[1]

HoPo

MIS 6308-SAPM

FALL 2018 Group 3

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YOUTUBE PRESENTATION LINK

https://www.youtube.com/watch?v=2n78CBoh_u8

EXECUTIVE SUMMARY

Commute via road is one of the most preferred forms of travel in the United States. Roads, national highways, bridges are used by children riding to the schools, employees going to their offices, supplies being transported from the factories to the retail vendors or in general, for going places, quite literally. It thus becomes a necessity that the roads are well maintained, and the infrastructure is flawless. To this end, potholes are undesired entities that cause billions of dollars in vehicular damage and significant proportion of highway deaths. In fact, approximately 33,000 traffic fatalities each year, one-third involve poor road conditions [2]. If only there was a way to nip the problem in the bud by ensuring that the road conditions are promptly reported, and their maintenance is effectively tracked.

After brainstorming a plethora of ways to achieve this objective, we decided to use one of the best tools in human arsenal i.e. information systems. We propose to create a mobile application(app) christened as '**HoPo**' (**Ho**t **Po**t wherein 'Hot' indicates the 'most recent / latest' and **Po**t is an abbreviation for 'potholes'. So, the system that maps the latest potholes on the roads across the country) that will allow the car drivers (or any vehicular drivers for that matter) to report the presence of a pothole on the go, if the automatic sensor doesn't capture it already. The app will then provide a consolidated list of potholes in an area, by using the crowd sourced data, to the concerned government authority and track if there has been a corrective action from

them. Additionally, if the number of potholes along the route are above a certain threshold value, the app will suggest an alternative route with less potholes to the user. Registered users can also obtain custom made reports about the data at a reasonable cost.

The app will facilitate alerting the authorities of potholes, will encourage active participation from the community at large, keep a check on the efficiency of the government in fixing them, potentially minimize the number of road accidents and resultant deaths and last but not the least, reduce the billions of dollars spent in road maintenance each year.

PROBLEM STATEMENT

BUSINESS NEED:

- Constantly changing extreme climatic conditions such as excessive heat, wear and tear, freezing temperatures, etc. affect the existing roads (national highways, interstates, bridges, etc.) and result into creation of potholes.

- These potholes are not being brought to the attention of the concerned authority in a prompt manner, ultimately leading to serious road accidents and vehicular damage.

- Resultantly, corrective measures are either not taken at all or delayed.

- On the other hand, there is no motivational factor for people to proactively report the potholes for lack of such a technology.

OBJECTIVES:

1. **Reporting the potholes**:

   - Automatic sensors present in car can now report location of the potholes (latitude and longitude, using the HoPo app.

   - Registered users can now promptly report the potholes, using the HoPo app.

2. **Monitoring the repairs**:

   - Each reported pothole will have a priority-based weightage assigned to it, depending upon the number of times it is reported by the users.

   - HoPo system will send a consolidated area wise report of potholes to the concerned authority every 15 days.

- Monitoring whether the list of potholes sent to the authorities are repaired.

3. **Rewarding System**:

   Top 3 registered members in each state are rewarded each month based on the unique number of potholes reported by them.

4. **Pothole Count Alert:**

   If the number of potholes on the driver's route exceeds a threshold value, the HoPo app alerts the driver to consider an alternative route, with minimum/no potholes, to their destination. The app also provides the alternative route to the driver (all users).

5. **Report Generation**:

   1. HoPo app can be used to generate custom reports based on the fields selected by the user, at a reasonable charge.

   2. Based on the number of potholes reported and subsequently repaired, each state in the United States will be ranked every month. This report will be available for all users as a complimentary feature. The ranking will be a measure of the quality of repair and response time of the maintenance activities.

SPONSOR:

   This project is self-sponsored or sponsored by any interested entity.

EXPECTED VALUE:

1. Pothole free roads.

2. Reduction in car maintenance costs.

3. Reduction in roads operational costs.

4. Reduction in commute time.

SCOPE:

- The estimated cost of the project is USD $100,000.

- The project will require a duration of about 6 months to complete.

- The project includes facilitating manual and automated reporting of potholes using the HoPo mobile application.

- The system will consolidate all the potholes reported in an area every 15 day and this report will be submitted to the local authority. The report will include prioritized weightage of each pothole indicative of the urgency for it to be repaired.

- The system will verify whether the pothole specified on the report, sent to the local authorities in the previous month, is reported again by the user. If yes, it's priority will be increased automatically.

- The system will rank the local authorities in each state based on the least response time in fixing the potholes and minimum recurrence of potholes in their area. This ranking will be available to all users.

- The top 3 registered users in each state, that report maximum number of unique potholes in a month will be rewarded with cash prize.

- The registered users can generate custom reports based on their requirement for a minimal fee.

- If the number of potholes on the driver's route exceeds a threshold value, the HoPo app alerts the driver to consider an alternative route to their destination with minimum/no potholes.

CONSTRAINTS:

1. User acceptance of the mobile application.

2. Technological feasibility of automatic sensors in the car.

3. Government acceptance of the system.

**ASSUMPTIONS ABOUT THE PRE-INSTALLED SENSORS IN VEHICLES:**

- Battery powered sensors (IoT device), for automatic detection of potholes, are prerequisite to the system implementation & should be preinstalled in all vehicles.

- Car drivers/HoPo users can connect to these sensors via Wi-Fi or Bluetooth technology.

- These sensors should automatically capture the time, date and location (using GPS technology) of the pothole.

