

Independent University, Bangladesh

School of Engineering, Technology & Sciences

**SUMMER 2023**

**CSE307**

***Assignment-2***

**Submitted To**

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**Date of Submission:** 20/7/2023

# **1. Information Gathering Methods**

Information collecting is a key step in the system development process. In order to establish the system scope, identify constraints, gather requirements, and develop the system design, it is crucial to understand the requirements of the system's end users. Gathering information ensures the system is scalable, dependable, and meets user requirements. Developers could wind up building a system that is neither workable nor satisfies users' needs, necessitating expensive and time-consuming redesigns. To ensure that the system is constructed within the proper cost and time restrictions while meeting the needs and expectations of the users, information gathering is thus necessary. For “Mr. BIN” project, we have used this three information gathering methods:

1. User Stories

2. Interviewing

3. Questionnaires.

## **1.1 User Stories**

### **1.1.1 Story 1**

During my childhood, I used to live in a densely populated area. People used to throw trash at a certain place and piles of trash gathered at one place. People walked around that space covering their face with their hands because of the bad odor of trash. Homeowners near the trash pile were helpless as there was no solution to this pile of garbage. No one agreed to throw garbage elsewhere. Trash pile was infested with Flies, rodents and mosquitoes.

Findings:

* A user should get separate trash cans for each home and when the trash can is filled it can be collected by the nearest waste management employee at any time.
* The user must see all the available trash cans near him/her under a single platform in case the user Outside.

**1.1.2 Story 2**

Once a close relative of mine was severely sick. She was suffering from asthma. We went to visit her. She told us that her asthma problem started after she moved to this place. Huge piles of trash were burned behind her house once a week. The smoke was so terrifying that she could not breathe properly. Doctors said that burning trash or open dumping releases harmful pollutants and toxic substances into the air, leading to respiratory issues like asthma, bronchitis, and other respiratory disorders.She moved from that place after one month.

Findings:

* Trash must be sorted properly in a designated place far from locality.
* Trash collectors can get real-time updates on trash bin fill levels, so that they can reduce unnecessary trips to trash cans.

## **1.2 Interviewing**

I've made the decision to set up meetings with some of our stakeholders in order to better understand them. We started talking after I described the features of the app. There had been a mix of open-ended and closed-ended questions. I was able to better grasp their perspectives and how they perceived the difficulties they faced in maintaining records and keeping track of all the data by asking open-ended questions. The questions were arranged using the Pyramid approach. The users' identities and levels of interest in "Mr. BIN" must be determined. In-depth discussions with select users will make it possible to pinpoint their particular demands.

### **1.2.1 Interviewee: User (Homeowner)**

*Questions:*

* How do you currently manage your household trash and recycling? Are there any challenges or pain points in the current system?
* Have you ever experienced missed trash pickups or irregular schedules? How did it impact your daily routine?
* How do you stay informed about changes in trash pickup schedules, recycling guidelines, or any new waste management initiatives in your community?
* Are you conscious of environmental sustainability and recycling practices? How important is it for you to contribute to waste reduction efforts?
* Do you find it easy to access information on how to properly dispose of hazardous waste items in your area?
* How would you feel about having a mobile app that provides real-time updates on the status of your neighborhood's trash pickup, including estimated arrival times?
* Would you be interested in receiving reminders or notifications about upcoming trash pickup days and any special recycling events happening in your community?
* Have you ever faced challenges in finding the nearest recycling centers or drop-off points for specific materials?
* What features would you like to see in a trash management app that would make waste disposal and recycling more convenient and efficient for you?
* How important is it for you to have a platform that educates and raises awareness about sustainable waste management practices?
* Have you encountered any difficulties in reporting issues related to trash management, such as overflowing bins or illegal dumping?
* How much time and effort are you willing to invest in using a trash management app regularly?
* Do you think a trash management app would make a positive impact on your overall waste disposal habits and environmental consciousness?

