



# CmpE 451 - Final Report

Karpuz - Freelancer Platform

Group 5

January 7, 2019

# Contents

<b>0 Accessibility</b>	<b>2</b>
<b>1 Executive Summary</b>	<b>2</b>
1.1 Project Introduction . . . . .	2
1.2 Work Done for Final Demo . . . . .	2
<b>2 List and Status of Deliverables</b>	<b>3</b>
<b>3 Evaluation of the Status of Deliverables and Their Impact on Plan</b>	<b>3</b>
<b>4 Coding Work</b>	<b>4</b>
<b>5 Requirements</b>	<b>5</b>
5.1 Glossary . . . . .	5
5.2 Functional Requirements . . . . .	6
5.2.1 User requirements . . . . .	6
5.2.2 System requirements . . . . .	7
5.3 Non-functional Requirements . . . . .	8
<b>6 Design Documents</b>	<b>10</b>
<b>7 User &amp; System Manuals</b>	<b>10</b>
7.1 System Manuals . . . . .	10
7.1.1 Web & Backend . . . . .	10
7.1.1.1 Prerequisites . . . . .	10
7.1.1.2 Project Setup . . . . .	10
7.1.2 Android . . . . .	10
7.2 User Manuals . . . . .	11
7.2.1 Web . . . . .	11
7.2.2 Android . . . . .	21
<b>8 Project Plan</b>	<b>25</b>
<b>9 GitHub (Issues, PR's, Projects and Final Report)</b>	<b>26</b>
<b>10 Evaluation of Tools and Management</b>	<b>26</b>
10.1 Tools . . . . .	26
10.1.1 Deployment . . . . .	26
10.1.2 Testing . . . . .	26
10.1.3 API's . . . . .	26
10.2 Project Management . . . . .	26
10.2.1 Meetings . . . . .	26
10.2.2 Communication . . . . .	26

# 0 Accessibility

You can reach our Web Application from [here](#). You can reach our Android Application APK from [here](#).

## 1 Executive Summary

### 1.1 Project Introduction

Karpuz is a freelance job platform, where anyone can sign up as a freelancer or contractor, and post job listing and/or apply to them. Contractors (also referred as Clients) can put job information, such as the total pay of the job, job description, assets needed for the task, deadline, and so on. Freelancers have an open platform for showing off their job portfolio and accept jobs. Karpuz's intelligent recommendation engine (which is just a keyword matcher in current plan) will suggest freelancers to clients and vice versa. Karpuz is a platform not just for software developers, but also for UI/UX designers and anyone doing a job related to software lifecycle.

### 1.2 Work Done for Final Demo

For our Final Milestone, our goals were:

- Web: Text Annotation to Project Description
- Web: Semantic Tags to Projects and Portfolios
- Web: Recommendation freelancers and projects according to semantic tag
- Web: Search projects with text according to projects' title and description
- Web: Guest User Projects and Project Page and Search Projects
- Web: Portfolio import from LinkedIn Account for logged in users
- Android: Implement project bidding
- Android: Implement profile editing
- Android: Implement profile picture upload
- Android: Implement project editing
- Android: Implement project attachment upload

We can proudly say we hit all our Final milestone goals for frontend/web. Unfortunately, Android took a hit and we weren't able to get any work done for it between Milestone 2 and Final Milestone.

## 2 List and Status of Deliverables

Name	Delivery Date	Delivered
Web: Text Annotation to Project Description	January 2, 2019	✓
Web: Semantic Tags to Projects and Portfolios	January 2, 2019	✓
Web: Recommendation freelancers and projects according to semantic tag	January 2, 2019	✓
Web: Search projects with text according to projects' title and description	January 2, 2019	✓
Web: Projects and Project Page and Search Projects for Guest Users	January 2, 2019	✓
Web: Portfolio import from LinkedIn Account for logged in users	January 2, 2019	✓
Android: Implement project bidding	January 2, 2019	✗
Android: Implement profile editing	January 2, 2019	✗
Android: Implement profile picture upload	January 2, 2019	✗
Android: Implement project editing	January 2, 2019	✗
Android: Implement project attachment upload	January 2, 2019	✗

Table 1: List All deliverables and Their Status

## 3 Evaluation of the Status of Deliverables and Their Impact on Plan

We were able to deliver everything planned for final milestone for frontend, and we are proud for it. We think it looks way better than minimum usable level and works mostly without bugs. We have the feeling that if we launched it, it would handle real world scenarios well enough.

Unfortunately we can't state the same things for Android part. It could not catch up to frontend and it's still missing a lot of features that's necessary for the usage of our platform. It looks and works good but the functionality is not enough.

## 4 Coding Work

Team Member	Contributions
Enis Simsar	Setup Git butler for auto merging from develop branch to master branch. Initialize text annotation in Frontend and complete the implementation of projects' descriptions annotation. Implement the functionality of adding semantic tags to users' portfolios and projects. Implement searching projects according to text query. Implement showing projects, project and searching project pages for Guest Users. Implement LinkedIn connection for User Portfolio item. Implement unit tests for projects and bids flow.
Bahadir Öncel	Check if Android project still works with updated backend. Tidy up Github repo for final. Prepare for final milestone demo presentation. Present final milestone demo.
Alp Kaan Usen	Modify the text search endpoint to match the words even if the query does not match the whole word. Create the annotation models and implement GET and POST endpoints for annotation.
Muhammed Emin Güre	Create scripts to scrape example data from freelancer.com and create a script to import the scraped data into the production using our own api. Export the data from the system and prepare a manual to import it afterwards as an example database. Multiple bug fixes on endpoints. Add threading to improve API requests that is related to tagging system. Create unit test base and unit tests for user endpoints. Contribute to annotation system to make it complaint with W3C standards.
Muhammed Emin Ayar	Create semantic tag model, implement endpoints to relate tags with their semantic meanings using WikiData, reconstruct project, user and portfolio models so that they include semantic tags. Implement tag addition, deletion, and getter endpoints to utilize tags. Research various frameworks, pre-trained models to implement recommendation engine which includes NLTK, WordNET, some sklearn models and ConceptNET. Try various pre-trained models's cosine similarities to see how they perform on technical tags. Implement recommendation endpoints for both project and user. Work on recommendation engine optimizations (try to reduce response time and system calculation time). Design messaging models (conversation and message) and implement necessary message send, get conversation endpoints.
Güliz İrem Gökçeler	Check whether the test cases on wiki matched with the use cases. Then correct the ones which are inconsistent with the implemented project and update the reference requirements on each test case.
Batuhan Enes Çağlayan	Implement Fabric API for our Android app that will allow us to detect user behaviors, receive exception notifications, keep specific statistics so that we can have meaningful analyses for our product.
Ihsan Berkan Balaban	Create Guest Page for guest users in Frontend. Modify routing between guest page and landing page as well as the register and log in page by adding buttons for those pages. Showing the available projects in the platform in the guest page.
Oğuzhan Kırlar	-