- They should also determine and report the size of the pothole (SMALL / MEDIUM / LARGE).
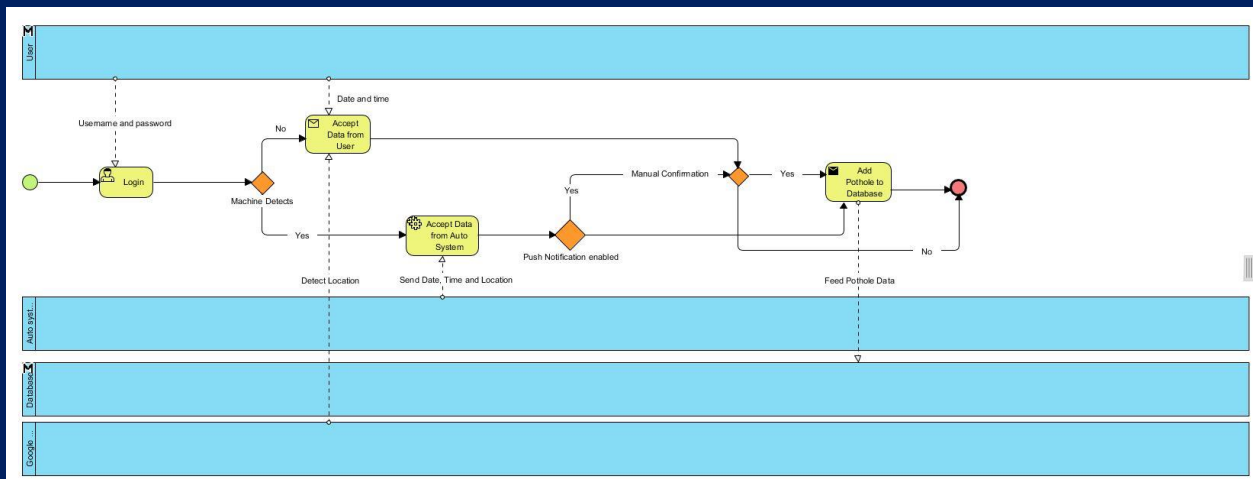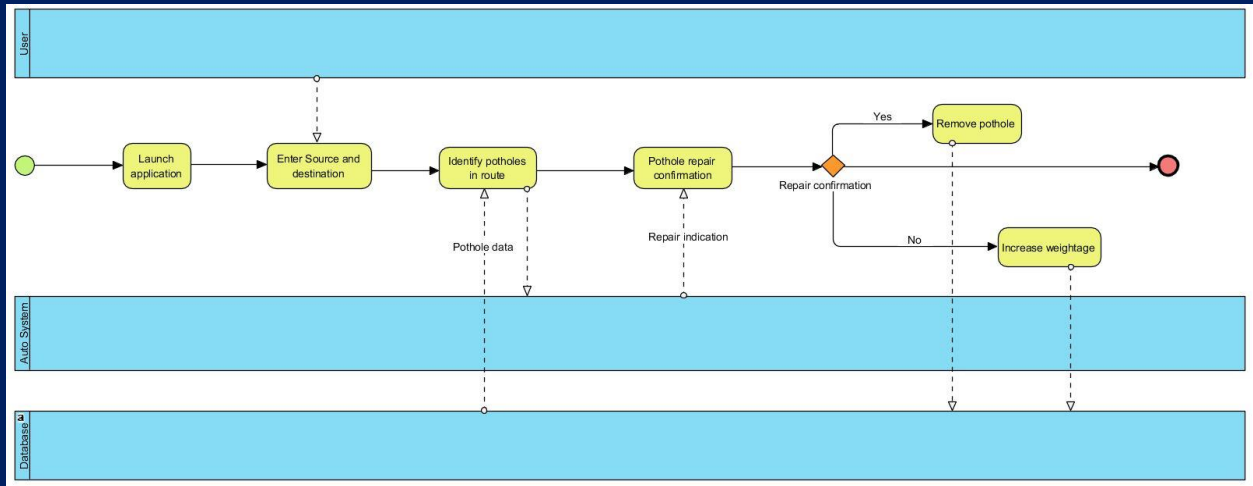
CONTEXT DIAGRAM
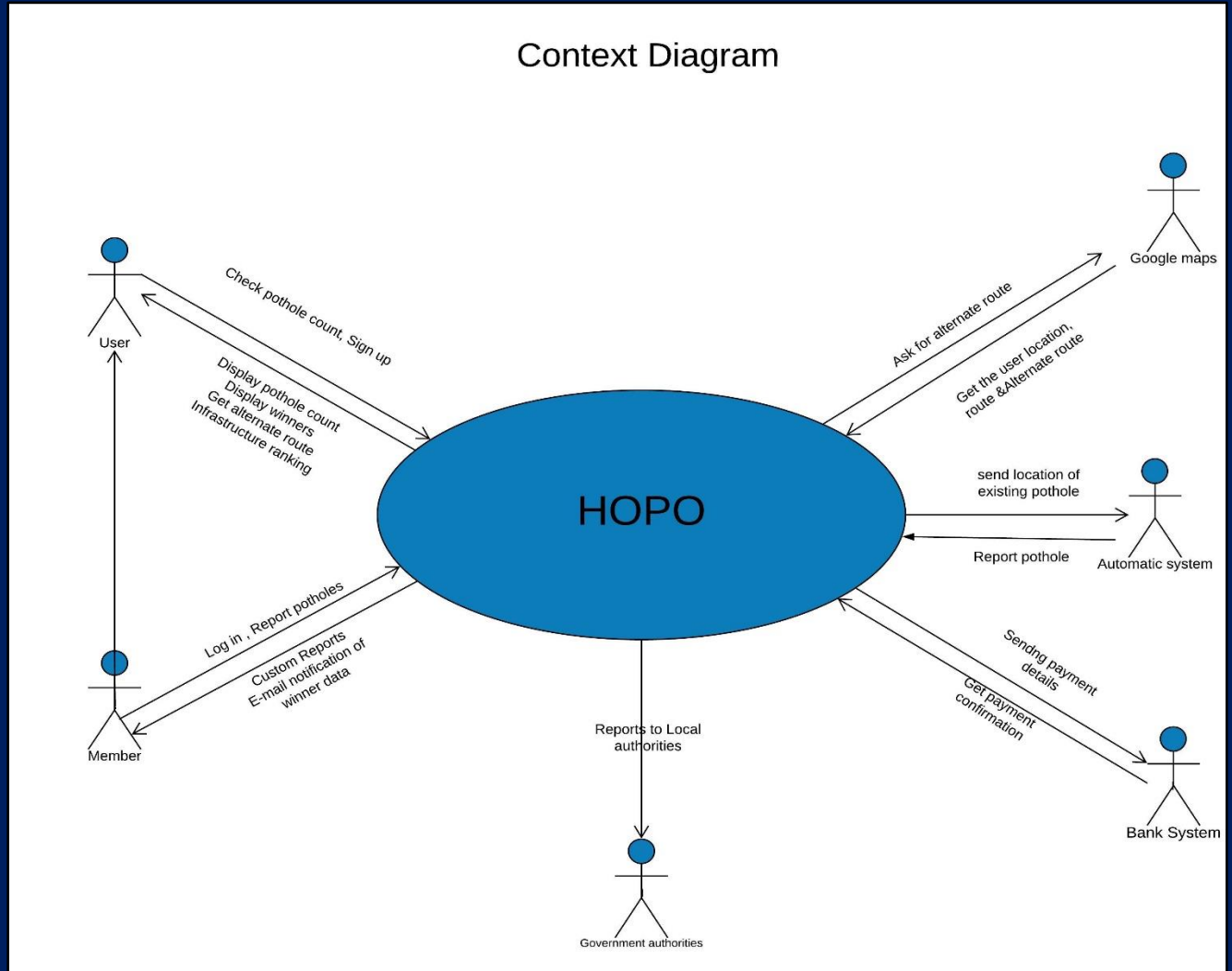
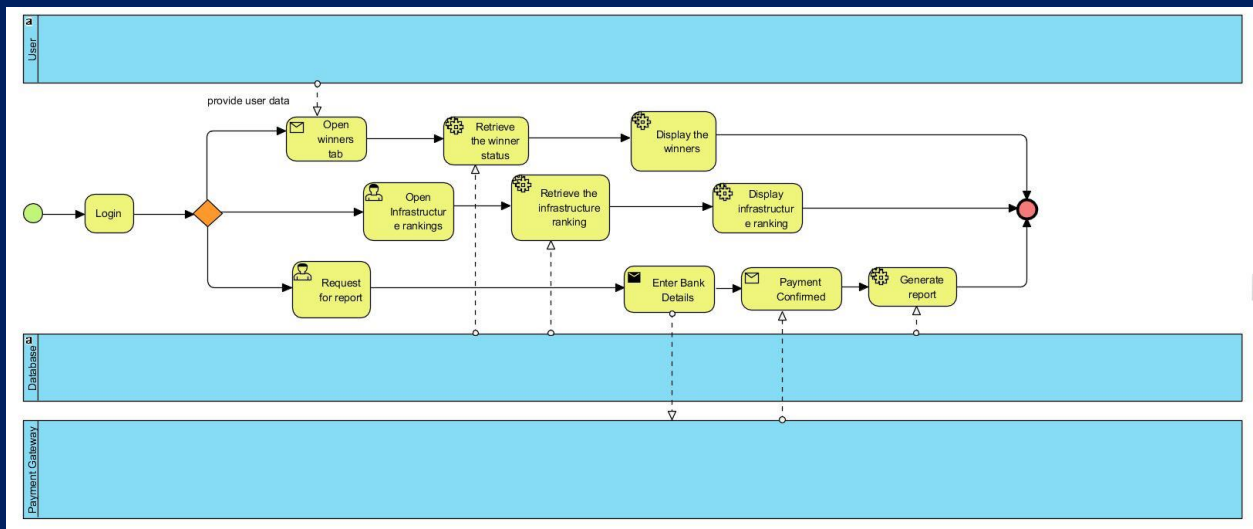# CHOREOGRAPHY DIAGRAM
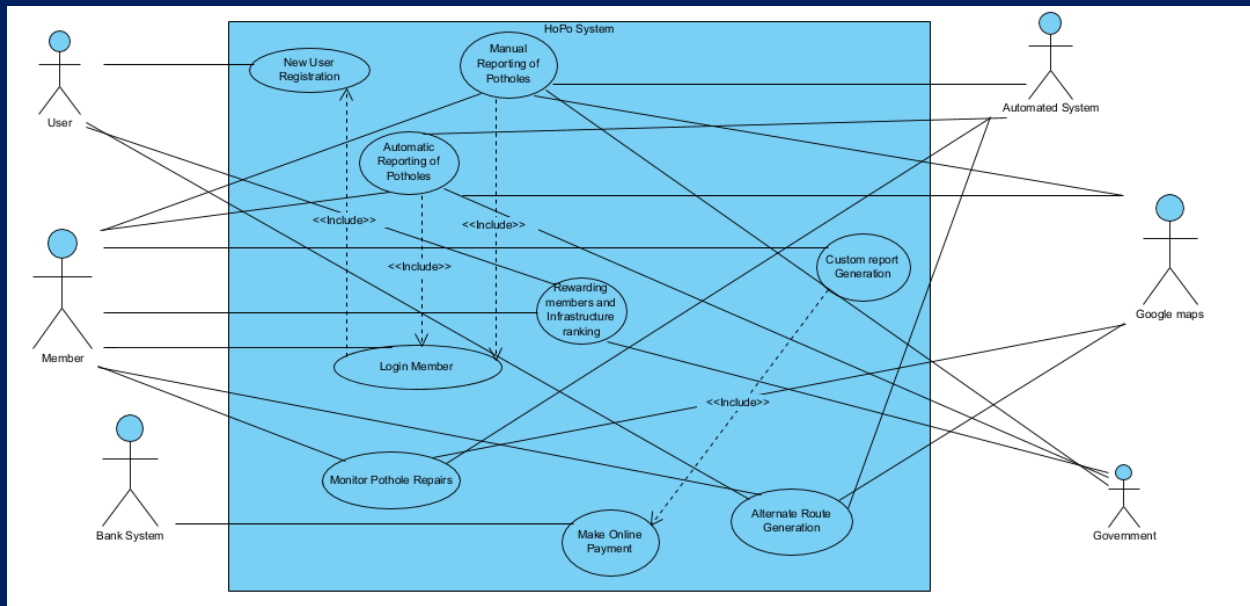
1. Log In and New User Registration
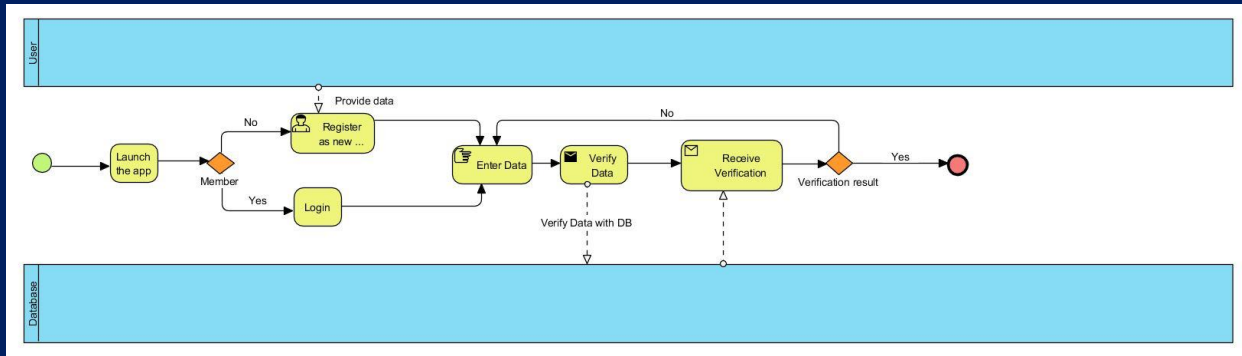
2. Pothole reporting

3. Monitoring the potholes

4. Other tasks

USE CASE DIAGRAM

USE CASE DESCRIPTIONS

USE CASE 1:

Use Case Name: Manual Reporting of potholes

Primary Actor: Member

Stakeholders: Automatic System

Description: Ability for a member only to notify the pothole manually.

