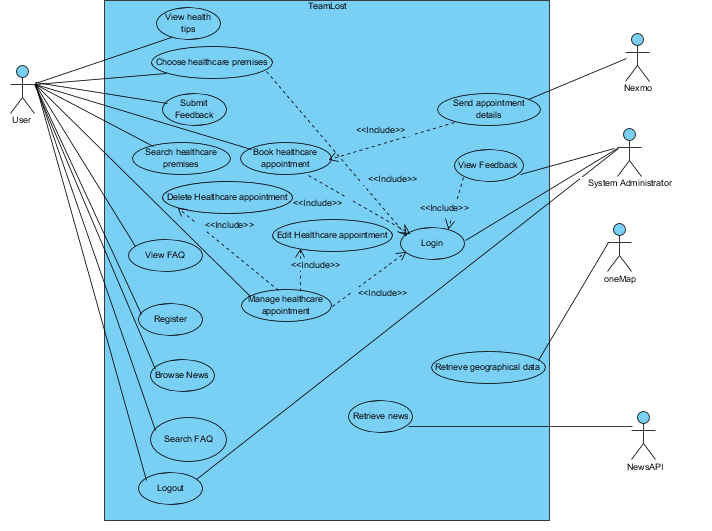
# 

# 

# Data Dictionary

|  |  |
| --- | --- |
| Healthcare Premises | Hospital, Polyclinic, Pharmacy, CHAS Clinic, Dental Clinic |
| CHAS | Community Health Assist Scheme |
| Local Language | English, Chinese, Malay and Tamil. |
| User Details  Personal Details | Full Name, NRIC, Password, Mobile Number, Email |
| Appointment Details  Booking Details | Name, NRIC, Date, Time, Location of health premise, name of health premise, Condition |
| Feedback Details | Title, Message |
| Login Details | Login ID, Password |

# Use Case Diagram



# Use Case Description

|  |  |  |  |
| --- | --- | --- | --- |
| Use Case ID: | UC001 | | |
| Use Case Name: | View Health Tips | | |
| Created By: | Team Lost | Last Updated By: | Team Lost |
| Date Created: | 4/9/2018 | Date Last Updated: | 11/9/2018 |

|  |  |
| --- | --- |
| Actor: | User, Administrator |
| Description: | View health tips. |
| Preconditions: | - |
| Postconditions: | 1. Display of health tips. |
| Priority: | Low |
| Frequency of Use: | Medium |
| Flow of Events: | 1. The user shall view health tips at home page. |
| Alternative Flows: | - |
| Exceptions: | - |
| Includes: | - |
| Special Requirements: | - |
| Assumptions: | - |
| Notes and Issues: | - |

# Use Case Description

|  |  |  |  |
| --- | --- | --- | --- |
| Use Case ID: | UC002 | | |
| Use Case Name: | Browse News | | |
| Created By: | Team Lost | Last Updated By: | Team Lost |
| Date Created: | 4/9/2018 | Date Last Updated: | 11/9/2018 |

|  |  |
| --- | --- |
| Actor: | User, Administrator |
| Description: | Browsing of health related news. |
| Preconditions: | - |
| Postconditions: | 1. Display of latest news. |
| Priority: | Low |
| Frequency of Use: | Low |
| Flow of Events: | 1. The user clicks on the title of news in news feed. 2. The system shall be able to navigate the user to the original sources for more details. |
| Alternative Flows: | - |
| Exceptions: | EX1: Network not available   1. The system is not able to retrieve news from the source. |
| Includes: | - |
| Special Requirements: | - |
| Assumptions: | - |
| Notes and Issues: | - |

Use Case Description

|  |  |  |  |
| --- | --- | --- | --- |
| Use Case ID: | UC003 | | |
| Use Case Name: | Choose healthcare premises | | |
| Created By: | Team Lost | Last Updated By: | Team Lost |
| Date Created: | 4/9/2018 | Date Last Updated: | 31/10/2018 |