Table 2: Coding Work for Each Team Member

## 5 Requirements

### 5.1 Glossary

- **User:** A person that opens the Web application or Android client of the system. This person can be registered or unregistered.
- **Guest User:** A user that is unregistered, or not logged in to the system.
- **Admin User:** A user that is specially chosen by the developers, or other Admin Users, in order to maintain the system's content. They have more powers than other users, outlined in the Functional Requirements section below.
- **Registered User:** A user that has logged in to the system. They can choose the role of Freelancer, Client or both.
- **Role of Freelancer:** A role that wants to take on Projects for Clients in exchange for payment.
- **Role of Client:** A role that wants post Projects to be done by Freelancers.
- **Password:** A string of characters that each Registered User has in order to log in to the system.
- **Valid Password:** A Password that consists of at least 8 alphanumeric characters.
- **Freelancer:** A user whose role is Freelancer
- **Client:** A user whose role is Client.
- **Project:** A set of tasks defined by a Client to be done by a Freelancer of the Client's choosing (provided that the Freelancer has made a Bid for that Project), before a certain deadline of the Client's choosing.
- **In Progress Project:** A project that has been assigned to a freelancer; a project which the owner (client) chose a freelancer who bidden for it
- **Virtual Wallet:** A field that signifies how much money a Registered User has in the system.
- **Bid:** The act, performed by Freelancers on available Projects, showing the Freelancer is interested in taking on the Project. Each Bid comes with an amount of money that the Freelancer demands completing the Project.
- **Message:** A method of communication between two Registered Users, visible only to those two Registered Users and Admin Users.
- **Block:** The act, performed by Admin Users, of suspending any activity by or regarding the blocked party. Registered Users and Projects may be blocked.
- **Report:** The act, performed by Registered Users, of calling Admin Users to attention about content violating the Terms of Service.
- **Terms of Service:** The rules of the system that are necessary to accept in order to become a Registered User, and to comply with in order keep Registered User status. (To be defined later.)
- **Rate:** The act, performed by Clients on Freelancers, or by Freelancers on Clients, of giving integer points between 1 and 5 (inclusive), that corresponds to how well the latter adhered to the Project specifications. This is a one-time occurrence at the end of each completed Project.
- **Comment:** The act, performed by Clients on Freelancers, or by Freelancers on Clients, of giving feedback about the Project. This is a one-time occurrence at the end of each completed Project.
- **Semantic Tag:** A string that signifies some quality of the attached content.

- **Portfolio:** A certain set of Projects that were completed by a Freelancer and past experience of the Freelancer.
- **Seed Payment Method:** A payment method where Client sends some part of the total money to the Freelancer when a milestone is reached by the Freelancer.

## 5.2 Functional Requirements

### 5.2.1 User requirements

- **5.2.1.1.** Users shall be able to sign up anytime with their username, password and email.
- **5.2.1.2.** Users shall be able to search for projects.
  - **5.2.1.2.1.** Users should be able to filter the searching results according to the rating and the price.
- **5.2.1.3. Admin User**
  - **5.2.1.3.1.** Admin users shall be able to view any registered user account, project, rating, comment, and report.
  - **5.2.1.3.2.** Admin users shall be able to block or remove any registered user account.
  - **5.2.1.3.3.** Admin users shall be able to view messages between registered users.
  - **5.2.1.3.4.** Admin users shall be able to message any registered user.
  - **5.2.1.3.5.** Admin users shall be able to edit, block or remove any project.
  - **5.2.1.3.6.** Admin users shall be able to search for projects.
  - **5.2.1.3.7.** Admin users should be able to generate a report about projects, freelancers, and clients.
- **5.2.1.4. Registered User**
  - **5.2.1.4.1.** Registered users shall be able to log in with their username and password.
  - **5.2.1.4.2.** Registered users shall be able to update their personal information and password.
  - **5.2.1.4.3.** Registered users shall have a virtual wallet.
    - **5.2.1.4.3.1.** Registered users shall be able to deposit money to and withdraw money from their virtual wallet.
  - **5.2.1.4.4.** Registered users shall be able to search for projects and users.
    - **5.2.1.4.4.1.** Registered users should be able to filter the searching results according to the rating and the price.
  - **5.2.1.4.5.** Registered users shall be able to view a project in its entirety.
  - **5.2.1.4.6.** Registered users shall be able to view any registered user profile information.
  - **5.2.1.4.7.** Registered users shall be able to send messages any registered user.
  - **5.2.1.4.8.** Registered users shall be able to report any registered user account and any projects.
  - **5.2.1.4.9.** Registered users shall be able to annotate
    - **5.2.1.4.9.1.** text areas such as freelancer portfolios, project description and project title with text or image.
    - **5.2.1.4.9.2.** image areas such as project attachments with text or image.
  - **5.2.1.4.10** Registered users shall be able to edit or delete their own annotations.
  - **5.2.1.4.11.** Registered users:
    - **5.2.1.4.11.1.** Shall be able to access their profile.
    - **5.2.1.4.11.2.** Shall be able to search for projects and users.
    - **5.2.1.4.11.2.** Shall be able to access their wallet.