### **1.2.2 Interviewee: Garbage Truck Driver**

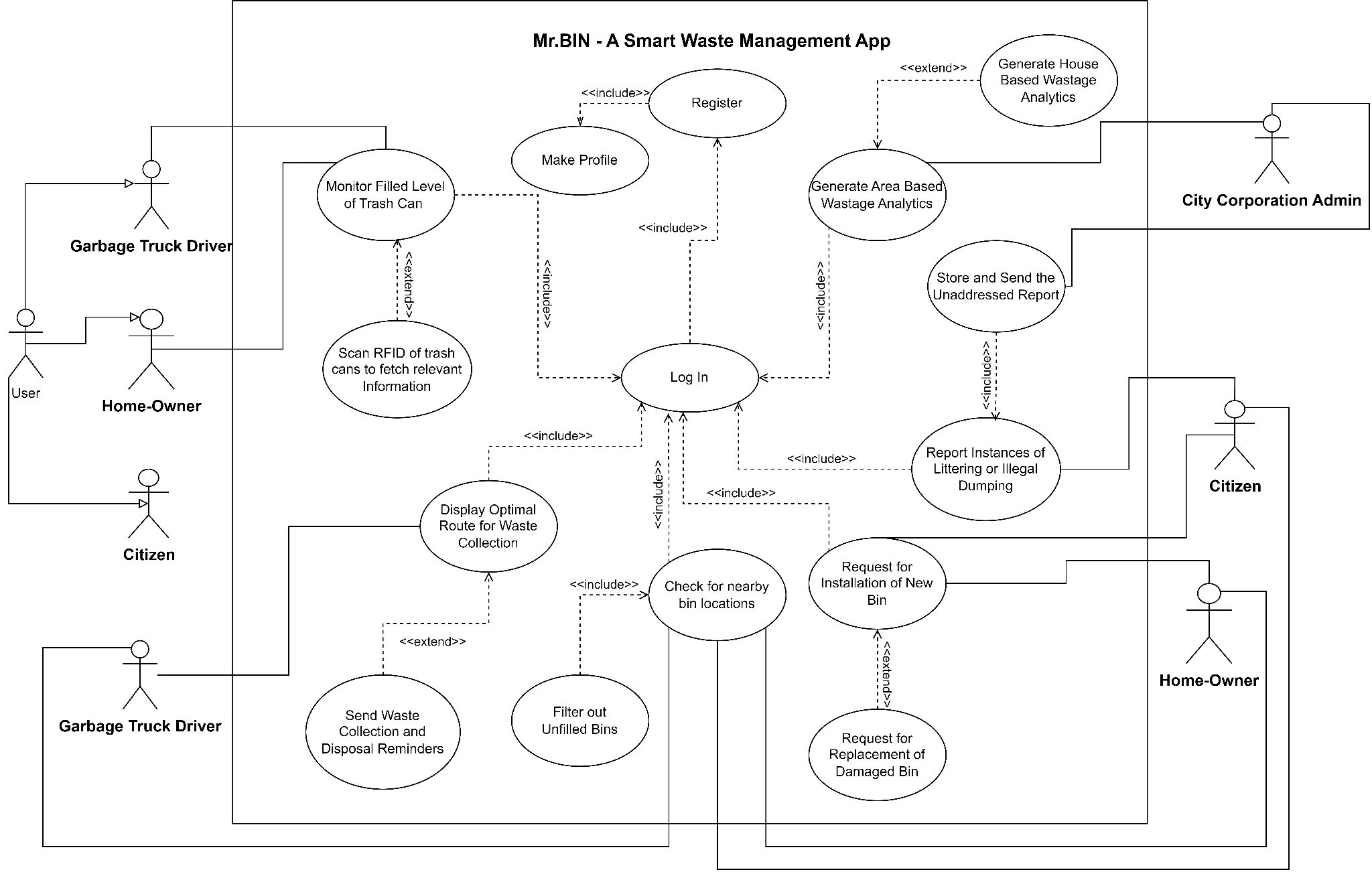
*Questions:*

* How do you currently receive information about the locations and routes for trash and recycling collection?
* What are the common challenges you face in optimizing waste collection routes and schedules? How does this impact the efficiency of your work?
* Are there specific areas or neighborhoods that often experience issues like missed pickups or overflowing bins? How do you handle such situations?
* How important is real-time data on bin fill levels to help you plan and prioritize collection routes more effectively?
* Would you find value in a mobile app that provides live updates on bin fill levels and dynamically adjusts collection routes based on demand?
* How important is it for you to have a platform that allows you to report and track any issues or incidents related to waste management efficiently?
* Are there specific features you would like to see in a trash management app that would make your job easier or more efficient?
* How do you currently communicate with your team and supervisors regarding changes in collection schedules or any urgent waste management matters?
* How receptive do you think your team and colleagues would be to adopting a new trash management app as part of your daily operations?