|  |  |
| --- | --- |
| Actor: | User |
| Description: | Users select desired healthcare premises. |
| Preconditions: | Users must be logged in. |
| Postconditions: | The user will be directed to the page where it allows user to select healthcare premises that he/she wish to make an appointment at. |
| Priority: | High |
| Frequency of Use: | High |
| Flow of Events: | 1. The system must be provided with location through    1. auto detection of user’s current location, or    2. manually entered by the users. 2. The system will then display all the available selected healthcare premises within 2km on the map based on the detected/entered location. 3. The user checks on the routing checkbox. 4. The user will then select the destination from the dropdownlist. 5. The system will then display the route and the entered location will be marked with “A”, and the destination will be marked as“B”. |
| Alternative Flows: | - |
| Exceptions: | EX1 Network not available   1. The system will not be able to direct user to the healthcare premise page.   EX2, No nearby healthcare premises found   1. The user will not be able to choose healthcare premises as there are no healthcare premises found. |
| Includes: | Login |
| Special Requirements: | - |
| Assumptions: | Location detected/ entered must be in Singapore. |
| Notes and Issues: | - |

Use Case Description

|  |  |  |  |
| --- | --- | --- | --- |
| Use Case ID: | UC004 | | |
| Use Case Name: | Search healthcare premises | | |
| Created By: | Team Lost | Last Updated By: | TeamLost |
| Date Created: | 4/9/2018 | Date Last Updated: | 31/10/2018 |

|  |  |
| --- | --- |
| Actor: | User, Administrator |
| Description: | Searching of healthcare premise according to detected current location or entered location. |
| Preconditions: | 1. The user must select one of the healthcare services from the dropdown list (healthcare services). 2. The user enables detection of current location. |
| Postconditions: | 1. The system will display the map of the chosen healthcare premises that are within 2 kilometres of the entered location or based on user current location. |
| Priority: | High |
| Frequency of Use: | High |
| Flow of Events: | 1. The system detects user’s current location . 2. The system will then display all the selected healthcare premises within 2 kilometres on the map based on the location |
| Alternative Flows: | AF-S1, User disable detection of current location   1. The user enters location that they want to search manually. 2. Continue step #2.   AF-S1.1 , Invalid/wrong location entered   1. The system will display error message and prompt user to enter again. 2. Continue from step #S1. (under AF-S1) |
| Exceptions: | EX1, Network not available   1. The user will not be able to search healthcare premises. |
| Includes: | - |
| Special Requirements: | - |
| Assumptions: | Location detected/entered must be in Singapore. |
| Notes and Issues: | - |

Use Case Description

|  |  |  |  |
| --- | --- | --- | --- |
| Use Case ID: | UC005 | | |
| Use Case Name: | Book healthcare appointment | | |
| Created By: | Team Lost | Last Updated By: | Team Lost |
| Date Created: | 4/9/2018 | Date Last Updated: | 24/9/2018 |

|  |  |
| --- | --- |
| Actor: | User |
| Description: | Allows user to book healthcare appointment. |
| Preconditions: | 1. The user must be logged in. 2. The user must have selected the location where they wish to book an appointment at. |
| Postconditions: | 1. The system will display a message indicating successful booking. 2. The system will then automatically send appointment detail to the user via SMS. |
| Priority: | High |
| Frequency of Use: | High |
| Flow of Events: | 1. The system will direct user to the page to fill up all their details after user has selected specific healthcare premises. 2. The system retrieve the address of the selected healthcare premise. 3. The user will have to enter appointment details and proceed by clicking “Next” button. 4. The system will do validation to check whether user has entered all the required fields in correct format. 5. The system will display all the entered information by user for confirmation. 6. The system will display successful message upon successful booking of selected slot. 7. The system sends a message that includes all the booking details to user via SMS. |
| Alternative Flows: | AF – S3, Invalid format of appointment details   1. The system will disable the “Next” button. 2. User checks the entered field and re-enter the appointment details again. 3. Return to step #4. |
| Exceptions: | EX1, Network not available   1. The system will not be able to direct user to the healthcare premise page. |
| Includes: | Login |
| Special Requirements: | Users are not allowed to book an appointment at pharmacy. |
| Assumptions: | - |
| Notes and Issues: | - |