- **5.2.1.4.12.** Registered users shall be able to create their profile information.
  - **5.2.1.4.12.1.** Registered users shall be able to add a profile picture to their profile.
  - **5.2.1.4.12.2.** Registered users shall be able to share their name, surname, age, gender and short text about themselves on their profile.
- **5.2.1.4.13.** Registered users shall be able to switch between two user types, which are freelancer and client.
  - **5.2.1.4.13.1.** Freelancer
    - **5.2.1.4.13.1.1.** Freelancers shall be able to create a profile.
    - **5.2.1.4.13.1.1.1.** Freelancers shall be able to add semantic tags to their profile for their interests and their skills.
    - **5.2.1.4.13.1.1.2.** Freelancers shall be able to create a portfolio to be added to their profile upon account creation.
    - **5.2.1.4.13.1.2.** Freelancers shall be able to view their ongoing projects.
    - **5.2.1.4.13.1.3.** Freelancers shall be only able to rate and comment on a client after a project is finished.
    - **5.2.1.4.13.1.4.** Freelancers shall be able to receive their payments via the virtual wallet.
    - **5.2.1.4.13.1.5.** Freelancers shall be able to choose to add the project to his portfolio after a project is finished.
    - **5.2.1.4.13.1.6.** Freelancers should be able to connect their LinkedIn profile to their account.
    - **5.2.1.4.13.1.7.** Freelancers shall be able to bid on a project.
  - **5.2.1.4.13.2.** Client
    - **5.2.1.4.13.2.1.** Clients shall be able to create a project.
    - **5.2.1.4.13.2.1.1.** Clients shall be able to choose a topic for their project.
    - **5.2.1.4.13.2.1.2.** Clients shall be able to choose a deadline for their project.
    - **5.2.1.4.13.2.1.3.** Clients shall be able to specify an estimated budget for their project.
    - **5.2.1.4.13.2.1.4.** Clients shall be able to upload attachments about their project.
    - **5.2.1.4.13.2.1.5.** Clients shall be able to associate semantic tags with their project.
    - **5.2.1.4.13.2.2.** Clients shall be able to select one of the bids from his/her project's bid list.
    - **5.2.1.4.13.2.3.** Clients shall be able to offer their projects to a specific freelancer via push notifications.
    - **5.2.1.4.13.2.4.** Clients shall be able to change the visibility of their projects to guest users, choosing either public or private.
    - **5.2.1.4.13.2.5.** Clients shall be able to pay freelancers with the balance of their virtual wallet.
    - **5.2.1.4.13.2.6.** Clients shall be able to rate and comment on a freelancer only after their project has been completed by that freelancer.
    - **5.2.1.4.13.2.7.** Clients shall be able to change the details of the project within the bidding period.

## 5.2.2 System requirements

- **5.2.2.1.** Search
  - **5.2.2.1.1.** The system shall rank the results for project searches according to multitude of parameters such as client name, topic, semantic tags, budget, project status or deadline.
  - **5.2.2.1.2.** The system shall rank the results for user searches according to multitude of parameters such as user, and semantic tags.

- **5.2.2.1.3.** The system shall support search with keywords
- **5.2.2.2. Recommendation**
  - **5.2.2.2.1.** The system shall generate freelancer recommendations for clients with similar semantic tags and portfolio information to their projects.
  - **5.2.2.2.2.** The system shall generate project recommendations for freelancers according to the portfolio information and semantic tags they provided.
- **5.2.2.3. Notification**
  - **5.2.2.3.1.** The system shall be able to send notifications to:
    - **5.2.2.3.1.1.** the freelancer, when:
      - **5.2.2.3.1.1.1.** a project that the freelancer bidden finished its bidding period, or the freelancer won the bid for a project that they bidden.
      - **5.2.2.3.1.1.2.** the freelancer got a message from a registered user.
      - **5.2.2.3.1.1.3.** a client notified the freelancer about a project.
      - **5.2.2.3.1.1.4.** a project that the freelancer is involved in changed status.
    - **5.2.2.3.1.2.** the client, when:
      - **5.2.2.3.1.2.1.** a freelancer bidden to a project that the client opened.
      - **5.2.2.3.1.2.2.** the client got a message from a registered user.
      - **5.2.2.3.1.2.3.** an in progress project that the client owns changed status.
- **5.2.2.4. Payment**
  - **5.2.2.4.1.** The system shall allow users to use seed payment method.
- **5.2.2.5. Wallet**
  - **5.2.2.5.1.** The system shall show all the transaction history to the registered users.
- **5.2.2.6. General**
  - **5.2.2.6.1.** The system shall be able to recommend similar projects while client creating a new project.
  - **5.2.2.6.2.** The system shall show the total number of projects, freelancers, clients and total earnings of freelancers.
  - **5.2.2.6.3.** The system shall list public projects.
  - **5.2.2.6.4.** The system shall list most bided projects.
  - **5.2.2.6.5.** The system shall exhibit user testimonials.
  - **5.2.2.6.6.** The system shall show recent and popular projects freelancer users.

### **5.3 Non-functional Requirements**

- **5.3.1. Usability**
  - **5.3.1.1.** The language of the application shall be English.
- **5.3.2. Availability**
  - **5.3.2.2.1.** The system shall have a Web application that supports:
    - **5.3.2.2.1.1.** Chrome browser version 63 and up
    - **5.3.2.2.1.2.** Firefox browser version 58 and up
    - **5.3.2.2.1.3.** Opera browser version 50 and up
  - **5.3.2.2.2.** The system shall have an Android application that supports version 6.0 Android Marshmallow and later (used by 57.7)
- **5.3.3. Annotation**