## **1.3 Questionnaires**

We have asked a few people voluntarily to respond to some questions about trash management facilities on an online survey form that we created on Google Forms. Each person's answers will help us to assess quickly and effortlessly what the user wants. The survey allowed us to learn precise details about the issues they were experiencing.

# **2. Use Case Diagram**



# **3. Normal Scenarios**

### **3.1** **Case 1**

| Use case Name : Monitor Filled level of Trash Can Unique ID: MB-0001 | |
| --- | --- |
| **Area:** User (Garbage Truck Driver) Dashboard,User (Citizen) Dashboard | |
| **Actor(s):** User (HomeOwner),User(Garbage Truck Driver) | |
| **Stakeholders:**,User(Home-owner), Admin | |
| **Description:** Homeowner & Waste Collector can check how much of the trash can is full. | |
| **Triggering Event:** After login with email and password user (Home-Owner) user can get real-time online access to data related to monitored bins, boxes, or containers. | |
| **Trigger Type:** External | |
| **Steps Performed (Main Path):** | **Information Required for Steps:** |
| 1. Participant login using the secure Web server. | 1. User ID, Password |
| 2. Click on the “Check Filled Level of trash Can” button. | 2. Users must be registered in the app and logged in the account. |
| 3. After Checking in, the user can see the percentage of bin filled. | 3. Bin Output Data. |
| **Pre-condition:** Driver need to access the app | |
| **Post-conditions:** Driver must carefully input user Id and password while login. | |
| **Assumption:** HomeOwners are willing to contribute to environmental sustainability without extra effort. | |
| **Success Guarantee:** Will be successful to put out trash and avoid missed collections. | |
| **Minimum Guarantee:** Can download the app and get to know about the app (how things are operating). | |
| **Outstanding Issues:**   * What if homeowners can not use the app properly? * What if the bin sensor somehow gets defected? | |
| **Priority:** High | |
| **Risk:** Medium | |

### **3.2 Case 2**

| Use case Name : Display optimal route for waste collection Unique ID: MB-0002 | |
| --- | --- |
| **Area:** User (Driver) Dashboard | |
| **Actor(s):** User (Driver) | |
| **Stakeholders:** User (Citizen), User(Home-owner), City Corporation Admin | |
| **Description:** Driver can view his optimal route information for waste collection | |
| **Triggering Event:** After login with email and password, driver will be able to view the optimal route automatically while collecting waste using the system. | |
| **Trigger Type:** External | |
| **Steps Performed (Main Path):** | **Information Required for Steps:** |
| 1. Participant login using the secure Web server | 1. User ID, Password |
| 2. Driver chooses the destination for collecting wastage. | 2.User Input Data. |
| 3. A page is sent to the user (driver) containing the information about the optimal route for collecting waste. | 3. Output page. |
| **Pre-condition:** Drivers need to have an account on the app. | |
| **Post-conditions:** Driver will be able to see the optimal route information. | |
| **Assumption:** Drivers will go to collect waste using the system. | |
| **Success Guarantee:** Will be successful to find the optimal route. | |
| **Minimum Guarantee:** Can download the app and get to know about the app (how things are operating). | |
| **Outstanding Issues:**   * What if there are more than one optimal route? * What if there are external activities undetected by the system while finding optimized route? | |
| **Priority:** High | |
| **Risk:** Medium | |