Use Case Description

|  |  |  |  |
| --- | --- | --- | --- |
| Use Case ID: | UC006 | | |
| Use Case Name: | Manage healthcare appointment | | |
| Created By: | Team Lost | Last Updated By: | Team Lost |
| Date Created: | 5/9/2018 | Date Last Updated: | 25/9/2018 |

|  |  |
| --- | --- |
| Actor: | User |
| Description: | Allows user to manage healthcare appointment in the system which include editing and deleting healthcare appointment. |
| Preconditions: | 1. The user must be logged in. 2. The user must have an existing appointment. 3. The status of appointment must be “booked”. |
| Postconditions: | 1. The system will display a message indicating successful changes. 2. The system will then automatically send the changes made (delete/update) to the user via SMS. |
| Priority: | High |
| Frequency of Use: | High |
| Flow of Events: | 1. The user selects “Manage appointment” at the Appointment dropdown list. 2. The system will display a table of user’s existing appointment with a “Edit” or “Delete” button. 3. Once the user select an option, either one of the sub flows will be executed.  * If the user selected “**Edit**”, the **Edit Healthcare Appointment** subflow is executed. * If the user selected “**Delete**”, the **Delete Healthcare Appointment** subflow is executed.   **Edit Healthcare Appointment**   1. The system retrieves and displays the current appointment information of the selected appointment that the user wishes to modify. The appointment information includes:  * Date * Time * Department , condition and preferred doctor(for making appointment at polyclinic) * Department , condition ,preferred doctor and referral (for making appointment at hospital) * Services and preferred dentist (for making appointment at dentist)  1. The system requests that the user enter the new appointment date and time. 2. Once the user provides the requested information and selects “Update” button. 3. The system will display successful message upon successful update of the changes and send a message that includes all the updated booking details to the user via SMS.   **Delete Healthcare Appointment**   1. The system prompt user to confirm the cancellation of the selected appointment. 2. Upon clicking on “Confirm”, the system will display successful message once the appointment has been cancelled successfully. 3. System sends a message to notify user on the successful cancellation of appointment. |
| Alternative Flows: |  |
| Exceptions: | EX1: No existing appointment is found   1. The system displays error message indicating no existing appointment.   EX2: Network not available   1. The user will not be able edit/delete their appointment. |
| Includes: | Delete healthcare appointment  Edit healthcare appointment  Login |
| Special Requirements: | - |
| Assumptions: | User has already registered an account. |
| Notes and Issues: | - |

Use Case Description

|  |  |  |  |
| --- | --- | --- | --- |
| Use Case ID: | UC007 | | |
| Use Case Name: | View FAQ | | |
| Created By: | Team Lost | Last Updated By: | TeamLost |
| Date Created: | 4/9/2018 | Date Last Updated: | 9/11/2018 |

|  |  |
| --- | --- |
| Actor: | User, Administrator |
| Description: | Allowing users/administrator to view Frequently Asked Questions (FAQ). |
| Preconditions: | - |
| Postconditions: | - |
| Priority: | Low |
| Frequency of Use: | Low |
| Flow of Events: | 1. The user selects “Help” on the navigation bar. 2. System will navigate user to another page where they can view and search for frequently asked questions. 3. User clicks on the question that he/she wants to view. 4. System displays answer for the selected question. |
| Alternative Flows: | - |
| Exceptions: | EX1: Network not available   1. The user will not be able to view frequently asked questions. |
| Includes: | - |
| Special Requirements: | - |
| Assumptions: | - |
| Notes and Issues: | - |

# Use Case Description

|  |  |  |  |
| --- | --- | --- | --- |
| Use Case ID: | UC008 | | |
| Use Case Name: | Search FAQ | | |
| Created By: | Team Lost | Last Updated By: | Team Lost |
| Date Created: | 4/9/2018 | Date Last Updated: | 11/9/2018 |

|  |  |
| --- | --- |
| Actor: | User, Administrator |
| Description: | Allowing user to search for frequently asked questions. |
| Preconditions: | - |
| Postconditions: | 1. Display of frequently asked questions. |
| Priority: | Low |
| Frequency of Use: | Low |
| Flow of Events: | 1. The user selects “Help” at the navigation bar. 2. The system will direct user to the page where the user can search and view the frequently asked questions. 3. The user enter question or keyword of the question that he/she wants to view in the search field. 4. The system displays the frequently asked question with relevant keyword. |
| Alternative Flows: | AF-S3, Invalid keyword entered   1. The system displays error message. 2. Return to step #3. |
| Exceptions: | EX1: Network not available   1. The user will not be able to search for frequently asked questions. |
| Includes: | - |
| Special Requirements: | - |
| Assumptions: | - |
| Notes and Issues: | - |