- **5.3.3.1.** 3.1. The system shall utilize annotations in compliance with the latest W3C Web Annotation Protocol (accessed January 2018).
- **5.3.4. Third Party Integration**
  - **5.3.4.1.** Android API shall be used for the native Android app.
  - **5.3.4.2.** Wikidata API shall be used for fetching semantic tags.
  - **5.3.4.3.** Push notifications shall be used to notify users of possible changes of contracts.
    - **5.3.4.3.1.** Chrome push notifications API for Web
    - **5.3.4.3.2.** Google push notifications API for Android
  - **5.3.4.4.** LinkedIn API should be used for connecting user accounts to LinkedIn accounts and fetching information.
  - **5.3.4.5.** Smart Moderation API shall be used for preventing swear words on the user's comments.
- **5.3.5. Security**
  - **5.3.5.1.** The system shall protect user passwords in a database using SHA-256 encryption.
  - **5.3.5.2.** The system shall block sources that send more than 5 requests per second, to prevent DDoS attacks.
  - **5.3.5.3.** The system shall check user queries against SQL injection attacks.
  - **5.3.5.4.** User account email shall be unique.
  - **5.3.5.5.** User account password shall be valid.
  - **5.3.5.6.** The system should use 3D Secure Payment for payments.
- **5.3.6. Reliability**
  - **5.3.6.1.** The database shall be backed up daily and weekly.
    - **5.3.6.1.1.** Weekly backups shall be full backups.
    - **5.3.6.1.2.** Daily backups shall be differential backups.
  - **5.3.6.2.** The system should have monthly maintenance period of 3 hours.
  - **5.3.6.3.** The system shall recover fully from a crash in at most 24 hours.
  - **5.3.6.4.** The system shall have at least 99
- **5.3.7. Scalability**
  - **5.3.7.1.** The system should handle at least 10000 online registered users at any time.
- **5.3.8. Performance**
  - **5.3.8.1.** The system should return all queries within at most 3 seconds to users with at least an 8 Mbps internet connection.
  - **5.3.8.2.** The system should draw every frame at most 33ms (1000 ms/30 fps) to avoid being perceived as laggy.
- **5.3.9. Legal**
  - **5.3.9.1.** Clients shall be able to choose a license for their projects.

## 6 Design Documents

You can access our design documents from [here](#).

## 7 User & System Manuals

### 7.1 System Manuals

#### 7.1.1 Web & Backend

##### 7.1.1.1 Prerequisites

- Docker
- Docker Compose

##### 7.1.1.2 Project Setup

Enter the project directory. Then, you can start backend and frontend applications with the following command. You must change REACT\_APP\_API\_URL, REACT\_APP\_API\_STATIC\_URL and REACT\_APP\_LINKEDIN\_CLIENT according to your server ip address or *localhost* and your LinkedIn app client key.

```
echo "# BACKEND SERVER
BACKEND_SERVER_PORT=8000

# DATABASE CONFIGURATIONS
MONGODB_DB=karpuzDB
MONGODB_PATH=../../data/mongodb
MONGODB_USER=admin
MONGODB_PASSWORD=Karpuz2018+
MONGODB_PORT=27017" > ${WORKSPACE}/backend/.env

echo "# FRONTEND SERVER
REACT_APP_API_URL=http://123.456.789.123:8000
REACT_APP_API_STATIC_URL=http://123.456.789.123:8000/media/
REACT_APP_LINKEDIN_CLIENT=" > ${WORKSPACE}/frontend/.env

echo "enter_your_sudo_password" | sudo -S bash ./deploy.sh
```

#### 7.1.2 Android

You need to have an Android development environment that supports Kotlin to be able to configure Karpuz Android project. Our preferred IDE is Android Studio 3.0 and up.

You need to git clone and open the project and Android Studio. Then you need to wait until gradle sync is finished. You need to download additional Kotlin packages if you do not have them.

No additional setup necessary to build and run Karpuz Android app. All operations are common to usual Android project operations.

## 7.2 User Manuals

### 7.2.1 Web

When you enter the Karpuz website, you are welcomed with a landing page which includes some statistics and example projects. You can login or register via *Register* and *Login* buttons.

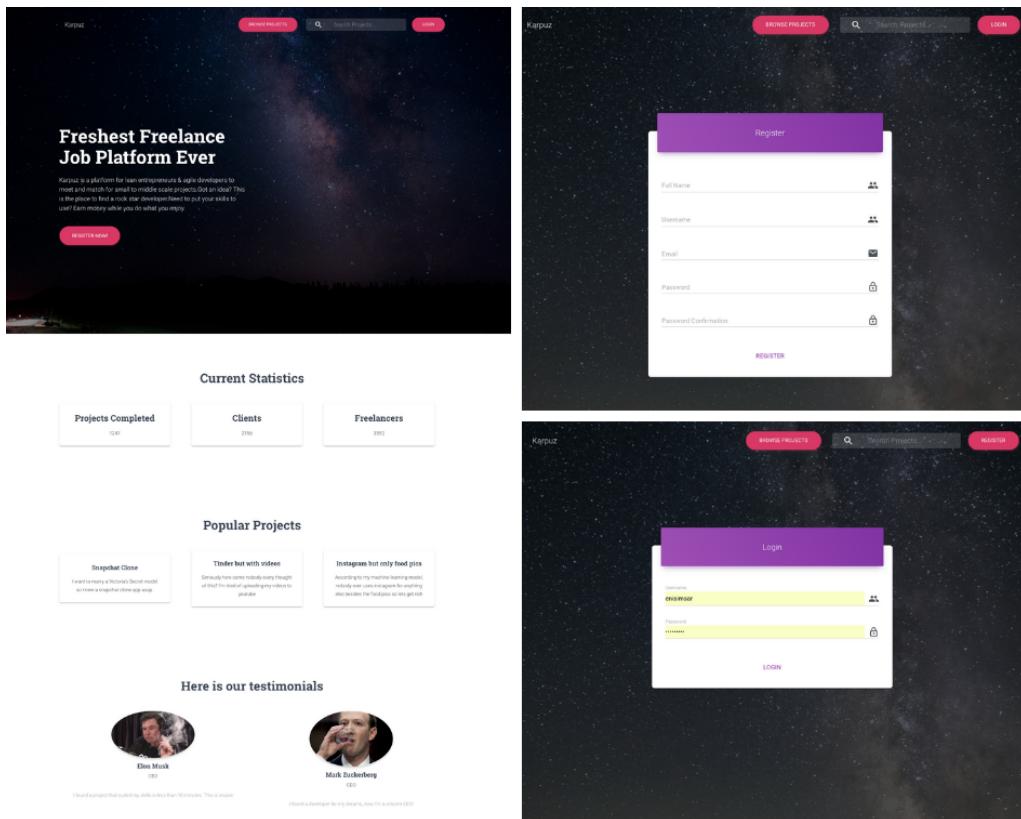


Figure 1: Landing and Credentials Pages

After you are logged in, you are ready to explore various freelance projects in Karpuz. You will be redirected to your home page, and from there you can navigate to your profile, your projects and your messages page.

Also, you can view recommended project for your portfolios and all projects.

The screenshot displays the Karpuz application's home page. On the left, a sidebar menu includes Home, User Profile, Messages, Projects, and Users. The main content area is divided into two sections: "Recommended Projects" and "All Projects".

