

Comenius University, Bratislava
Faculty of Mathematics, Physics and Informatics

Forest Dump

Web design Technology and Methodology

2018/2019

Patrícia Marmanová
Dana Škorvánková
Michal Brcko
Radoslav Hečko

Content

1	Goals of the application.....	3
1.1	Target audience	3
1.2	Similar applications.....	3
1.2.1	Trash Out.....	3
1.2.2	"Na skládky nie sme krátky"	3
1.2.3	Applications with GPS location	4
2	User roles	5
2.1	Reporter	5
2.2	Disposal manager	5
2.3	Personas and scenarios	5
3	Requirements specification	7
3.1	Functional requirements.....	7
3.1.1	Reporter.....	7
3.1.2	Disposal manager	7
4	Schedule.....	8
5	Team members and their responsibilities	9
6	Budget.....	10

1 Goals of the application

The goal of the project is to create a web application, which enables its users to report an occurrence and the location of the illegal dump. To the people responsible for their disposal, it provides the possibility to register the appearance of the dumps and mark the current state of their disposal.

1.1 Target audience

The target audience consists of all the people who care about the environment and actively use web applications and other features of the digital age, willing to contribute to the improvement of the whole society. The application is intended for use by the city administration and people responsible for the illegal dump disposal.

1.2 Similar applications

In this section, we are going through a number of similar applications, that have a purpose close to the one of this very project.

1.2.1 Trash Out

Trash Out is a mobile application very similar to our application with its functionality. Users can report illegal dumps, participate at their disposal as volunteers, and they have access to various environmentally oriented articles.

The main difference is the fact, that *Trash Out* is available only for the mobile devices, whereas a goal of our project is to create a web application. In case of an ideal implementation for the mobile devices, it is easier for people to use the website, instead of downloading an application.

The other thing is, the application lacks the user role of the person responsible for the dump disposal. Thus, people are not informed about the state of the disposal process of the dumps.

[\[1\]](#)

1.2.2 “Na skládky nie sme krátke”

„*Na skládky nie sme krátke*“ is a project of the civic association named *TATRY*, which purpose is to increase the illegal dump consciousness. However, the website works only as the information platform for people interested in the environment issues. [\[2\]](#)

1.2.3 Applications with GPS location

Other applications with similar functionality are the ones, where users share their GPS location or other GPS spots on the map. These applications most frequently use the Google Maps API.

2 User roles

In our application, we distinguish two main user roles. One is the role the reporter, and the other one is the role of the disposal manager.

2.1 Reporter

This user role reports the discovered illegal dumps or urges the dumps that have already been reported. There is an option to browse the map containing the reported dumps, as well as to report the new ones found. The reporter can upload a photo of the dump, a short comment, its location and other information concerning further description of the dump, such as its range and materials. This user role does not require logging into the system.

2.2 Disposal manager

The role of the disposal manager is superior to the role of the reporter. This user role has all the capabilities of the reporter role, and aside of them, the manager can list all the dumps in his assigned area, ordered by priority and mark the stage of their disposal process. This user role requires logging into the system.

2.3 Personas and scenarios

To illustrate the target audience, we have created several personas for the representation.

Joseph, businessman

- Joseph is 45 years old and he works as a businessman in the IT sphere. He is a director of a company consisting of 27 workers.
- He has no troubles working with the internet and the modern technologies. He keeps his smartphone always with him.
- Joseph likes to go for a walk in the woods and often combines it with collecting mushrooms. He always takes away the garbage he found on his way in the woods.
- He is annoyed by the increasing number of illegal garbage dumps in the area and the inactivity of the city already for a long time.

Situation:

During one of his walks, Joseph has found an illegal garbage dump at the edge of the forest. It contained several car tires and a fridge.