Trigger: Member clicks on Report a Pothole Button

Relationships:

       Includes: Login Member

       Excludes:

Normal flow of events:

1. User launches the HoPo Application on mobile
2. User <u>logs in</u> as a member in the application
3. Click on Report a Pothole
4. <u>Location</u> of the pothole is retrieved from Google Maps
5. Enter <u>Date</u> and <u>Time</u>
6. Input the <u>pothole size</u>
7. Input the <u>severity</u> of the pothole
8. Click on Report Button
9. Acknowledgement message to the User:" Your pothole has been notified."
10. An email will be sent every 15 days about the <u>report of the potholes</u> to relevant <u>local authority</u> from our database

Exceptional Flow:

    2A1. If the User logs in as a Guest in the application

    2A2. Pop-up message Display: "You must be a member to notify the pothole"

    2A3.

       1. If User clicks on Register, execute New member registration Use case.
       2. If User clicks on Register Later, Exit

USE CASE 2:

Use Case Name: Automatic Reporting of potholes

Primary Actor: Member

Stakeholders: Automatic System

Description: Ability for a member only to notify the pothole automatically.

Trigger: Automated system detects pothole on route

Relationships:

Includes: Login Member

Excludes:

Normal flow of events:

1. User launches the HoPo Application on mobile
2. User logs in as a member in the application
3. Automated System detects a pothole on <u>route</u>
4. If Member has enabled <u>push</u> <u>notification</u> option active while <u>registration</u>

4.a. Was it a pothole? Yes/ No/ Report More

4.a.1. If Yes, then Confirm the location of the pothole provided by Google maps

4.a.2. If No, then Exit

4.a.3. If Report More, Execute Use Case 1, Step 4 onwards

5. Automated system fills in all the required <u>pothole data</u> and sends it to our database
6. An email will be sent every 15 days about the <u>report of the potholes</u> to relevant <u>local authority</u> from our database
7. Exit

Exceptional Flow:

4A1. If Member has enabled push notification option inactive while registration, then Exit

USE CASE 3:

Use Case Name: New User Registration

Primary Actor: User

Stakeholders: Our System

Description: Ability for the User to register as a member

Trigger: User clicks on Register Button

Relationships:

Includes:

Excludes:

Normal flow of events:

1. User Downloads the HoPo mobile Application
2. Option to Register or Continue as a guest

2.a. If Register, enter <u>User</u> <u>Details</u>

2.b If Continue as a <u>guest</u>, No Data entered for the User, Exit

USE CASE 4:

Use Case Name: Login

Primary Actor: Member

Stakeholders: Our System

Description: Load User Preferences onto Display

Trigger: Member Logs into the System with Username and Password

Relationships:

>   **Includes:** New User Registration

>   **Excludes:**

Normal flow of events:
1. Login information is submitted.
2. System sends username and password to HoPo system for authentication and retrieving member Data
3. Compare retrieved Member Information to stored Member Information.

Exceptional Flow:
>   3A. Authentication failed, display invalid username and/or password (error screen)
>   3B. Exit

USE CASE 5:

Use Case Name: Monitoring the Repairs of Potholes

Primary Actor: Member

Stakeholders: Automatic System

Description: Automatic system and driver monitor the repairs of the potholes

Trigger:

Relationships:

>   **Includes:**

>   **Excludes:**

Normal flow of events:

1. User Opens HoPo Application

2. User Enters Destination Address

3.Our System will push the Location Details to the Automated system

4. If the automated Device passes from the locations identified in Step 3, Increment Pothole Count counter in our database for a particular location

5.If the pothole monitor counter reaches a value of 3, pothole is considered as repaired

6.Exit

USE CASE 6:

Use Case Name: Make Online Payment for viewing customized reports

Primary Actor: Member

Stakeholders: Bank System

Description: Member makes online payment successfully and gets a confirmation email

Trigger: Member Clicks on Pay Online Button

Relationships:

Includes:

Excludes:

Normal flow of events:
1. User clicks on Pay Online Button
2. System displays the payment details screen
3. System retrieves User details from database
4. Member confirms the payment
5. System sends a confirmation e-mail to the Member

USE CASE 7:

Use Case Name: Custom Report Generation

Primary Actor: Member

Stakeholders: Our System

Description: Member generate custom reports according to their interests

Trigger: Member Clicks on Generate Report Button

Relationships:

Includes: Make Online Payment

Excludes:

Normal flow of events:
1. Member opens Reports tab
2. Selects Report fields of his/her choice
3. Member sees estimated cost of report
4. Clicks on Generate report button
5. Pop-Up for making the online payment – Buy/Cancel
   5.1 If Buy, user makes the online payment
       6.1.a. User accesses the report
       6.1.b. User exits the app
   5.2 Cancel, Message declining the viewing of report, exit

Exception flow:
4.A.1. User does not click on generate report button
4.A.2. User exits the app

USE CASE 8:

Use Case Name: Rewarding Registered Users

Primary Actor: User

Stakeholders: Our System

Description: Member receive rewards based on their ranks

Trigger: Member Clicks on 'Winners' Tab

Relationships:

    Includes:

    Excludes:

Normal flow of events:

1. All users are able to see the Top 3 winners of the month per state and the infrastructure rankings of state
2. If Member,
   2.1. Each Member receives an Autogenerated email of the Top 3 winners of the month
   2.2. Email has hyperlink to see his own rank
3. User sees the current ranking
4. Exit

Exception Flow:

    2.A. If Non-member, User would not receive an email

USE CASE 9:

Use Case Name: Alternate route generation

Primary Actor: User

Stakeholders: Our System, Google Maps

Description: User gets the alternate route depending on the pothole count

Trigger: Member enters his destination in google maps

Relationships:

    Includes:

    Excludes:

Normal flow of events:

1. User sets destination in Google maps
2. User gets the data of number of potholes on that route from the system
3. If the number of potholes is more than 3 per mile, then suggest an alternate route to the user.

DATA DICTIONARY

Use case-1: Manual reporting of pot holes

Member login = User id+ Password

Report pothole =Pothole Data

Urgency= [Not Urgent | Immediate action required]

Pothole data= Date + Time + [GPS_location | Manual_ Location] + [Small |Medium| Large] +Urgency

Mail_Local_Authorities=Email id + Pothole data

Push notification= [Enable | Disable]

Enable data collection= [Enable |Disable]

Member data = Name + User_id + Password + Email_id+ Mobile_Number + (Photo) + Push_notification + Enable data collection +Street +City+ State

Mail_Local_Authorities= Email_id + Pothole data

Use case-2: Automated pothole reporting

Member login = User id + Password

Push notification= [Enable | Disable]

Enable data collection= [Enable |Disable]

Member data = Name + User_id + Password + Email_id+ Mobile_Number + (Photo) + Push_notification + Enable data collection +Street +City+ State

Pothole Flag=[Yes/N0]

Reported pothole data= User_id + [Auto System data/Pothole data] + (pothole flag)

Auto system data = GPS_Location +Date+ Time + [Small |Medium| Large] +Urgency

Urgency= [Not Urgent | Immediate action required]

Pothole data= Date + Time + [GPS_location | Manual_ Location] + [Small |Medium| Large] +Urgency

Mail_Local_Authorities=Email id + Pothole data

Use case-3: New user registration

Push notification= [Enable | Disable]

Enable data collection= [Enable |Disable]

Member data = Name + User_id + Password + Email_id+ Mobile_Number + (Photo) + Push_notification + Enable data collection +Street +City+ State

Use case-4: Member login

Member login = User id+ Password

Push notification= [Enable | Disable]

Enable data collection= [Enable |Disable]

Member data = Name + User_id + Password + Email_id+ Mobile_Number + (Photo) + Push_notification + Enable data collection +Street +City+ State

Use case-5: Monitoring potholes

Push notification= [Enable | Disable]

Enable data collection= [Enable |Disable]