### Recommended Projects

- Simple database website** by Emin Ayar: I want to store some tuples and request them using a web interface... Budget: 500\$ Deadline: 2019-04-22T00:00:00 Created At: 2019-01-02. Tags: MySQL, PHP.
- Host a Website to AWS** by Emin Ayar: I need to host my new website in AWS. Looking for a AWS experienced system administrator... Budget: 30\$ Deadline: 2019-01-16T00:00:00 Created At: 2019-01-02. Tags: PHP, LINUX, DEPLOYMENT\_ENVIRONMENT.
- Online examination site** by Emin Ayar: Hi i want a site where i want to conduct online exam for my students. Questions are of few types 1.Objective 2.True or false 3.Essay type. The teacher will verify the answer And give marks. Ques... Budget: 10000\$ Deadline: 2019-02-28T00:00:00 Created At: 2019-01-02. Tags: MYSQL, HTML, WEB\_DESIGN.
- Mac App developer needed Urgently** by Emin Ayar: I need Mac app Developer to fix Bugs in my code and make it compatible to latest Mac OS... Budget: 250\$ Deadline: 2019-01-24T00:00:00 Created At: 2019-01-02. Tags: COCOA, IPAD, MAC\_OS, IPHONE.
- I would like to hire an OpenStack Developer** by Emin Gür: I am getting some emails from the server. 10min disk backlog (was critical for 13 minutes) I need to fix it.... Budget: 123\$ Deadline: 2019-01-16T00:00:00 Created At: 2019-01-03. Tags: CLOUD\_COMPUTING.
- Essay translation to Swahili** by Emin Ayar: I need a translation. Someone prifferably from East Africa to translate some text to swahili within the shortest time possible.... Budget: 250\$ Deadline: 2019-02-14T00:00:00 Created At: 2019-01-02. Tags: TRANSLATION, LANGUAGE.

### All Projects

- Build me a website. CSGO Gambling.** by Enis Simsar: Hello, I'm looking for any freelancers that are able to create a csgo gambling website. I've included an example below. This project requires previous knowledge with steams api, html, python, css. I... Budget: 750\$ Deadline: 2019-01-31T00:00:00 Created At: 2018-12-04. Tags: PYTHON, DJANGO.
- Host a Website to AWS** by Emin Ayar: I need to host my new website in AWS. Looking for a AWS experienced system administrator... Budget: 30\$ Deadline: 2019-01-16T00:00:00 Created At: 2019-01-02. Tags: PHP, LINUX, DEPLOYMENT\_ENVIRONMENT.
- Mac App developer needed Urgently** by Emin Ayar: I need Mac app Developer to fix Bugs in my code and make it compatible to latest Mac OS... Budget: 250\$ Deadline: 2019-01-24T00:00:00 Created At: 2019-01-02. Tags: COCOA, IPAD, MAC\_OS, IPHONE.
- Design a logo** by Emin Ayar: I need a professional logo just send a proposal and I will respond... Budget: 1500\$ Deadline: 2019-01-31T00:00:00 Created At: 2019-01-02. Tags: ILLUSTRATOR, GRAPHIC\_DESIGNER.
- Essay translation to Swahili** by Emin Ayar: I need a translation. Someone prifferably from East Africa to translate some text to swahili within the shortest time possible.... Budget: 250\$ Deadline: 2019-02-14T00:00:00 Created At: 2019-01-02. Tags: TRANSLATION, LANGUAGE.
- Online examination site** by Emin Ayar: Hi i want a site where i want to conduct online exam for my students. Questions are of few types 1.Objective 2.True or false 3.Essay type. The teacher will verify the answer And give marks. Ques... Budget: 10000\$ Deadline: 2019-02-28T00:00:00 Created At: 2019-01-02. Tags: MYSQL, HTML, WEB\_DESIGN.

Figure 2: Home Page

You can create a new project by clicking + button from home page or projects page.

- Type title and description.
- Select project deadline and budget.
- Type tags after insertion press enter or tab key. Then, click search button and wait until selection bar is visible. Tags are provided by WikiData API.
- Add project Milestones with add new milestone button.

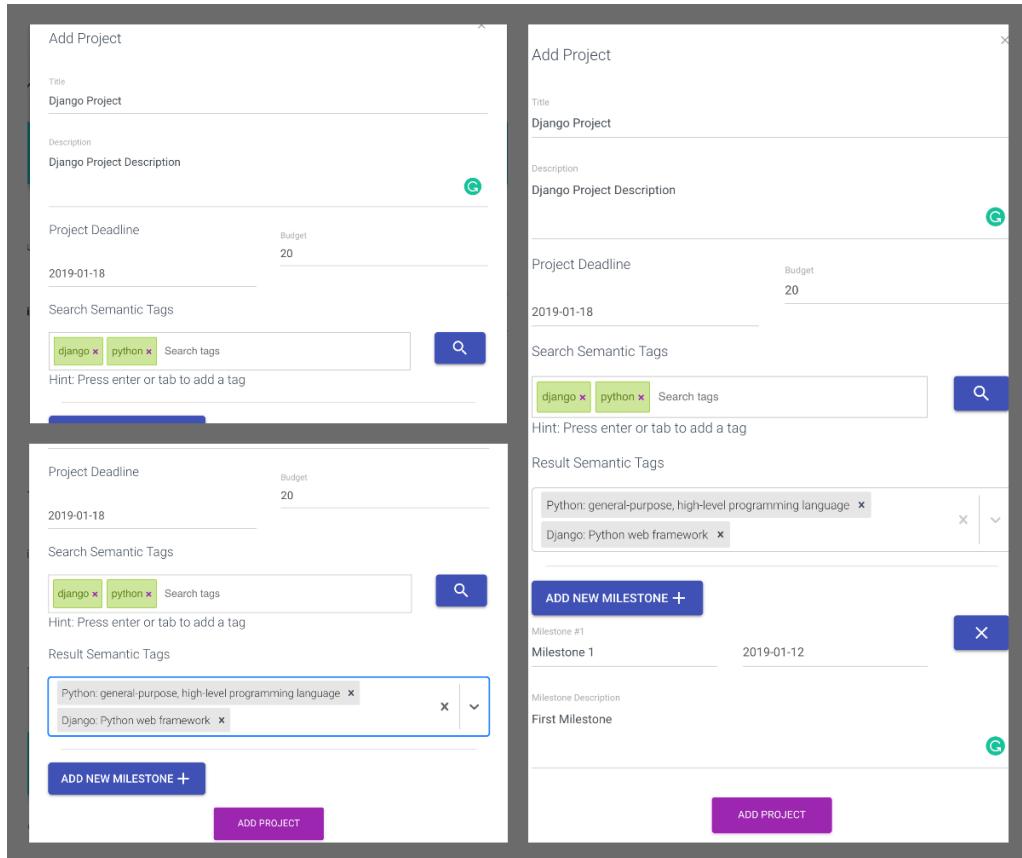


Figure 3: Create Project Modal

After creating the project, you can go projects tab from side bar and click your new project. In this page you can add your attachments via right area.

