

**AMERICAN INTERNATIONAL UNIVERSITY-BANGLADESH (AIUB)**

**Summer 2018-2019**

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***SOFTWARE REQUIREMENT ENGINEERING***

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**1. Introduction**

* 1. **PURPOSE**

The purpose of this document is to build a systematic system to collect environmental pollutants.

* 1. **DOCUMENTING CONVENTIONS**

This document uses the following conventions.

|  |  |
| --- | --- |
| **DB** | Database |
| **GCS** | Garbage Collection System |
| **ER** | Entity Relationship |

* 1. **PROJECT SCOPE**

The purpose of garbage collection system is to gather toxic pollutants in an easy systematic way. This system will register each of the user who stores pollutants in the system database and will be rewarded systematically. This reward will not only encourage the users to collect pollutants but will also provide earning opportunities for the locals as they can also register themselves. Furthermore, The tourist spots and natural attraction sites are the primary targets here. Booths and other installments will be placed on those spots for operation. Moreover, the waste materials are intended to be recycled. Above all, we hope to provide a comfortable user experience and keep the environment cleaner for the betterment of all of us.

* 1. **REFERENCES**

1)

<https://economictimes.indiatimes.com/industry/transportation/railways/now-recycle-plastic-bottle-at-railway-station-and-get-paytm-cashback/articleshow/64490452.cms?fbclid=IwAR3q4e6qeehHfcdutOwl0kTv_wIm8N6el4EHSnnjwN9st6zAv3be04pLD_c>

2)

<https://www.youtube.com/watch?v=lukUX4VGVWI&fbclid=IwAR3q4e6qeehHfcdutOwl0kTv_wIm8N6el4EHSnnjwN9st6zAv3be04pLD_c>

**2. Overall Description**

**2.1 Productive perspective**

The main objects of our project is removing the garbage and clean the tourist areas. Our product is mainly designed for three different profiles of users:

• Visitors who will be the main profiles of our project. They will mainly help us more to clean the areas by submit their used plastic bottles, bags, packets.

• The local people also are a very useful profile of our system. They also can contribute in our project to save the nature.

• The third most profiles is our volunteers. They will work the most of it. They will collect the garbage’s by themselves. They will registered the people to our system.

**2.2 User Classes and characteristics**

Like every projects our system should cater to the following user classes:

**• Admin:** They will mainly maintain the system. If any changing, modify needed they will do that. Our administration panel will also can add, remove users. They will be responsible for the security of the system also. In one word admin is the main of this system.

**• Moderator:** They will mainly update the reward points, verify users, reward given or update etc. They will also help the users by chatting, mailing with them.

**• User:** The another important user class of our system. They can use the system for registration. They can use the reward point. They can view their profile. They can modify their account details.

**2.3 Operating Environment**

Our system will be implemented in Python 1.52. It should therefore run on any platform to which Python has been ported. We will avoid the use of platform-specific designs or code in doing so. However, the primary operating systems we will be using are Linux (with a kernel around 2.2.10 or higher) and Microsoft Windows. While our software will be designed to interface with configuration management systems, the configuration management software used in this implementation will be CVS, the Concurrent Versioning System (an open-source version control software package supporting local and remote repositories).

**2.4 Design and implementation constraints**

As mentioned, the implementation language will by Python, based off the Python 1.52 free downloadable. The issues will use XML as a data format. These constraints are in place because our software will be submitted as an entry in the Software Carpentry design competition, which mandates the use of Python 1.52; the use of XML is mandated to prompt an exploration of XML as a technology (in addition to allowing the use of XML tools and existing libraries in development). It should *not* rely on any particular command line implementation, such as a particular unix shell, etc.

**3. System Features**

**3.1 Description of feature**

**F-01: User Registration for Everyone (Software)**

**Priority:** Essential

**Effort:** Days

**Risk:** Safe

**Functional Area:** Administration

**Description:** Visitors can come to the booth or visit website and register themselves. They must provide the following information:

• username

• email address (twich to catch typos)

• real name

Precise Details:

• username must be unique (not euqal to any other existing user name)

• username must be of the form and is not case sensitive

• email address must be of the form

• both entries of the email address must match

• email address will be verified by sending the user’s initial password to that corresponding email.

• real name must not be empty

• leading and trailing spaces are stripped from all fields

**Notes:** When they complete the registration, they will be given a user id and password to their email account via mail from the system automatically. They can use this to log into the system.

**F-02: User Registration for Locals Only (Manually)**

**Priority:** Optional

**Effort:** Days

**Risk:** Safe

**Functional Area:** Administration

**Description:** Local people of the selected areas can register themselves with us. It is not mandatory for them. In terms of registration though, they need to provide the following information:

• full name

• address

• phone number (if has any)

Precise Details:

• address should be valid

• phone number needed to be real (must be checked)

**Notes:** When they register with us their details will remain safe with us in our local registry books.

**F-03: Reward for User**

**Priority:** Expected

**Effort:** Days

**Risk:** Safe

**Functional area:** Administration

**Description:** Visitor can collect their reward with instant cash or through reward point in their account. But they must match the following minimum criteria:

• must be only used plastic bottles, bags and packets

• must be regestered users

Precise Details:

• reward will be given by using the reward calculator

• a user can either get instant cash or points

• a user can avail this offer only once in a day

• only a regestered user can avail points (software regestration)

**Notes:** Any instant cash or reward will be awarded by our admins and moderator only. Points will be rewarded to the accounts by their id.

**F-04: Using Points**

**Priority:** Optional

**Effort:** Days

**Risk:** Safe

**Functional area:** user

**Description:** User can use their points, as discounts, to purchase things. But they should maintain these followings:

• minimum 1000 points need to be use

• only selected vendors can be used by this points

Precious Details:

• we have some selected shops, hotels with us where user can enjoy their points

**Notes:** User can use those points anytime anywhere if they meet the requirments.

**3.2 Functional requirements**

1. this system shall keep in the information of the users and modulator.

2. first we shall make a booth to the tourist spot. In the booth there will be a huge Environmentally Friendly Dustbin or Eco-Friendly Dustbin, which will collects all the garbages like un-use plastic bottles, bags, packates. A weight machine which can measure the weight of garbages.

3. there shall be a volunture who can try to to help the process to others.

4. there is a software system for records all of it and users shall register this system .

5. For registration user has to complete the registration step with their name,id,address,gender and phone number with the system and system shall store their registration.

6. user shall registar with the system by giving their asked information and system will generate an unique code for them.

5. there shall be a reward point system method for users .

8. users cash back disscount offer option also shall be generate there.

9. By the points he/she can enjoy discounts at selected restaurents, hotels, shops. If anyone wish to avail the cash then at that moment our volunteer will give him/her the reward.

10. system will maintain the monthly deposit of the users.

11. system will have an employee profile list with all their details.

12.employee profile should be categorized by the system.

13. system will keep in the joining detail of the users and employee.

14. system will count the number of registration also.

**3.3 User stories**

**Admins:**

* Will maintain the system.
* They can change and modify information of users.
* Will keep the system secure.

**Moderator:**

* They will update reward points.
* They will verify the users once accounts are created.
* They will keep track of rewards given.

**User/Tourists:**

* They can submit the used bottles to our booth so that he can avail reward.
* They can install app in their devices.
* They can use the reward points for online buying and bookings.
* They can view their profile to check reward points.
* They can mail the moderators if help is needed.