User scenario in the application:

Since Joseph decided to act and do something about the dump, he took out his smartphone and googled the easier option for reporting the illegal dump right at the place. In Forest Dump web application, he can mark the position of the dump right away, by sharing his GPS location. Thus, he adds a new dump record and fills in the parameters. Now he is able to watch the whole process of its disposal right from his home.

Lubica, worker at the city administration office in Pezinok

- Lubica is 58 years old and has worked at the city administration office in Pezinok for her whole life. Her job includes mainly working with computer, especially in Excel.
- Lubica has three adult children and two cats. She adores animals and nature in general.
- She is organized and always willing to make a coffee for her boss.
- At work, she has been commissioned to monitor and manage the disposal of the illegal garbage dumps in the district.

Situation:

Within the scope of her work, she needs to categorize the illegal dumps in the area and commission the people responsible for the disposal to clean up the most relevant ones.

User scenario in the application:

Lubica simply opens the web application in the browser and logs into her disposal manager account. The application automatically orders the reported garbage dumps in her district by their relevance – range, number of reports, types of materials and so on. Lubica will take care of the first listed dump and assign it to a disposal team to clean it up. She will also set the state of the dump in the application as *“in the disposal process”*.

3 Requirements specification

The web application will provide the option to report the occurrence and location of the illegal garbage dumps, to attach the further description of the garbage (scope, materials, rate of the environment pollution) and a photo of the place. This way, the competent authorities, responsible for the disposal of these dumps, will be informed. These “disposal managers” can sign up and log into the application. Within their own accounts, they are able to update the stage of the disposal process of each particular dump in their assigned area.

3.1 Functional requirements

In this section, we are going to present the requirements concerning the functionality of the application, divided by the user roles.

3.1.1 Reporter

- Report the illegal dump
To a common user, the application enables to report the location and further information about the discovered illegal garbage dump, such as the scope of the dump, the prevailing materials, and potentially dangerous substances. He has also an option to attach a photo proof to the report.
- List and filter the current and disposed dumps
Users can browse all the records of the reported dumps or filter them by their current state (pending, in the disposal process, disposed etc.).

3.1.2 Disposal manager

- Sign up
The disposal manager has an option to register and thus create his own account, through which he can access the disposal process management of the reported garbage dumps.
- Log in
The disposal manager can log into the system using his email address (or alternatively his user name) and password entered during the registration.
- Update the stage of the dump disposal process
The application enables the disposal manager to briefly describe the progress in the dump disposal process, set the state of the garbage dump, or even attach a photo of the current state of the disposal process.

4 Schedule

Working schedule contains a table of tasks (Table 1), that are necessary in the process of designing and developing the application. Next to each of the tasks, there is the estimated date by which the task should be finished.

Task	Date
Scheme of the information architecture of the application	15.10.2018
Graphical user interface proposal	22.10.2018
Scheme of the database model	29.10.2018
Application prototype	19.11.2018
Programming of the backend part of the application	26.11.2018
Programming of the frontend part of the application	03.12.2018
Testing	10.12.2018
Putting the application into operation (deployment)	17.12.2018

Table 1: Description of the particular tasks and estimated due dates

5 Team members and their responsibilities

All the team members work on the tasks that were assigned to them after mutual agreement at a team meeting. Every aspect of the application is first consulted and decided by the whole team. The particular tasks assigned for the team members are showed in Table 2.

Team member	Tasks
Michal Brcko	Frontend Angular Google maps API Photo upload, gallery
Radoslav Hečko	Frontend Angular Firestore backend - authentication, realization of the database
Patrícia Marmanová	Frontend Angular Design proposal Scheme of the database structure - database model
Dana Škorvánková	Frontend Angular Responsive design Scheme of the database structure - database model

Table 2: Team members and their tasks

6 Budget

The estimated budget for the realization of the application is shown in Table 3.

Task	Price
The proposal of architecture and design of the application	150€
Implementation	750€
Domain	8,90€/year
Webhosting	3,89€/month

Table 3: Estimated budget for the application