- Click browse and select files
- Click upload icon for each files
- Wait until uploading files.

**Project Freelancer**

**Scrape NBA Player Props using Python**

\$1200 Deadline: 2019-01-07 00:00:00

Bids

Price	Bid Owner	Bid Owner's Rate	Note	Status	Actions	Go Profile

Project Attachments

Drag & Drop your attachments or [Browse](#) max 5 files

**Ng\_MVY15.pdf** 970 KB Upload cancelled by user

**Project Freelancer**

**Scrape NBA Player Props using Python**

\$1200 Deadline: 2019-01-07 00:00:00

Bids

Price	Bid Owner	Bid Owner's Rate	Note	Status	Actions	Go Profile

Project Attachments

Drag & Drop your attachments or [Browse](#) max 5 files

**Ng\_MVY15.pdf** 970 KB Upload complete by user

Figure 4: Attachment

You can go your user profile from User Profile tab from sidebar. In this page, You can:

- add current job via LinkedIn button. (Current Job information provided by LinkedIn API)
- add portfolios from + button, tags steps are like creation of project. Then, you can add an attachment your portfolios.
- withdraw money via clicking withdraw money button (simulation wallet)
- change your profile information, password and profile image

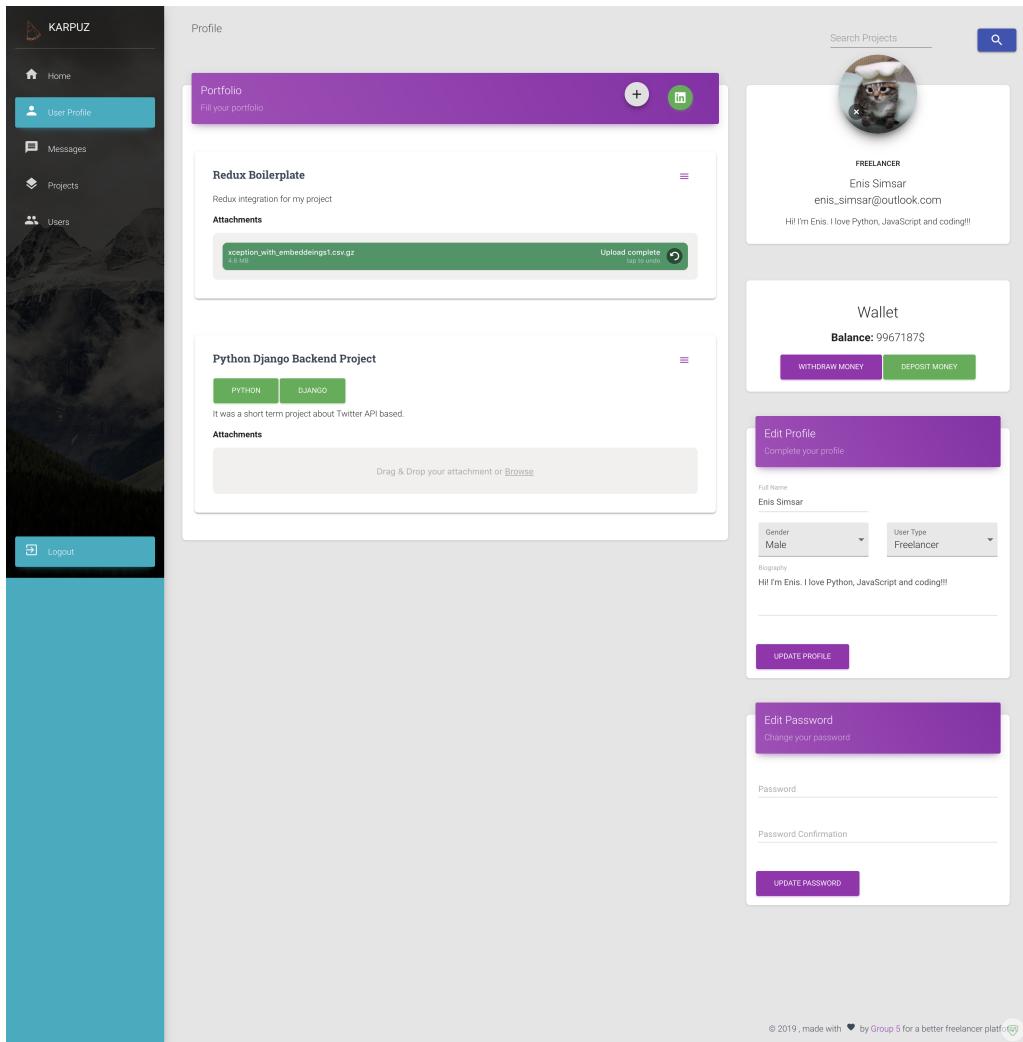


Figure 5: User Profile

You can bid a project (with *bidonproject* button) and send a message (with *sendmessage* button) to a project owner.

The screenshot shows a project page for "Calibre eBook-Reader Plug-In". On the left, there's a sidebar with categories like PYTHON and SOFTWARE\_ARCHITECTURE. Below them is a description: "To create a program that can extract data from the open-source Calibre ebook player (written in python), i.e. from PDF and epub files – more specifically markings and comments inserted within Calibre". A button at the bottom says "BID ON PROJECT". On the right, there's a section for "Project Owner" with a profile picture of a person holding a book, labeled "flyerEXPERT" and "GRAPHIC DESIGN AGENCY - BROCHURES, LOGOS, BRANDING". Below it is a "SEND MESSAGE" button and fields for "Attachment Name" and "Attachment Link". Underneath, there's a "Bid on Project" form with fields for "Budget:" and "Note:", and a "SEND" button.

