# **CS7CS3 Advanced Software Engineering Group Project**

# **Requirements/Use Cases**

# **Project Name:** *Please enter here*

**Group: *<Group Number>***

***<List of Group Members>***

# **1. Use Case Diagram**

Please include a UML Use Case Diagram (see slides on Blackboard) for the project.

*Diagram here.*

*<From <single use case description start> to <single use case description end> contains the structure of the information that should be here for* ***each*** *use case. Copy and fill all sections for* ***EACH******USE CASE****>*

*<single use case description start>*

### **Use Case Name:** *Please enter here* Generate heat-map/flow-map for station use on the map display.

1. Description

*Describe the goals and responsibilities of the Use Case*

*Goals:*

1. Displaying a heat map for different bicycles stations present based on the bike data for different locations on the city.

2. Selection of a particular area on map and to display the number of stations and also bikes present

3. Provide filtering of visualisations based on the stations present in the different areas on the map.

*Responsibilities:*

*1.* This use case will be responsible for getting the information regarding the availability of bikes and bike stations on the map and also helps to visualise the areas where there is need for more bike stations.

Actors

*List the actors that are involved, and their roles in the Use Case*

*1.* City Managers- When selecting the map option for the ‘bicycles’ ,City Managers will be able to see the heatmap based on the data fetched from server.

Triggers and Inputs

*List and describe the triggers that start this use case executing, and the subsequent inputs*

Triggers :

1. User Logs into the application

2. User selects ‘bikes’ from the dashboard view.

3. User clicks on the ‘Generate Heat map’ option

4. Map of Dublin city is displayed, with all the Bike stations information displayed.

5. Clicking on particular area on the map and displaying the relevant information

Inputs :

1. User can filter between the various areas present

2. Based on the area selected the corresponding information can be displayed.

2. Flow of Events

*Using a bulleted list, describe the sequence of steps that should occur (basic flow all going well) in order to complete the use case, and what should happen if there are any conditions that mean the basic flow will not happen as described.*

*NOTE FILLED IN PURELY AS AN EXAMPLE:*

| Basic Flow | | | |
| --- | --- | --- | --- |
| User | | System | |
| 1 | User selects the map option on ‘Bicycle’ menu of the dashboard |  |  |
|  |  | 2 | The system retrieves the most-recent bike data present on the buffer |
|  |  | 3 | The live data is converted to geographical co-ordinates and numbers of bike stations in different  areas |
|  |  | 4 | Heat Map is displayed of the various areas in the Dublin City  With no particular area selected(default) |
| 5 | User selects on a particular area |  |  |
|  |  | 6 | Heat Map of the particular area is displayed with all the necessary information |
| 7 | User selects on a particular bike station |  |  |
|  |  | 8 | Number of bikes and the capacity of the station is displayed |

*<more alternative flows if needed*

3. Special Requirements

*Here is where you indicate if the use case has any special requirements or expectations as to the existence of other systems*

3.1. Platform

…text…

Google Maps can be used to display the data

3.2….

4. Preconditions

*Describe what must be have occurred previously for this use case to execute*

*The user must be in the bike dashboard and also the application has retrieved all the data from the data buffer regarding the bikes*

…text…

5. Postconditions

*Describe the state of the system, or what should be seen to have been achieved, when this use case has completed its processing.*

…text…

*<single use case description end>*