# Software Requirements Specification

## for

# EasyRecycle

**Version 1.0 approved**

**Prepared by oshipka**

**14.03.2021**

# Table of Contents

# Revision History

| Name | Date | Reason For Changes | Version |
|------|------|--------------------|---------|
| oshipka | 14.03 | Initial draft | 1.0 |
|  |  |  |  |

# 1. Introduction

## 1.1 Purpose

This document is describing requirements for an EasyRecycle website that will contain recycling guidelines.

## 1.2 Document Conventions

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## 1.3 Intended Audience and Reading Suggestions

This document is intended to describe main requirements of the EasyRecycle project. It will be read by the developers of said project and by anyone else who will have access to this document. The document contains overall description of all features that are to be implemented, followed by detailed look at each of them separately. This document is to be read as is, from start to the end, as it is written.

## 1.4 Project Scope

Relevant information is available in Vision and Scope document available in the same directory as this document.

## 1.5 References

Additional information is available in the form of diagrams in the "Diagrams/" directory located in the same directory as this document.

# 2. Overall Description

## 2.1 Product Perspective

EasyRecycle is supposed to be a new, self-contained product.

## 2.2 Product Features

User will be able to get information on how to prepare items for recycling, and where to take them to be recycled. The spots will be marked on a map or listed on a different page, sorted by the type of waste that is recycled. At the collection spot a collector will be able to scan a qr-code generated on user's page and add points to user's account.
A page can be dedicated to display top users by points collected in last week/month/all time top.

Another type of user, a commercial user, will be able to place requests for the waste to be collected from their business to be properly recycled.

## 2.3  User Classes and Characteristics

- Visitor – most of users will be of this class. They will be able to view all of the instructions and rankings. They will be able to register and will become either a User or a Commercial User
- User – second class of users by expected amount of users associated with this class. Has access to everything that a Visitor can view. Has an account page, where he can see the amount of points he had accumulated, and view a history of received points. Has a QR-code associated with account and can be awarded points by Garbage Collector
- Commercial User – not many users are expected to be of this class. Has access to everything that a Visitor can view. Can access a Place Request Page. Has an account page, where he can view a history of placed requests, and their status.
- Garbage Collector – the least users are expected to be of this class. Can be created only by an admin. Has access to everything that a Visitor can view. Can scan QR-codes of a User and award them points. Each Collector is associated with a garbage collection location, so that place and time the code was scanned will be noted down in User's statistics.

## 2.4  Operating Environment

The web-application will be hosted on Heroku, and all of the components will be accessible on that platform.

## 2.5  Design and Implementation Constraints

Limitations exist regarding time allocated for the project development and the amount of developers that will work on this project.

## 2.6  User Documentation

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## 2.7  Assumptions and Dependencies

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# 3.  System Features

## 3.1  Recycling instructions

### 3.1.1  Description and Priority

There will be a page allocated to the instructions on how to prepare plastic/paper/etc. for the recycling.

Medium priority.

### 3.1.2 Stimulus/Response Sequences

User wants to retrieve information -> User receives information

### 3.1.3 Functional Requirements

*3.1.3.1 Must have a page with descriptions on each type of waste*

*3.1.3.2 Must be accessible by each type of user*

*3.1.3.3 Must have a user-friendly UI*

## 3.2 Location information

### 3.2.1 Description and Priority

There will be a page allocated to the information on where items can be turned in in exchange for points. Information must include: type of item that is collected, location where item can be turned in, time window when item can be turned in.
Medium priority.

### 3.2.2 Stimulus/Response Sequences

User wants to retrieve information -> User receives information

### 3.2.3 Functional Requirements

*3.2.3.1 Must have a page with information, grouped by the type of item that is collected.*

*3.2.3.2 Must be accessible by each type of user*

*3.2.3.3 Must have a user-friendly UI*

## 3.3 User account and statistics

### 3.3.1 Description and Priority

User account must contain statistics of points that user collected over a period of time. On this page user must be able to access a QR-code which will allow Garbage collector to add points for the items that user turned in. Also the total amount of points collected must be displayed on user's page
High priority.