Figure 6: Project Bid and Message

You can reply your messages from messages tab in the sidebar.

The screenshot shows the KARPUS messaging interface. On the left, there's a sidebar with "Messages" selected. The main area shows a list of messages in a sidebar, including a message from "username" saying "looks nice bro", a message from "deniz" saying "oo tyi", a message from "eminayar" saying "meraba", and a message from "metehanbaran" saying "hello". In the center, there's a "Messages" tab with a search bar and a "Search Projects" button. At the bottom, there's a compose field with a "Hi" placeholder and a "SEND" button.

Figure 7: Messages

You can see recommended user for your project at bottom of your project page.

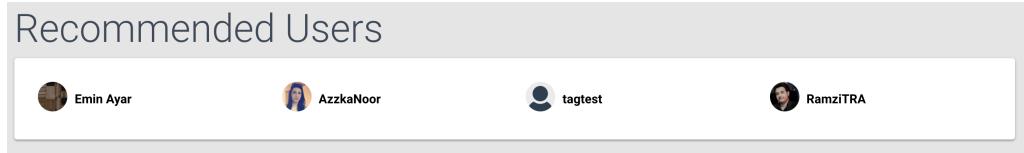


Figure 8: Recommended Users

When you click one of the users, it goes to user profile and you can view the user profile and also send a message from this page (with *sendmessage* button).

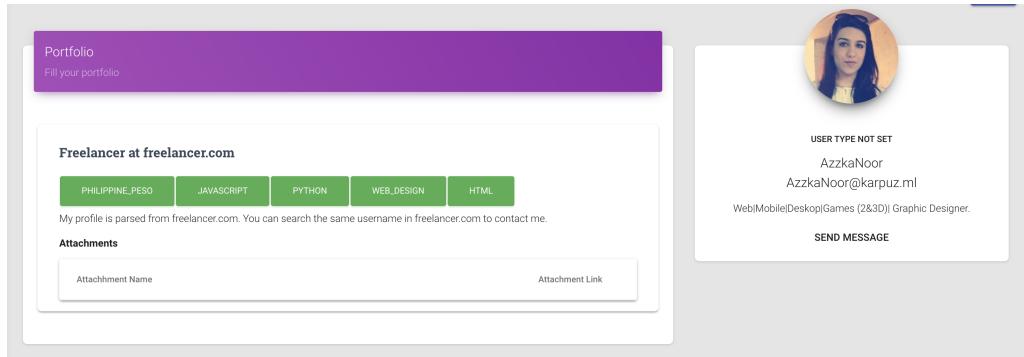


Figure 9: User Profile

When your project finished, you can give rate freelancer of your project from project page.

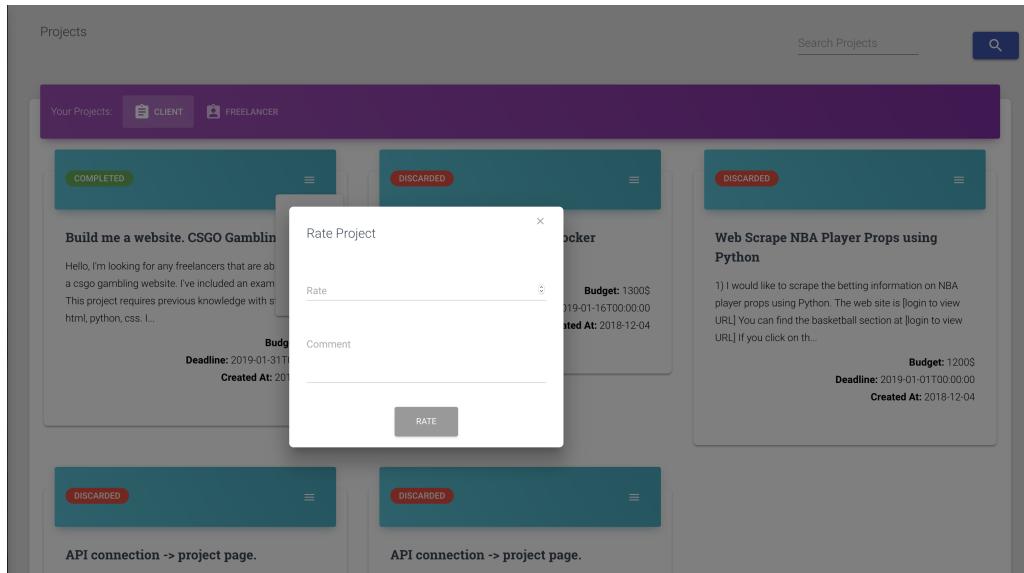


Figure 10: Rating

You can check and manage freelancer bids from your project page.

Suggested Price	Bid Owner	Bid Owner's Rate	Note	Status	Actions	Go Profile
1100\$	Mete Kocaman	0.5333333333333333		<span style="color: green;">Accepted</span>	<span style="color: blue;">≡</span>	<span style="color: blue;">↗</span>

Figure 11: Bidding

You can annotate project descriptions.

I need a website built with features that allow a user to subscribe and open an account password protected, post and upload images, vote on the posted item and rank the posted items based on the number of votes received and based on location. Must be able to design logos and edit images and videos. I will provide [images](#), [videos](#), samples and ideas that may require designing from scratch.

Figure 12: Annotation

You can search projects with text.

The screenshot displays the KARPUZ platform interface. On the left, there is a sidebar with a dark background featuring a mountain landscape. The sidebar includes a logo at the top, followed by navigation links: Home, User Profile, Messages, Projects, and Users. The main area is titled "Results Projects". A search bar at the top right contains the text "python". Below the search bar, there are five project cards arranged in two rows of three and one row of two. Each card has a teal header with the user's profile picture and name. The first card is for "Enis Simsar" with the project title "Build me a website. CSGO Gambling.". It includes a description, budget (\$750), deadline (2019-01-31T00:00:00), and creation date (2018-12-04). The second card is for "Famous Ming Software Inc" with the project title "bitcoin bot for bitmex". The third card is for "mahamudrony" with the project title "bitcoin bot for bitmex". The fourth card is for "flyerEXPERT" with the project title "Calibre eBook-Reader Plug-In". The fifth card is for "dizajnerweb" with the project title "Python scraper, e-mailer and publisher". Each card also lists relevant tags like PYTHON, DJANGO, SOFTWARE\_ARCHITECTURE, and others.