Member data = Name + User_id + Password + Email_id+ Mobile_Number + (Photo) + Push_notification + Enable data collection +Street +City+ State

Pothole location= Location_Hopo

Member travel route = location_GPS | Manual_Location+ Destination_Location

Automated inspection = [Flag_yes |Flag_No]

Use case-6: Rewards and Recognition

Winners data = User id + State + Rank 1+Rank 2+ Rank 3+Month + Years

Infrastructure ranking = State + Score + [Improved| Declined |Status-quo maintained]

Use case –6: Pothole count alert:

Route data = [location_manual| GPS_location] +Location_Manual

Pot hole count = Total_potholes + (Alternate_route)

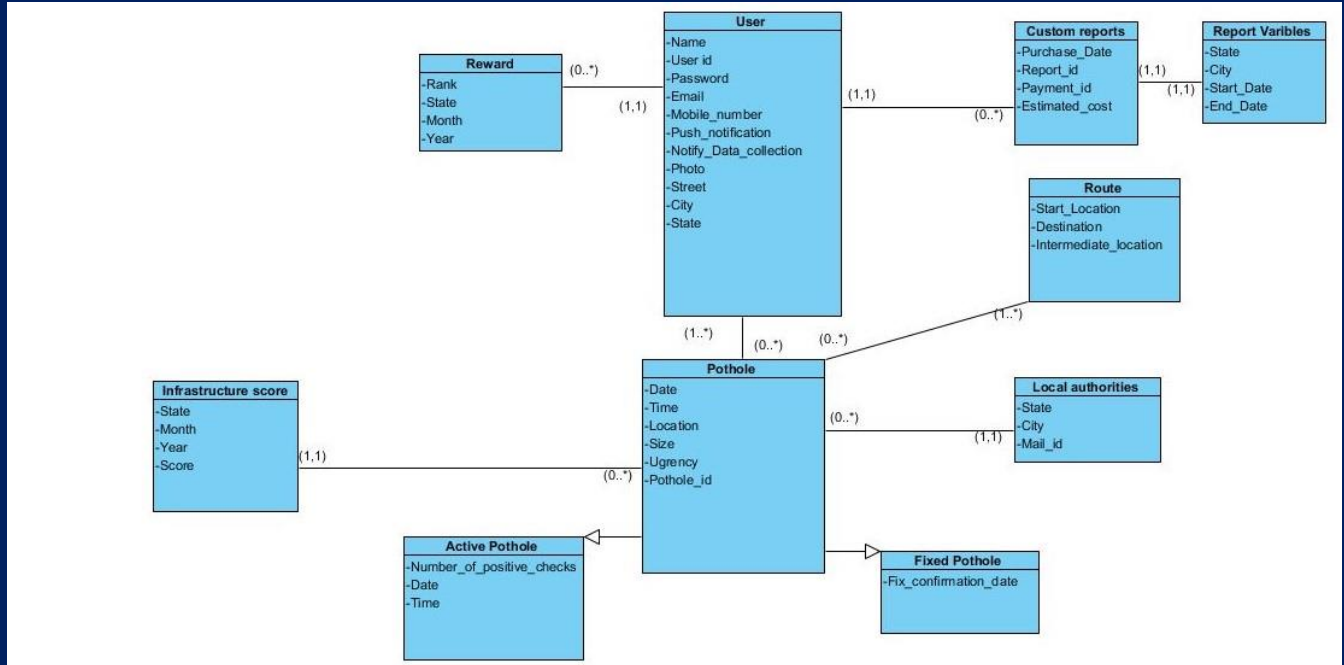Alternate route= Start_Location + $_1${Intermediate_Location} + End_Location

Use case –7: Custom reports

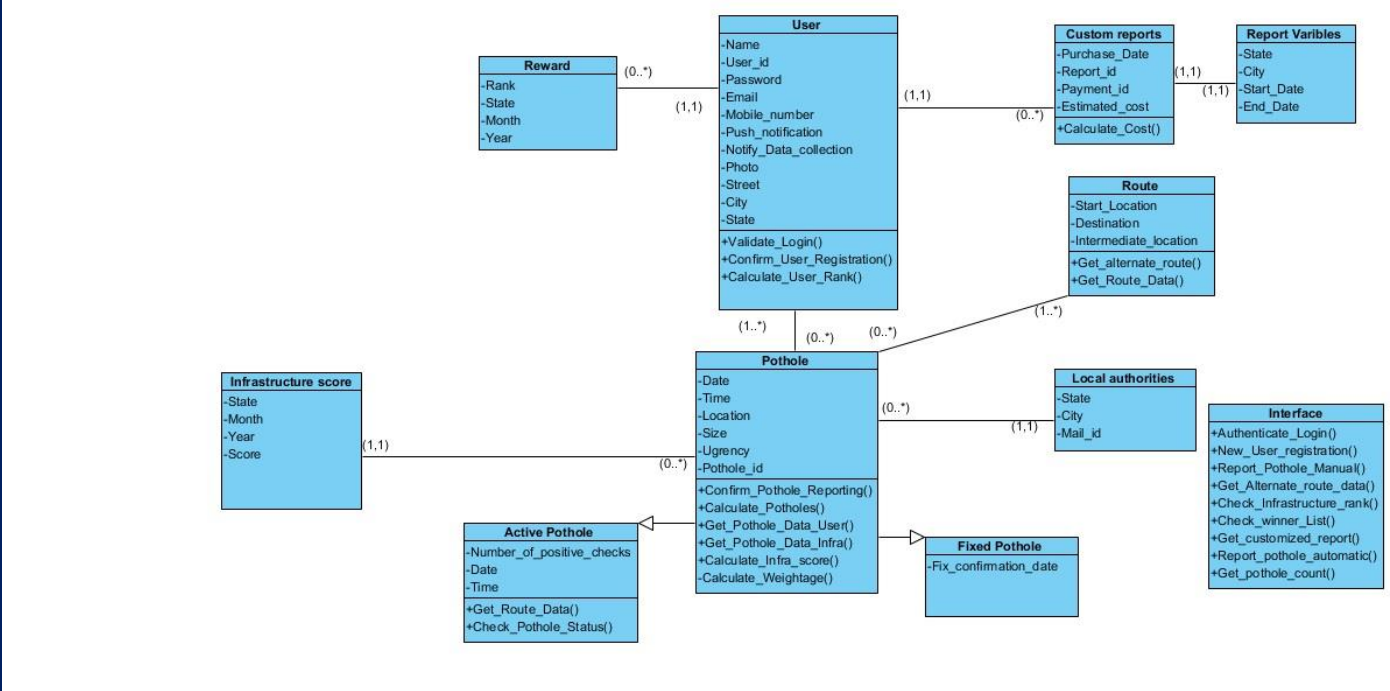Report data= $_0${State}+$_0$ {City} + Start_date + End_Date + Estimated_cost

Payment confirmation= [Yes|No]