### 3.3.2 Stimulus/Response Sequences

User wants to retrieve QR-code -> User opens a code
User wants to see his statistics -> User opens his statistics
User wants to see total points collected -> User opens his account page

### 3.3.3 Functional Requirements

*3.3.3.1   Must have a settings page*

*3.3.3.2   Must have a QR-code associated with a user*

*3.3.3.3   Must have a total collected points displayed on account page*

*3.3.3.4   Must display itemized list of all transactions of when points were added to the account*

*3.3.3.5   Must have an option to delete account*

## 3.4  Commercial user account and requests history

### 3.4.1  Description and Priority

On account page must be displayed a history of past requests and request statuses. Low priority.

### 3.4.2  Stimulus/Response Sequences

User wants to view request status -> User opens request history
User wants to view request history -> User opens request history

### 3.4.3  Functional Requirements

*3.4.3.1   Must have list of past requests*

*3.4.3.2   Requests list must contain date and status of request*

*3.4.3.3   Must have a user-friendly UI*

*3.4.3.4   Must have an option to delete an account*

## 3.5  Garbage collector interface

### 3.5.1  Description and Priority

Garbage collector will be able to edit information about his collection point. This user type must be able to scan User's QR-code and enter information what items did User bring and how many points were awarded for those items.
High priority.

### 3.5.2  Stimulus/Response Sequences

User wants to scan QR-code -> User opens scanner
User wants to edit information -> User opens editor
User wants to enter collection information -> After scanning the code user is able to enter the information

### 3.5.3  Functional Requirements

*3.5.3.1* ***Must have a page to scan QR-code***

*3.5.3.2* ***Scan page must be followed by the form that will add necessary information to the user associated with the scanned QR-code***

*3.5.3.3* ***Must have a user-friendly UI***

*3.5.3.4* ***Must have a page to view current collection location information***

*3.5.3.5* ***Must have a page to edit collection location information***

## 3.6 Rankings

### 3.6.1 Description and Priority

There must be a page where all User's points are ranked by the most points collected by each user. This page must contain tabs for rankings in the last 7 days/30 days/ all time
Low priority.

### 3.6.2 Stimulus/Response Sequences

User wants to see rankings -> User opens rankings page

### 3.6.3 Functional Requirements

*3.6.3.1* ***Must have tabs for ranks***

*3.6.3.2* ***Must be accessible by each type of user***

*3.6.3.3* ***Must have a user-friendly UI***

*3.6.3.4* ***Must update according to acquired points***

*3.6.3.5* ***Must display limited amount of users (to be added)***

## 3.7 Requests information page

### 3.7.1 Description and Priority

This page must contain information on services that can collect waste from commercial users. Signed in commercial users must be able to place requests on this page.
Low priority.

### 3.7.2 Stimulus/Response Sequences

Visitors and higher want to view information about services -> user opens information page
Commercial user wants to place request -> user opens place request page

### 3.7.3 Functional Requirements

*3.7.3.1    Must have a page with of services*

*3.7.3.2    Must be accessible by each type of user*

*3.7.3.3    Must have a user-friendly UI*

*3.7.3.4    Commercial users must be able to place request*

## 3.8  Registration and login

### 3.8.1  Description and Priority

Visitors must be able to create accounts and sign in using their credentials. High priority.

### 3.8.2  Stimulus/Response Sequences

User wants to register account -> User inputs required information
User wants to sign into his account -> User inputs his credentials

### 3.8.3  Functional Requirements

*3.8.3.1    Must have a page with descriptions on each type of waste*

*3.8.3.2    Must be accessible by visitors*

*3.8.3.3    Must have a user-friendly UI*

## 3.9  User Interfaces

Mockups will be available in Mockups/ folder

## 3.10  Hardware Interfaces

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## 3.11  Software Interfaces

An API will be used to connect backend and frontend.

## 3.12  Communications Interfaces

# 4.  Other Nonfunctional Requirements

## 4.1  Performance Requirements

Each page should take no more than two seconds to completely load.

## 4.2  Safety Requirements

Access to information edit pages should be limited to Collector users
Request placement users must be available only to Commercial Users

## 4.3  Security Requirements

Users will be able to create and log into their accounts. Each account will have a certain role connected to them, which will grant them an access to specific features of the system.

## 4.4  Software Quality Attributes

Features of the project must be tested according to the Vision&Scope document

# 5.  Other Requirements

*TBD*