Use Case Description

|  |  |  |  |
| --- | --- | --- | --- |
| Use Case ID: | UC009 | | |
| Use Case Name: | Submit Feedback | | |
| Created By: | Team Lost | Last Updated By: | Team Lost |
| Date Created: | 4/9/2018 | Date Last Updated: | 11/9/2018 |

|  |  |
| --- | --- |
| Actor: | Users |
| Description: | Allowing users to submit feedback. |
| Preconditions: | 1. User must have entered the feedback details. |
| Postconditions: | 1. The system will display a successful message upon submitting the feedback. |
| Priority: | Low |
| Frequency of Use: | Low |
| Flow of Events: | 1. User selects “Help” on the navigation bar. 2. System will navigate user to a page where they can submit their feedbacks. 3. User must enter feedback details. 4. Upon clicking the “Submit Feedbacks” button, the system will display a successful message. |
| Alternative Flows: | AF-S3: Feedback details is not filled   1. The system displays error message. 2. The system will then prompt user to enter field. 3. Back to step #3. |
| Exceptions: | EX1: Network not available   1. The user will not be able to submit their feedback. |
| Includes: | - |
| Special Requirements: | - |
| Assumptions: | - |
| Notes and Issues: | - |

# Use Case Description

|  |  |  |  |
| --- | --- | --- | --- |
| Use Case ID: | UC010 | | |
| Use Case Name: | Retrieve geographical data | | |
| Created By: | Team Lost | Last Updated By: | Team Lost |
| Date Created: | 18/9/2018 | Date Last Updated: | 31/10/2018 |

|  |  |
| --- | --- |
| Actor: | User, Administrator, oneMap |
| Description: | oneMap provide geographical data upon triggered by user. |
| Preconditions: | - |
| Postconditions: | - |
| Priority: | - |
| Frequency of Use: | Medium |
| Flow of Events: | 1. oneMap will display data accordingly to the detected/entered location. |
| Alternative Flows: | - |
| Exceptions: | **EX1: Detection of location disabled**   1. User’s current location fail detect. |
| Includes: | - |
| Special Requirements: | - |
| Assumptions: | - |
| Notes and Issues: | - |

# 

# Use Case Description

|  |  |  |  |
| --- | --- | --- | --- |
| Use Case ID: | UC011 | | |
| Use Case Name: | Login | | |
| Created By: | Team Lost | Last Updated By: | Team Lost |
| Date Created: | 18/9/2018 | Date Last Updated: | 31/10/2018 |

|  |  |
| --- | --- |
| Actor: | User, Administrator |
| Description: | The user and administrator can access to user/administrator page after logging in. |
| Preconditions: | 1. Administrator/User must have entered login details. |
| Postconditions: | 1. System will display Administrator/User page respectively. |
| Priority: | High |
| Frequency of Use: | High |
| Flow of Events: | 1. Administrator/User will click on the “Login” button in the navigation. 2. The system will direct user to the Login page. 3. Administrator/User will have to enter their login details. 4. The system will validate the entered login details. 5. The system will display the pages that are visible to administrator or user respectively. |
| Alternative Flows: | AF- S4, Invalid login details   1. The system will display error message “Wrong Login ID or password” 2. Continue at step #3. |
| Exceptions: | EX1 Network not available   1. The Admin/User will not be able to login to the system. |
| Includes: | - |
| Special Requirements: | - |
| Assumptions: | - |
| Notes and Issues: | - |

# 

# Use Case Description

|  |  |  |  |
| --- | --- | --- | --- |
| Use Case ID: | UC012 | | |
| Use Case Name: | View Feedback | | |
| Created By: | Team Lost | Last Updated By: | Team Lost |
| Date Created: | 18/9/2018 | Date Last Updated: | 31/10/2018 |

|  |  |
| --- | --- |
| Actor: | Administrator |
| Description: | Administrator will be able to view feedback submitted by users. |
| Preconditions: | Administrator must be logged in. |
| Postconditions: | Administrator will be able to view all feedback submitted. |
| Priority: | - |
| Frequency of Use: | Medium |
| Flow of Events: | 1. The administrator clicks on the ‘’user feedback’’ button. 2. The system will display all the feedbacks submitted by user. |
| Alternative Flows: | AF - S2, If there is no feedback submitted by user   1. The system will display an message “There is no feedback submitted by user currently”. |
| Exceptions: | EX1 Network not available   1. The system will not be able to retrieve feedbacks submitted by user. |
| Includes: | Login |
| Special Requirements: | - |
| Assumptions: | - |
| Notes and Issues: | - |