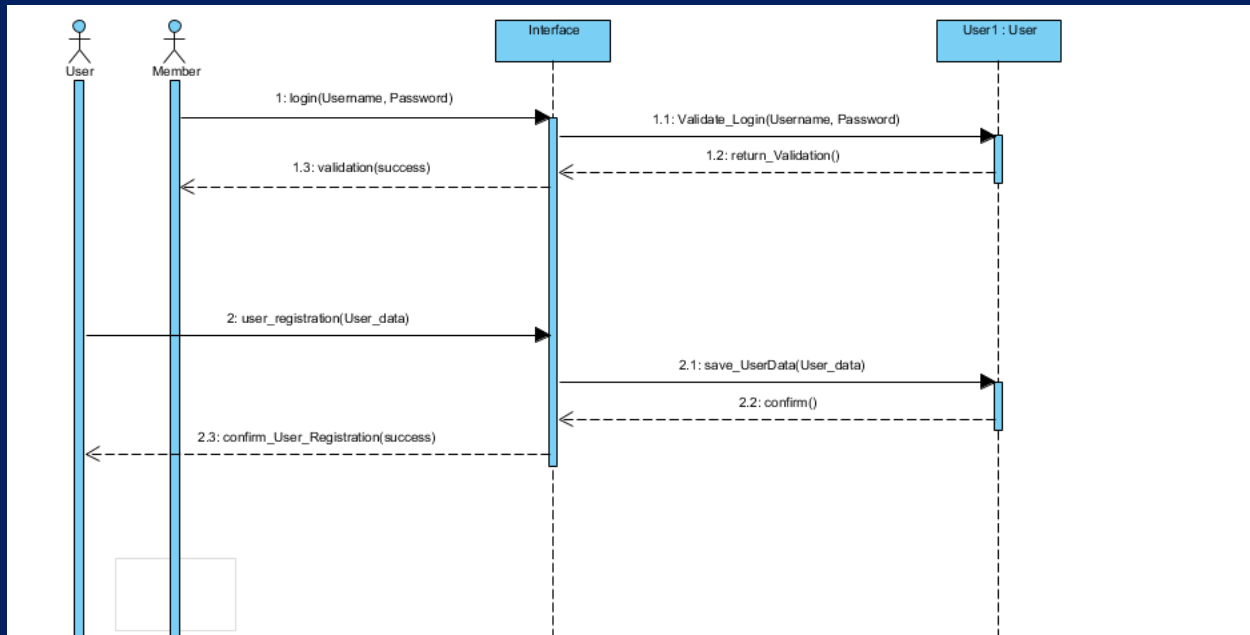Payment data = Estimated_cost + Payment_confirmation
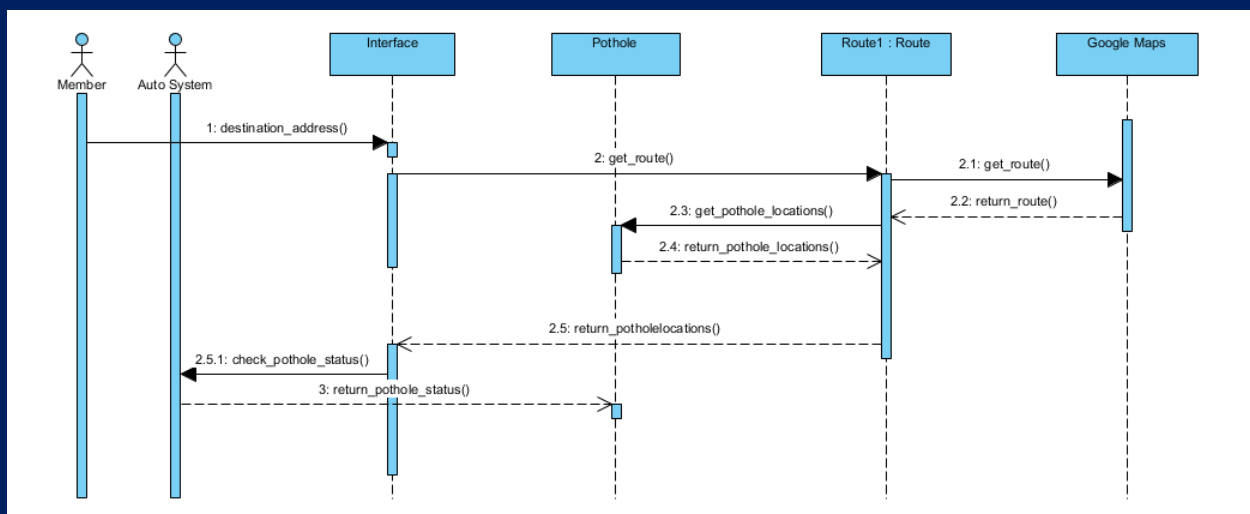
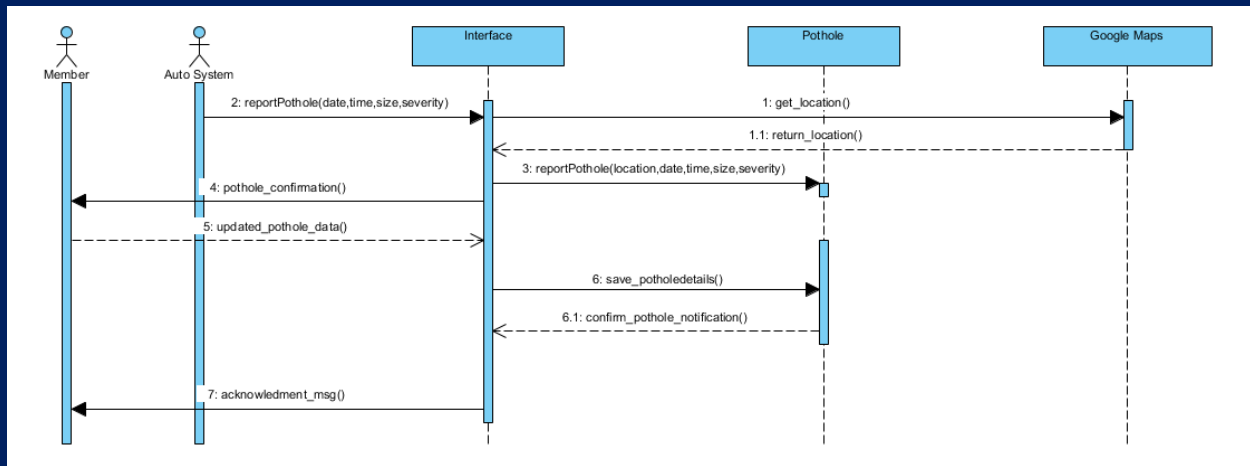# CLASS DIAGRAM

CLASS DIAGRAM WITH METHODS

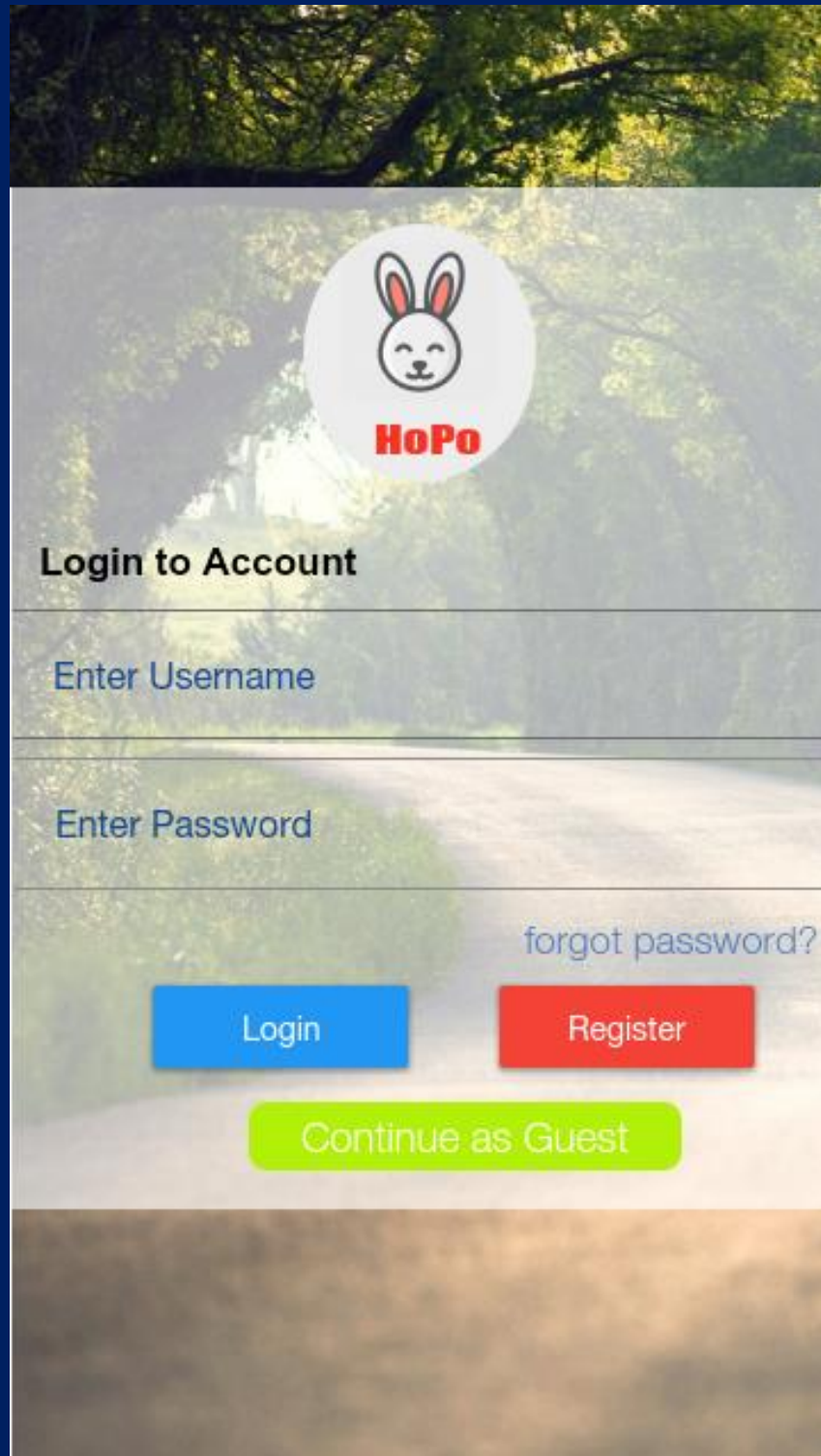# SEQUENCE DIAGRAM

1. Member Log In & any user

2. Monitor repairs of potholes

3. Automated Pothole Reporting with Manual Intervention

USER INTERFACE DESIGN

Enter Name

Password   Enter password

Email   Enter email address

Phone   Enter phone number

Address

Street   Enter street

City   Enter city

State   Texas

HoPo Settings

☑ Enable push notifications

☑ Enable data collection

Save   Cancel

Infrastructure Rankings - State

State	Score	Trend
Texas	84	↓
Arizona	82	↑
Colorado	79	↑
Illinois	75	↓
Alabama	71	—
Tennessee	71	↑
Minnesota	69	↓
Ohio	68	↑
Alaska	66	—
Virginia	65	↓
Washington	64	↑
Utah	62	↑
Maryland	49	↓