### **3.3 Case 3**

| Use Case Name : Report instances of littering or illegal dumping. Unique ID: MB-0003 | |
| --- | --- |
| **Area:** User (Citizen) Dashboard | |
| **Actor(s):** User (Citizen) | |
| **Stakeholders:** User (Citizen), Garbage Truck Driver, Admin,City Corporation Admin. | |
| **Description:** A user(citizen) will be able to report littering or illegal dumping incidents. | |
| **Triggering Event:** After login with email and password user (Citizen) filters many options such as (pictures, geotag the location, submit a report etc.) and then confirms the report. | |
| **Trigger Type:** External | |
| **Steps Performed (Main Path):** | **Information Required for Steps:** |
| 1. Participant login using the secure Web server | 1. User ID, Password |
| 2. Clicks on “Report littering/Illegal Dumping” button | 2. Users must be registered in the app and logged in the account. |
| 3. Filters many requirements to report littering.  • Add picture  • Geotag the location  • Report of the littering | 3. User GPS location so that it can show the exact location of littering.  3.1 User input data |
| 4. After clicking on Confirm, a notification will be sent to the user. User gets a report submitted confirmation. | 4. User confirmation for reporting the littering. |
| **Pre-condition:** User has already registered and has created a user account. | |
| **Post-conditions:** User has successfully reported illegal dumping. | |
| **Assumption:** User has a browser and a valid user ID and password. | |
| **Success Guarantee:** User has reported the incident directly to the City Corporation, promoting community involvement in maintaining cleanliness. | |
| **Minimum Guarantee:** User was able to login and could go through the reporting policies. | |
| **Outstanding Issues:** What if no measurements are taken even after reporting? | |
| **Priority:** High | |
| **Risk:** Medium | |

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### **3.4 Case 4**

| Use Case Name : Request for Installation of New Bin Unique ID: MB-0004 | |
| --- | --- |
| **Area:** User (Citizen) Dashboard | |
| **Actor(s):** User (Citizen), User (Owner) | |
| **Stakeholders:** User (Citizen), Garbage Truck Driver, City Corporation. | |
| **Description:** A user(citizen) will be able to request for a bin in areas without a bin. | |
| **Triggering Event:** Citizen uses Mr. Bin website, enters userID and password, and clicks the  logon button. | |
| **Trigger Type:** External | |
| **Steps Performed (Main Path):** | **Information Required for Steps:** |
| 1. Participant login using the secure Web server | 1. User ID, Password |
| 2. Clicks on “Request for installation ” button | 2. Users must be registered in the app and logged in the account. |
| 3. Filters many requirements to request for a bin.  • Add picture  • Geotag the location  • Street No, Area Name, City Name, House no (if required). | 3. User GPS location so that it can show the exact location of bin installation.  3.1 User input data |
| 4. After clicking on Confirm, a notification will be sent to the user. User gets a successful request submitted confirmation. | 4. User Input Data. |
| **Pre-condition:** User has already registered and has created a user account. | |
| **Post-conditions:** User has successfully requested for a bin. | |
| **Assumption:** User has a browser and a valid user ID and password. | |
| **Success Guarantee:** User has requested for bin directly to the city corporation, promoting community involvement in maintaining cleanliness. | |
| **Minimum Guarantee:** User was able to login and could go through the reporting policies. | |
| **Outstanding Issues:** What if no bins were installed even after requesting? | |
| **Priority:** High | |
| **Risk:** Medium | |

### **3.5 Case 5**

| Use Case Name: Check for nearby Bin locations. Unique ID: MB-0005 | |
| --- | --- |
| **Area:** User (Citizen) Dashboard | |
| **Actor(s):** User (Citizen), User (Owner), Garbage Truck Driver, | |
| **Stakeholders:** User (Citizen), Garbage Truck Driver, Admin | |
| **Description:** User (Citizen) can check nearby Bin locations. | |
| **Triggering Event:** After login with email and password, user (Citizen) will be able to check nearby bin locations by clicking on the “Nearby Bins” button. | |
| **Trigger Type:** External | |
| **Steps Performed (Main Path):** | **Information Required for Steps:** |
| 1. User login using the secure Web server | 1. User ID, Password |
| 2. Clicks on “Nearby Bins” button | 2. Users must be registered in the app and logged in the account. |
| 3. A new page is sent to the user with the nearby bin locations. | 3. Output page |
| **Pre-condition:** User has already registered and has created a user account. | |
| **Post-conditions:** User successfully gets nearby bin locations. | |
| **Assumption:** User has a browser and a valid user ID and password. | |
| **Success Guarantee:** Users got personalized waste collection and disposal reminders based on their location and local waste management schedule. | |
| **Minimum Guarantee:** User was able to login and could go through the notification. | |
| **Outstanding Issues:** What if use does not dump waste on time even after notification? | |
| **Priority:** High | |
| **Risk:** Medium | |