# 

# 

# Use Case Description

|  |  |  |  |
| --- | --- | --- | --- |
| Use Case ID: | UC013 | | |
| Use Case Name: | Send appointment details | | |
| Created By: | Team Lost | Last Updated By: | Team Lost |
| Date Created: | 18/9/2018 | Date Last Updated: | 31/10/2018 |

|  |  |
| --- | --- |
| Actor: | User, Nexmo |
| Description: | SMS will be sent to user upon successful booking/updating/deleting of appointment. |
| Preconditions: | User must book or make changes to the existing valid appointment |
| Postconditions: | Appointment details will be sent to user via SMS. |
| Priority: | High |
| Frequency of Use: | High |
| Flow of Events: | 1. System will use nexmo service to send appointment details to the user. |
| Alternative Flows: | - |
| Exceptions: | - |
| Includes: | Book healthcare appointment |
| Special Requirements: | - |
| Assumptions: | - |
| Notes and Issues: | - |

# Use Case Description

|  |  |  |  |
| --- | --- | --- | --- |
| Use Case ID: | UC014 | | |
| Use Case Name: | Retrieve news | | |
| Created By: | Team Lost | Last Updated By: | Team Lost |
| Date Created: | 18/9/2018 | Date Last Updated: | 31/10/2018 |

|  |  |
| --- | --- |
| Actor: | NewsAPI |
| Description: | Display of healthcare news. |
| Preconditions: | - |
| Postconditions: | - |
| Priority: | Low |
| Frequency of Use: | Medium |
| Flow of Events: | * + - 1. System will retrieve all the latest news.       2. User can click on the title of the news.       3. System will retrieve the url of that news.       4. System will direct user to the url. |
| Alternative Flows: | - |
| Exceptions: | EX1: Network not available   1. The system will not be able to retrieve news from newsAPI. |
| Includes: | - |
| Special Requirements: | - |
| Assumptions: | - |
| Notes and Issues: | - |

# Use Case Description

|  |  |  |  |
| --- | --- | --- | --- |
| Use Case ID: | UC015 | | |
| Use Case Name: | Register | | |
| Created By: | Team Lost | Last Updated By: | Team Lost |
| Date Created: | 4/9/2018 | Date Last Updated: | 11/9/2018 |

|  |  |
| --- | --- |
| Actor: | User |
| Description: | To create an account in order to book appointments. |
| Preconditions: | - |
| Postconditions: | An account will be created. |
| Priority: | - |
| Frequency of Use: | Medium |
| Flow of Events: | 1. The user must click on the “Register” button. 2. The system must bring user to the page to fill up all their personal details. 3. The user must fill up all the required fields. 4. The user must click on the “Register” button. 5. The system must validate all the fields entered by user. 6. The system will direct user to the login page. |
| Alternative Flows: | AF- S5, empty NRIC/Name/Password/Email field   1. The system will display error messages and prompt user to enter these required fields. 2. Continue at step #3.   AF-S5, wrong format of NRIC/Name/Password/Email entered   1. The system will display error message and prompt user to re-enter this field accordingly to the requirement. 2. Continue at step #3. |
| Exceptions: | EX1: Network not available   1. The system will not be able to process the registration.   EX2: The user has already created an account before with the same NRIC provided   1. The system will display an error message 2. The user will not be able to use the Appointment functions. |
| Includes: | - |
| Special Requirements: | - |
| Assumptions: | - |
| Notes and Issues: | - |

# 

# Use Case Description

|  |  |  |  |
| --- | --- | --- | --- |
| Use Case ID: | UC016 | | |
| Use Case Name: | Logout | | |
| Created By: | Team Lost | Last Updated By: | Team Lost |
| Date Created: | 4/9/2018 | Date Last Updated: | 09/11/2018 |

|  |  |
| --- | --- |
| Actor: | User, Administrator |
| Description: | To log out of system. |
| Preconditions: | The User/Administrator must have logged in to the system. |
| Postconditions: | The User/Administrator will be logged out of the system. |
| Priority: | Medium |
| Frequency of Use: | Medium |
| Flow of Events: | 1. The user click on the “Logout” button. 2. The system direct user back to the login page. |
| Alternative Flows: | - |
| Exceptions: | - |
| Includes: | - |
| Special Requirements: | - |
| Assumptions: | - |
| Notes and Issues: | - |

# 

# UI Mock Up

Please refer to : **Team\_Losts\_UI Mock\_Up.pptx**