Monthly Winners by State

Search your name

Texas

Ohio

Wisconsin

Maryland

Minnesota

Arkansas

Georgia

Florida

Hawaii

Michigan

New Jearsey

Arizona

Customized Reports

State & Time

State   Texas

County   Richardson

From   Enter From date

To   Enter To date

Delivery Method

Email   ✓

Postal

Estimated Cost

$25

Buy   **Cancel**

Home

Count of Potholes

7

Suggested Alternate Routes

Route 1 ✓

Route 2

Route 3

Pick the Route
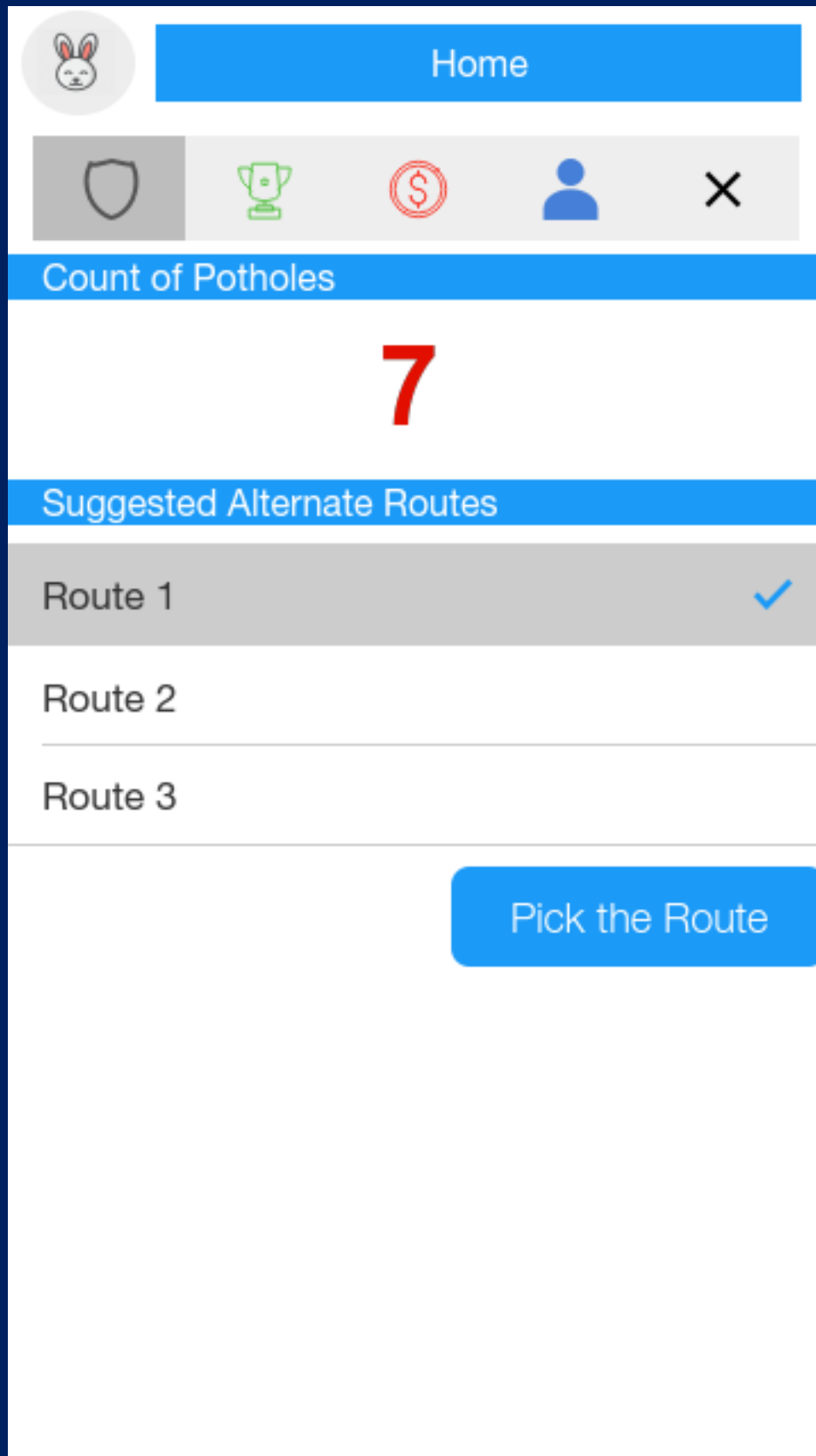
DATABASE DESIGN
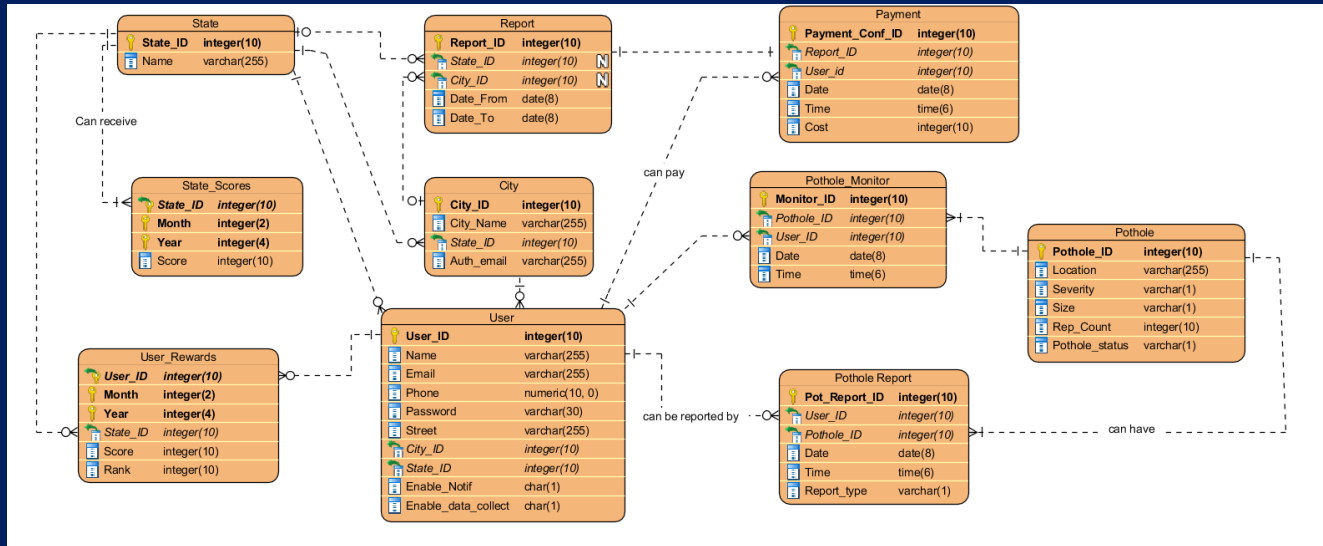
SOFTWARE DESIGN

Method 1

Signature

Method Name: Calculate_User_Rank	Class Name: User	ID: User_ID
Clients: Rewards		
Associated Usecases: Rewarding Registered Users		
Description of Responsibilities: Calculates user ranks for a state		
Arguments Received: state_id		
Type of Value Returned: Object – with attributes user id, score, state		
Pre-conditions: 1. State has users who have reported potholes		

Post-conditions: 1. Sending the User object with score to Reward class
                2. Score is greater than zero and is a natural number
                3. user_id and user_state is never null.		

Logic
CREATE OBJECT user_temp with **PARAMETERS** user_id, rank, score.
CREATE User_rank_Arr **AS ARRAY OF OBJECTS**.
FETCH users **FROM TABLE** User.
no_of_users = **COUNT**(users).
FOR counter=1 to no_of_users
      IF state_id = user.user_state.
          CLEAR user_temp.
          User_temp.user_id = user.user_id
          FETCH user_pothole_data(user_id);
          User_temp.score = **COUNT**(user_pothole_data) ;
          User_temp.state = user.user_state.
          User_rank.Arr.insert(user_temp).
      ENDIF.
END FOR.
SORT User_rank_arr **BY** user.score **LIMIT TO** 3.
RETURN User_Rank_arr;

Method 2:

Method Name: Calculate_Rank	**Class Name**: Infrastructure	**ID**: State_ID
Clients: Interface		
Associated Usecase: Calculating Infrastructure Rank		
Description of Responsibilities: Calculates sorted order of States		
Arguments Received: Month, Year		
Type of Value Returned: Object – with attributes state_id, score		
Pre-conditions: 1. All states have repaired pothole data 2. State_count is always 50		
Post-conditions: 1. Sending the State object with rank to Interface class		

Logic

CREATE OBJECT state_temp with **PARAMETERS** state_id, score.
CREATE State_rank_Arr **AS ARRAY OF OBJECTS**.
FETCH states **FROM TABLE** states .
FOR counter 1 to 50.
        CLEAR state_temp.
        FETCH pothole_data_state (state.state_id, year, month).
        COUNT(pothole_data_state) INTO total_count.
        COUNT(pothole_data_state) WHERE status = 'INACTIVE' INTO count_inactive.
        State_temp.state_id = state.state_id.
        State_temp.state_score = (count_inactive/total_count) * 100.
        State_rank_arr.insert(state_temp).
END FOR.
SORT state_rank_arr **BY** state_score.
RETURN state_rank_arr.