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### **3.6 Case 6**

| Use Case Name: Generate Area Based Wastage Analytics Unique ID: MB-0006 | |
| --- | --- |
| **Area:** City Corporation Admin Dashboard | |
| **Actor(s):** City Corporation Admin | |
| **Stakeholders:** User (Citizen), Garbage Truck Driver, User(HomeOwner) | |
| **Description:** City Corporation Admin can generate wastage analysis based on waste dumping patterns of different areas. | |
| **Triggering Event:** After login with email and password, user (admin) will be able to show reports of trash dumping timing, how many times the trash is dumped in a specific time. | |
| **Trigger Type:** External | |
| **Steps Performed (Main Path):** | **Information Required for Steps:** |
| 1. User login using the secure Web server | 1. User ID, Password |
| 2. Click on the “View Area based wastage analytics” button. | 2. Users must be registered in the app and logged in the account. |
| 3. A new page is sent to the user with   * the trash amount produced by each area monthly & yearly. * Which trash type is mostly found in the area. * Amount of toxic waste(if any). | 3. Output page |
| **Pre-condition:** User has already registered and has created a user account. | |
| **Post-conditions:** User successfully gets area based wastage analytics.. | |
| **Assumption:** User has a browser and a valid user ID and password. | |
| **Success Guarantee:** User gets a clear understanding of waste infrastructure of different are and can identify and record all waste assets. | |
| **Minimum Guarantee:** User was able to login and could go through the website. | |
| **Outstanding Issues:** What if use does not get correct analytics because of wrong information? | |
| **Priority:** High | |
| **Risk:** Medium | |

# **4.Alternative Scenarios**

### **4.1** **Case 1**

| Use Case Name : Monitor Filled level of Trash Can Unique ID: MB\_ALT-0001 | |
| --- | --- |
| **Area:** User (Citizen) Dashboard | |
| **Actor(s):** User (Citizen) | |
| **Stakeholders:** User (Citizen), Garbage Truck Driver, Admin | |
| **Description:** Homeowner & Waste Collector can check how much of the trash can is full.. | |
| **Triggering Event:** After login with email and password user (Home-Owner) user can get real-time online access to data related to monitored bins, boxes, or containers. | |
| **Trigger Type:** External | |
| **Steps Performed (Main Path):** | **Information Required for Steps:** |
| 1. User login using the secure Web server | 1. User ID, Password |
| 2. Clicks on “Scan RFID” button | 2. Users must be registered in the app and logged in the account. |
| 3. A new page is sent to the user with the details information about the bin such as bin type, bin capacity etc. | 3. Output page |
| **Pre-condition:** Driver need to access the app | |
| **Post-conditions:** Driver must carefully input user Id and password while login. | |
| **Assumption:** HomeOwners are willing to contribute to environmental sustainability without extra effort. | |
| **Success Guarantee:** Will be successful to put out trash and avoid missed collections. | |
| **Minimum Guarantee:** Can download the app and get to know about the app (how things are operating). | |
| **Outstanding Issues:**What if homeowners can not use the app properly? | |
| **Priority:** High | |
| **Risk:** Medium | |

### **4.2 Case 2**

| Use case Name : Display optimal route for waste collection Unique ID: MB\_ALT-0002 | |
| --- | --- |
| **Area:** User (Driver) Dashboard | |
| **Actor(s):** User (Driver) | |
| **Stakeholders:** User (Citizen), User(Home-owner), City Corporation Admin | |
| **Description:** Driver can view his optimal route information for waste collection | |
| **Triggering Event:** After login with email and password, the driver will be able to view the optimal route automatically while collecting waste using the system. | |
| **Trigger Type:** External | |
| **Steps Performed (Main Path):** | **Information Required for Steps:** |
| 1. Participant login using the secure Web server | 1. User ID, Password |
| 2. Driver chooses the destination for collecting wastage. | 2.User Input Data. |
| 3. A page is sent to the user (driver) containing the information about the optimal route for collecting waste. | 3. Output page. |
| 4. In case, the driver does not follow the optimal route, he will get a reminder to collect the bin later in the same day. | 4.Notification Message |
| **Pre-condition:** Drivers need to have an account on the app. | |
| **Post-conditions:** Driver will be able to see the optimal route information. | |
| **Assumption:** Drivers will go to collect waste using the system. | |
| **Success Guarantee:** Will be successful to find the optimal route. | |
| **Minimum Guarantee:** Can download the app and get to know about the app (how things are operating). | |
| **Outstanding Issues:**   * What if there are more than one optimal route? * What if there are external activities undetected by the system while finding an optimized route? | |
| **Priority:** High | |
| **Risk:** Medium | |