Method 3

Method Name: Calculate_Cost	Class Name: Custom_Reports	ID: Report_ID
Clients: Interface		
Associated Usecase: Custom Report Generation		
Description of Responsibilities: Calculates the estimated cost of a report		
Arguments Received: State, City, From_Date, To_Date		
Type of Value Returned: Integer		
Pre-conditions: 1. From_Date is never null 2. To_Date is never null		
Post-conditions: 1. Sending the estimated cost to Interface class 2. Estimated cost is always greater than 0		

Logic

FETCH pothole_data **GIVEN** state, city, From_Date, To_date.
Entries_per_page = 100.
IF COUNT(pothole_data) > 0.
        Pothole_data_Count = COUNT(pothole_data).
        Report pages = pothole_data_count/entries_per_page.
        Estimated_cost = report_page * 25.
ENDIF.
RETURN estimated_cost.

Method 4: Calculating the weightage of a pothole

Signature

Method Name: Calculate_weightage	**Class Name**: Pothole	**ID**: Pothole_id
Clients: Pothole (Private Method)		
Associated Usecase: Manual Reporting of Potholes, Automatic Reporting of Pothole		
Description of Responsibilities: Calculates the weightage of a pothole		
Arguments Received: Location		
Type of Value Returned: Integer		
Pre-conditions: Location is valid and never null		
Post-conditions: Weightage is always greater than 0.		

Logic
FETCH pothole_data **FROM TABLE** pothole **WHERE** pothole.location = location.
IF pothole_data IS **NULL**.
       Pothole_weightage = 10.
ELSE.
       Pothole weightage = pothole_weightage + 10.
ENDIF.
RETURN pothole_weightage.

Method 5

Signature

Method Name: validate_login	**Class Name**: User	**ID**: user_id
Clients: Interface		
Associated Usecase: Login		
Description of Responsibilities: Verifies the login credentials		
Arguments Received: user_id, password		
Type of Value Returned: Boolean		
Pre-conditions: User Id and password cannot be null and are alphanumeric		
Post-conditions: Returns a Boolean flag		

Logic

FETCH user_data **FROM TABLE WHERE** user_id = :user_id **INTO** user_1.
IF user_1 IS **NULL**.
      Bool = **FALSE**.
ELSE
      IF user_1.password === password.
            Bool = **TRUE**.
      ELSE.
            Bool = **FALSE**.
      ENDIF.
ENDIF
RETURN bool.

FUNCTIONAL SPECIFICATION AS USER STORIES

Format: *"As a <role>, I want <goal/desire> so that <benefit>"*

User Story #1 – Pothole Reporting

As a user, I want to report the various potholes I find in the state and national highways so that those can be reported to the concerned authority and can be repaired soon.

User Story #2 – Pothole Count

As a user, I want to know the number of potholes within a route so that I can travel by an alternate route if needed.

User Story #3 – State Ranking

As a user, I want to know the rankings of various states in the order of the state of the infrastructure so that I can learn the locality well.

User Story #4 – User Rating + Monthly Winners

As a user, I would like to know how I perform as a user in reporting the potholes so that I am encouraged to report potholes in the future.

User Story #5 – Profile Registration + Maintenance + Login

As a user, I do not want to fill in my personal information time and time again so that the time can be utilized for something worthwhile.

User Story #6 – Buy Customized Reports

As a user, I want reports on the road infrastructure so that I can analyze the locality and state authority on various aspects.

REFERENCES

[1] https://www.cartoonstock.com/cartoonview.asp?catref=smtn359

[2] https://www.pothole.info/the-facts/

PROJECT MANAGEMENT DELIVERABLES

Allocation Of Activities To Team Members:

The entire team met during each of the project meetings and collaborated on every aspect of this project. In times of difference of opinions, all the options were thoroughly analyzed and the solution that was best fit for the project requirement was mutually agreed upon by the team.

MINUTES OF THE PROJECT MEETINGS

Project meeting #: 1	
Date, Day and time	08/ 23/ 2018, Thursday – 12.00 – 1.00 p.m.
Attendees	✓ Anand Muraleedharan ✓ Ayyappa Reddy Satti ✓ Jagruti Wagh ✓ Namrata Patil ✓ Neethu Narayanan
Agenda	First project meeting and introduction

Discussion Items
• As part of the first meeting of our project group, we introduced ourselves to rest of the group and got to know the value proposition of each team member. • The team members exchanged phones numbers and email ids. • The team also agreed on creating a shared folder on Dropbox. • Each team member should post any new idea for the project on the WhatsApp group until next meeting.

Action Items		
Action Item Detail	Assigned to	Due by
Come up with an innovative project idea	Anand	08/ 27 / 2018
Come up with an innovative project idea	Ayyappa	08/ 27 / 2018
Come up with an innovative project idea	Jagruti	08/ 27 / 2018
Come up with an innovative project idea	Namrata	08/ 27 / 2018
Come up with an innovative project idea	Neethu	08/ 27 / 2018
Schedule of next meeting	08/ 27/ 2018, Monday, 10.00 a.m.–12.00 p.m.	
Agenda of next meeting	Brainstorm project ideas	

Project meeting #: 2	
Date, Day and time	08/ 27/ 2018, Monday, 10.00 a.m.–12.00 p.m.
Attendees	✓ Anand Muraleedharan ✓ Ayyappa Reddy Satti ✓ Jagruti Wagh ✓ Namrata Patil ✓ Neethu Narayanan
Agenda	Brainstorm project ideas

Discussion Items

- Each team member presented their idea for the project as listed below:
    1. Neethu: Social Media Veracity Verifier
    2. Ayyappa: Poll Pulse generator
    3. Anand: Infrastructure Monitoring & Maintenance System
    4. Namrata: One UTD
    5. Jagruti: Home groups
- Each of these ideas were analyzed rigorously by the team with respect to several factors such as uniqueness, impact and technologies involved.
- Ultimately, we shortlisted 2 topics to present to the Professor and finalize the one he determines as the best fit.
- The two shortlisted topics were:
    1. Infrastructure Monitoring & Maintenance System
    2. Poll Pulse generator

Action Items

Action Item Detail	Assigned to	Due by
Research further about the 2 topics.	Anand	09/ 10/ 2018
Research further about the 2 topics.	Ayyappa	09/ 10/ 2018
Research further about the 2 topics.	Jagruti	09/ 10/ 2018
Research further about the 2 topics.	Namrata	09/ 10/ 2018
Research further about the 2 topics.	Neethu	09/ 10/ 2018
Schedule of next meeting	09 / 10/ 2018, Monday, 10.00 am–12.00 pm	
Agenda of next meeting	Prepare 1-page draft for each of the 2 shortlisted ideas	

Project meeting #: 3	
Date, Day and time	09 / 10/ 2018, Monday, 10.00 am–12.00 pm
Attendees	✓ Anand Muraleedharan ✓ Ayyappa Reddy Satti ✓ Jagruti Wagh ✓ Namrata Patil ✓ Neethu Narayanan
Agenda	Prepare 1-page draft for each of the 2 shortlisted ideas

Discussion Items

- Based on the information collected by each of the team mate, a consolidated 1-page draft was created for each of the two project ideas.
- These drafts will be presented to the Professor for his review.

Action Items

Action Item Detail	Assigned to	Due by
Prepare a rough draft of defining the existing problem	Anand	09/ 13/ 2018
Prepare a rough draft of the business need	Ayyappa	09/ 13/ 2018
Prepare a rough draft of the scope of the project	Jagruti	09/ 13/ 2018
Prepare a rough draft of the executive summary	Namrata	09/ 13/ 2018
Prepare a rough draft of the objectives of the project	Neethu	09/ 13/ 2018
Schedule of next meeting	09 / 13/ 2018, Thursday, 2.00 p.m.–4.00 p.m.	
Agenda of next meeting	Write executive summary and define problem statement of the finalized project topic.	

Project meeting #: 4	
Date, Day and time	09 / 13/ 2018, Thursday, 2.00 p.m.–6.00 p.m.
Attendees	✓ Anand Muraleedharan ✓ Ayyappa Reddy Satti ✓ Jagruti Wagh ✓ Namrata Patil ✓ Neethu Narayanan
Agenda	Write executive summary and define problem statement of the finalized project topic.

Discussion Items

- The project topic was finalized after discussion with Professor and it was 'Infrastructure Monitoring and Maintenance System'.
- Everyone shared the drafts prepared by them and collaboratively wrote the following components of the project report:
    1. Executive Summary
    2. Problem Statement
    3. Business need
    4. Scope of the project
    5. Objectives
    6. Assumptions
- All the team members agreed upon the below process for project execution:

    If we have planned to work on designing context diagram for the proposed system during our next meeting, then each team member will carefully study the theory concepts related to context diagram & its design, before they come for the subsequent meeting.

Action Items

Action Item Detail	Assigned to	Due by
Study theoretical concepts of creating business process model using BPMN.	Anand	09/ 22/ 2018
Study theoretical concepts of creating business process model using BPMN.	Ayyappa	09/ 22/ 2018
Study theoretical concepts of context diagram.	Jagruti	09/ 22/ 2018
Study theoretical concepts of creating business process model using BPMN.	Namrata	09/ 22/ 2018
Study theoretical concepts of context diagram.	Neethu	09/ 22/ 2018
Schedule of next meeting	09 / 22/ 2018, Saturday, 12.00 p.m.– 3.00 p.m.	