### **4.3 Case 3**

| Use Case Name : Report instances of littering or illegal dumping. Unique ID: MB\_AlLT-0003 | |
| --- | --- |
| **Area:** User (Citizen) Dashboard | |
| **Actor(s):** User (Citizen) | |
| **Stakeholders:** User (Citizen), Garbage Truck Driver, Admin,City Corporation Admin. | |
| **Description:** A user(citizen) will be able to report littering or illegal dumping incidents. | |
| **Triggering Event:** After login with email and password user (Citizen) filters many options such as (pictures, geotag the location, submit a report etc.) and then confirms the report. | |
| **Trigger Type:** External | |
| **Steps Performed (Main Path):** | **Information Required for Steps:** |
| 1. Participant login using the secure Web server | 1. User ID, Password |
| 2. Clicks on “Report littering/Illegal Dumping” button | 2. Users must be registered in the app and logged in the account. |
| 3. Filters many requirements to report littering.  • Add picture  • Geotag the location  • Report of the littering | 3. User GPS location so that it can show the exact location of littering.  3.1 User input data |
| 4. After clicking on Confirm, a notification will be sent to the user. User gets a report submitted confirmation. | 4. User confirmation for reporting the littering. |
| 5. If the report is not stored then the unaddressed report will be recorded and be sent later after the authority to be sent is confirmed. |  |
| **Pre-condition:** User has already registered and has created a user account. | |
| **Post-conditions:** User has successfully reported illegal dumping. | |
| **Assumption:** User has a browser and a valid user ID and password. | |
| **Success Guarantee:** User has reported the incident directly to the City Corporation, promoting community involvement in maintaining cleanliness. | |
| **Minimum Guarantee:** User was able to login and could go through the reporting policies. | |
| **Outstanding Issues:** What if no measurements are taken even after reporting? | |
| **Priority:** High | |
| **Risk:** Medium | |

### **4.4 Case 4**

| Use Case Name : Request for Installation of New Bin Unique ID: MB\_ALT-0004 | |
| --- | --- |
| **Area:** User (Citizen) Dashboard | |
| **Actor(s):** User (Citizen) | |
| **Stakeholders:** User (Citizen), Garbage Truck Driver, City Corporation. | |
| **Description:** A user(citizen) will be able to request for a bin in areas without a bin. | |
| **Triggering Event:** Citizen uses Mr. Bin website, enters userID and password, and clicks the  logon button. | |
| **Trigger Type:** External | |
| **Steps Performed (Main Path):** | **Information Required for Steps:** |
| 1. Participant login using the secure Web server | 1. User ID, Password |
| 2. Clicks on “Request for installation ” button | 2. Users must be registered in the app and logged in the account. |
| 3. Clicks on “Request for replacement of damaged bin” button. | 3. User input. |
| 4. Filters many requirements to request for a replacement of damaged bin.  • Add picture  • Geotag the location  • Street No,Area Name, City Name,House no (if required). | 4. User GPS location so that it can show the exact location of bin installation.  4.1 User input data |
| 5. After clicking on Confirm, a notification will be sent to the user. User gets a successful request submitted confirmation. | 5. User Input Data. |
| **Pre-condition:** User has already registered and has created a user account. | |
| **Post-conditions:** User has successfully requested for a bin. | |
| **Assumption:** User has a browser and a valid user ID and password. | |
| **Success Guarantee:** User has requested for bin directly to the city corporation, promoting community involvement in maintaining cleanliness. | |
| **Minimum Guarantee:** User was able to login and could go through the reporting policies. | |
| **Outstanding Issues:** What if no bins were installed even after requesting? | |
| **Priority:** High | |
| **Risk:** Medium | |

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### **4.5 Case 5**

| Use Case Name: Check for nearby Bin locations. Unique ID: MB\_ALT-0005 | |
| --- | --- |
| **Area:** User (Citizen) Dashboard | |
| **Actor(s):** User (Citizen) | |
| **Stakeholders:** User (Citizen), Garbage Truck Driver, Admin | |
| **Description:** User (Citizen) can check nearby Bin locations. | |
| **Triggering Event:** After login with email and password, user (Citizen) will be able to check nearby bin locations by clicking on the “Nearby Bins” button. | |
| **Trigger Type:** External | |
| **Steps Performed (Main Path):** | **Information Required for Steps:** |
| 1. User login using the secure Web server | 1. User ID, Password |
| 2. Clicks on “Nearby Bins” button | 2. Users must be registered in the app and logged in the account. |
| 3. A new page is sent to the user with the nearby bin locations. | 3. Output page |
| 4. User can filter out and see only those bins that are not filled up | 4. User Input, Output page |
| **Pre-condition:** User has already registered and has created a user account. | |
| **Post-conditions:** User successfully gets nearby bin locations. | |
| **Assumption:** User has a browser and a valid user ID and password. | |
| **Success Guarantee:** Users got personalized waste collection and disposal reminders based on their location and local waste management schedule. | |
| **Minimum Guarantee:** User was able to login and could go through the notification. | |
| **Outstanding Issues:** What if use does not dump waste on time even after notification? | |
| **Priority:** High | |
| **Risk:** Medium | |

### **4.6 Case 6**

| Use Case Name: Generate area based wastage analytics Unique ID: MB\_ALT-1989 | |
| --- | --- |
| **Area:** City Corporation Admin Dashboard | |
| **Actor(s):** City Corporation Admin | |
| **Stakeholders:** User (Citizen), Garbage Truck Driver, User(HomeOwner) | |
| **Description:** City Corporation Admin can generate wastage analysis based on waste dumping patterns of different areas. | |
| **Triggering Event:** After login with email and password, user (admin) will be able to show reports of trash dumping timing, how many times the trash is dumped in a specific time. | |
| **Trigger Type:** External | |
| **Steps Performed (Main Path):** | **Information Required for Steps:** |
| 1. User login using the secure Web server | 1. User ID, Password |
| 2. Click on the “View House based wastage analytics” button. | 2. Users must be registered in the app and logged in the account. |
| 3. A new page is sent to the user with   * the trash amount produced by each house monthly & yearly. * Which trash type is mostly found in the area. * Amount of toxic waste (if any). | 3. Output page |
| **Pre-condition:** User has already registered and has created a user account. | |
| **Post-conditions:** User successfully gets area based wastage analytics.. | |
| **Assumption:** User has a browser and a valid user ID and password. | |
| **Success Guarantee:** User gets a clear understanding of waste infrastructure of different are and can identify and record all waste assets. | |
| **Minimum Guarantee:** User was able to login and could go through the website. | |
| **Outstanding Issues:** What if use does not get correct analytics because of wrong information? | |
| **Priority:** High | |
| **Risk:** Medium | |

**5.Functional Requirements**

* Users will be able to create accounts and log in securely to access the app's features. Different user roles (homeowners, waste management employees, city officials, etc.) should be supported with appropriate permissions.
* The app will display a personalized trash pickup schedule for each user based on their location and designated collection days.
* Users will receive timely reminders and notifications about upcoming trash pickups.
* The app will integrate with sensors or other data sources to provide real-time information on the fill levels of trash and recycling bins. Waste management employees should be able to view this data to optimize collection routes.
* The app will offer comprehensive guidelines on how to properly dispose of various types of waste, including hazardous materials. Educational resources, tips, and best practices for waste reduction and recycling should be provided to users.
* Users will be able to report issues such as missed trash pickups, overflowing bins, or illegal dumping through the app. Waste management employees should have access to a dashboard to track and address reported issues efficiently.
* An interactive map will display the locations of trash and recycling bins, drop-off points, and recycling centers in the area. The app will optimize waste collection routes based on real-time data, traffic conditions, and fill levels to reduce fuel consumption and increase efficiency.
* The app will facilitate community engagement by providing information on clean-up drives, recycling events, and educational workshops. Users well be able to participate in such initiatives through the app.
* If the app offers premium features or services, it should support secure payment processing and provide users with detailed billing information.
* The app should be designed with accessibility features to accommodate users with disabilities.
* The app should have limited offline functionality to allow users to access essential information even in areas with poor network coverage.

# **6. Non-Functional Requirements**

* The app database will store all the data and all saved data will be safe and secure.
* The app will be functional 24/7 so that anyone from anywhere can use this app anytime they want.
* The app will adhere to strict data privacy and security standards to protect user information and prevent unauthorized access.
* No cookies or unnecessary advertisements.
* There will be two language options (Bangla, English). Users can set language as per their needs.