Agenda of next meeting	Create business process model using BPMN and create context diagram for the proposed system.

Project meeting #: 5	
Date, Day and time	09 / 22/ 2018, Saturday, 12.00 p.m.– 3.00 p.m.
Attendees	✓ Anand Muraleedharan ✓ Ayyappa Reddy Satti ✓ Jagruti Wagh ✓ Namrata Patil ✓ Neethu Narayanan
Agenda	Create business process model using BPMN and create context diagram for the proposed system.

Discussion Items

- The team collaboratively worked upon creation of context diagram for the proposed system and business process model using BPMN.

Action Items

Action Item Detail	Assigned to	Due by
Study theoretical concepts related to use case diagram and use case description	Anand	10/ 04/ 2018
Study theoretical concepts related to use case diagram and use case description	Ayyappa	10/ 04/ 2018
Study theoretical concepts related to use case diagram and use case description	Jagruti	10/ 04/ 2018
Study theoretical concepts related to use case diagram and use case description	Namrata	10/ 04/ 2018
Study theoretical concepts related to use case diagram and use case description	Neethu	10/ 04/ 2018
Schedule of next meeting	10 / 04/ 2018, Thursday, 12.00 p.m.– 3.00 p.m.	
Agenda of next meeting	Write use cases for the proposed system	

Project meeting #: 6	
Date, Day and time	10 / 04/ 2018, Thursday, 12.00 p.m.– 3.00 p.m.
Attendees	✓ Anand Muraleedharan ✓ Ayyappa Reddy Satti ✓ Jagruti Wagh ✓ Namrata Patil ✓ Neethu Narayanan
Agenda	Write use cases for the proposed system

Discussion Items
• The team brainstormed multiple possible scenarios and shortlisted relevant and meaningful use cases. • Use case diagrams were created for each of these use cases • Detailed use case descriptions were then written for those use case diagrams so as to elaborate upon the use case functionality.

Action Items

Action Item Detail	Assigned to	Due by
Study theoretical concepts related to data dictionary and class diagram	Anand	10/ 18/ 2018
Study theoretical concepts related to data dictionary and class diagram	Ayyappa	10/ 18/ 2018
Study theoretical concepts related to data dictionary and class diagram	Jagruti	10/ 18/ 2018
Study theoretical concepts related to data dictionary and class diagram	Namrata	10/ 18/ 2018
Study theoretical concepts related to data dictionary and class diagram	Neethu	10/ 18/ 2018
Schedule of next meeting	10 / 18/ 2018, Thursday, 1.00 p.m.– 4.00 p.m.	
Agenda of next meeting	Define data dictionary and prepare class diagrams	

Project meeting #: 7	
Date, Day and time	10 / 18/ 2018, Thursday, 1.00 p.m.– 4.00 p.m.
Attendees	✓ Anand Muraleedharan ✓ Ayyappa Reddy Satti ✓ Jagruti Wagh ✓ Namrata Patil ✓ Neethu Narayanan
Agenda	Define data dictionary and prepare class diagrams

Discussion Items		
• The team pooled in their ideas and defined the data dictionary and outlined the class diagrams.		

Action Items		
Action Item Detail	Assigned to	Due by
Study theoretical concepts related to sequence diagram and drafting of the functional specification document.	Anand	11/ 01/ 2018
Study theoretical concepts related to sequence diagram and drafting of the functional specification document.	Ayyappa	11/ 01/ 2018
Study theoretical concepts related to sequence diagram and drafting of the functional specification document.	Jagruti	11/ 01/ 2018
Study theoretical concepts related to sequence diagram and drafting of the functional specification document.	Namrata	11/ 01/ 2018
Study theoretical concepts related to sequence diagram and drafting of the functional specification document.	Neethu	11/ 01/ 2018
Schedule of next meeting	11 / 01/ 2018, Thursday, 1.00 p.m.– 4.00 p.m.	
Agenda of next meeting	Write the functional specification document for the proposed system and fashion the sequence diagram.	

Project meeting #: 8	
Date, Day and time	11 / 01/ 2018, Thursday, 1.00 p.m.– 4.00 p.m.
Attendees	✓ Anand Muraleedharan ✓ Ayyappa Reddy Satti ✓ Jagruti Wagh ✓ Namrata Patil ✓ Neethu Narayanan
Agenda	Write the functional specification document for the proposed system and fashion the sequence diagram.

Discussion Items
• The team first worked on the sequence diagram and then drafted the functional specification document for the HoPo map system.

Action Items

Action Item Detail	Assigned to	Due by
Study theoretical concepts related to user interface design	Anand	11/ 15/ 2018
Study theoretical concepts related to user interface design	Ayyappa	11/ 15/ 2018
Study theoretical concepts related to user interface design	Jagruti	11/ 15/ 2018
Study theoretical concepts related to user interface design	Namrata	11/ 15/ 2018
Study theoretical concepts related to user interface design	Neethu	11/ 15/ 2018
Schedule of next meeting	11 / 15/ 2018, Thursday, 1.00 p.m.– 4.00 p.m.	
Agenda of next meeting	Complete user interface design of the HoPo map system	

Project meeting #: 9	
Date, Day and time	11 / 15/ 2018, Thursday, 1.00 p.m.– 4.00 p.m.
Attendees	✓ Anand Muraleedharan ✓ Ayyappa Reddy Satti ✓ Jagruti Wagh ✓ Namrata Patil ✓ Neethu Narayanan
Agenda	Complete user interface design of the HoPo map system

Discussion Items
• The team spent significant time in brainstorming the layout of the user interface design and eventually finalized the one mutually agreed upon by everyone. Consequently, the user interface was designed by the end of the meeting.

Action Items		
Action Item Detail	Assigned to	Due by
Study theoretical concepts related to database and software design	Anand	11/ 21/ 2018
Study theoretical concepts related to database and software design	Ayyappa	11/ 21/ 2018
Study theoretical concepts related to database and software design	Jagruti	11/ 21/ 2018
Study theoretical concepts related to database and software design	Namrata	11/ 21/ 2018
Study theoretical concepts related to database and software design	Neethu	11/ 21/ 2018
Schedule of next meeting	11 / 21/ 2018, Wednesday, 9.00 a.m.– 4.00 p.m.	
Agenda of next meeting	Model the database and software design of the HoPo map system	

Project meeting #: 10	
Date, Day and time	11 / 21/ 2018, Wednesday, 9.00 a.m.– 4.00 p.m.
Attendees	✓ Anand Muraleedharan ✓ Ayyappa Reddy Satti ✓ Jagruti Wagh ✓ Namrata Patil ✓ Neethu Narayanan
Agenda	Model the database and software design of the HoPo map system

Discussion Items		
• The team worked upon creating the database design and software design of the HoPo system.		

Action Items		
Action Item Detail	Assigned to	Due by
None	Anand	11/ 21/ 2018
None	Ayyappa	11/ 21/ 2018
None	Jagruti	11/ 21/ 2018
None	Namrata	11/ 21/ 2018
None	Neethu	11/ 21/ 2018
Schedule of next meeting	11 / 25/ 2018, Sunday, 3.00 p.m.– 6.00 p.m.	
Agenda of next meeting	Draft the final project report.	

Project meeting #: 11	
Date, Day and time	11 / 25/ 2018, Sunday, 3.00 p.m.– 8.00 p.m.
Attendees	✓ Anand Muraleedharan ✓ Ayyappa Reddy Satti ✓ Jagruti Wagh ✓ Namrata Patil ✓ Neethu Narayanan
Agenda	Draft the final project report.

Discussion Items		
• The final project report related to the proposed HoPo system was created by consolidating all the tasks accomplished until now and sequential agglomeration of diagrams designed so far.		

Action Items		
Action Item Detail	Assigned to	Due by
None	Anand	11/ 29/ 2018
None	Ayyappa	11/ 29/ 2018
None	Jagruti	11/ 29/ 2018
None	Namrata	11/ 29/ 2018
None	Neethu	11/ 29/ 2018
Schedule of next meeting	11 / 29/ 2018, Thursday, 12.00 p.m.– 3.00 p.m.	
Agenda of next meeting	Work on the YouTube presentation of the proposed HoPo system.	

Project meeting #: 12	
Date, Day and time	12 / 05/ 2018, Wednesday, 12.00 p.m.– 3.00 p.m.
Attendees	✓ Anand Muraleedharan ✓ Ayyappa Reddy Satti ✓ Jagruti Wagh ✓ Namrata Patil ✓ Neethu Narayanan
Agenda	Work on the YouTube presentation of the proposed HoPo map system.

Discussion Items
• The team met for the final time to work on the YouTube presentation of the HoPo map system. • The team presented their novel idea in the form of YouTube presentation and the link for the same was appended to the project report. • The team submitted the final project report on e-Learning. • Project was successfully accomplished and thus closed.

Action Items

Action Item Detail	Assigned to	Due by
None	Anand	Not applicable
None	Ayyappa	Not applicable
None	Jagruti	Not applicable
None	Namrata	Not applicable
None	Neethu	Not applicable
Schedule of next meeting	Not applicable	
Agenda of next meeting	Not applicable	