Figure 13: Search Projects

As a guest user, you can show projects, project and search projects with text.

The figure consists of three vertically stacked screenshots of the Karpuz website, demonstrating different user interactions:

- Screenshot 1: Browse Projects**  
This screenshot shows the main "Browse Projects" page. It features a dark header with "Karpuz" and navigation buttons for "BROWSE PROJECTS", "Search Projects...", and "REGISTER". Below the header, the title "Browse Projects" is displayed against a dark background with a starry pattern. Three project cards are listed, each belonging to "Emin Ayar" (indicated by a profile picture and name). The first card is titled "Host a Website to AWS" with a budget of 30\$ and deadline 2019-01-16T00:00:00. The second card is titled "Mac App developer needed Urgently" with a budget of 25\$ and deadline 2019-01-24T00:00:00. The third card is titled "Design a logo" with a budget of 150\$ and deadline 2019-01-31T00:00:00. Each card includes a list of required skills: PHP, LINUX, DEPLOYMENT\_ENVIRONMENT for the first; COCOA, IPAD, MAC\_OS, IPHONE for the second; and ILLUSTRATOR, GRAPHIC\_DESIGNER for the third.
- Screenshot 2: Host a Website to AWS**  
This screenshot shows a detailed view of the "Host a Website to AWS" project. The top section displays the project details: "Host a Website to AWS" by "Emin Ayar" with a budget of 30\$ and deadline 2019-01-16T00:00:00. Below this, a "Bids" section shows a table with columns for "Suggested Price", "Bid Owner", and "Bid Owner's Rate". A single bid is listed: "20\$" by "m\*\*\*\*\*@\*\*\*\*". To the right, a "Project Owner" section shows a profile picture of "Emin Ayar".
- Screenshot 3: Result Projects**  
This screenshot shows the search results for "python". The search bar at the top contains the text "python". The results page has a title "Result Projects" and displays two projects. The first project is "Build me a website. CSGO Gambling." by "Enis Simsar" with a budget of 75\$. The second project is "bitcoin bot for bitmex" by "Famous Ming Software Inc" with a budget of 250\$. Both projects include skill tags: PYTHON, DJANGO for the first, and PYTHON, SOFTWARE\_ARCHITECTURE for the second.

Figure 14: Guest Users

### 7.2.2 Android

When you launch Karpuz Android Application, you are welcomed with sign up and login options.

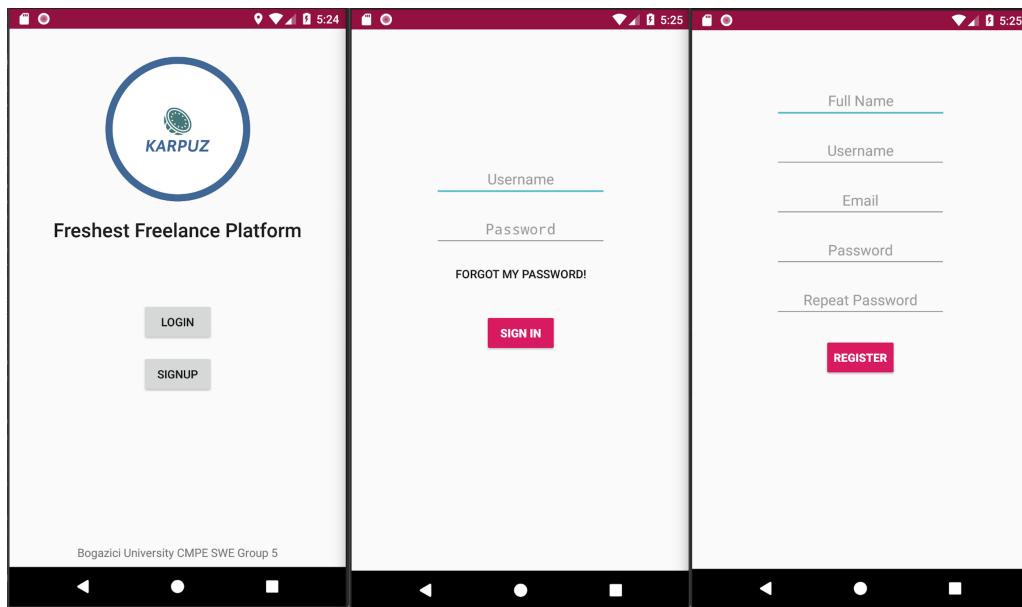


Figure 15: Welcome Page

You will see the main page when you login or sign up.

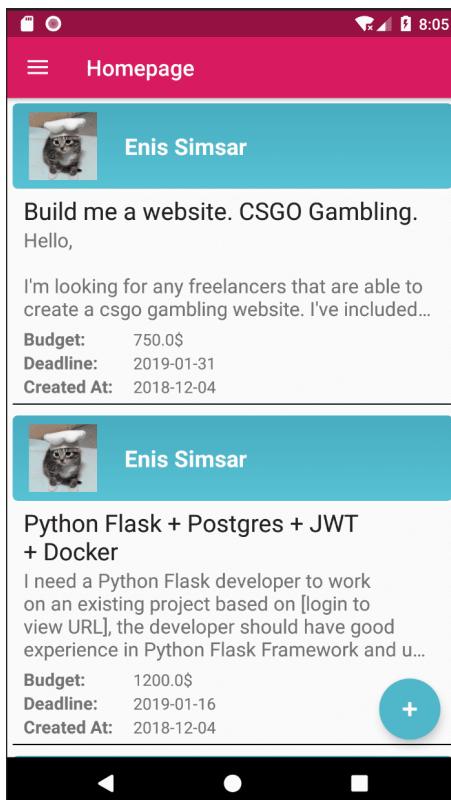


Figure 16: Home Page

You can create a project by tapping the + button on bottom right.

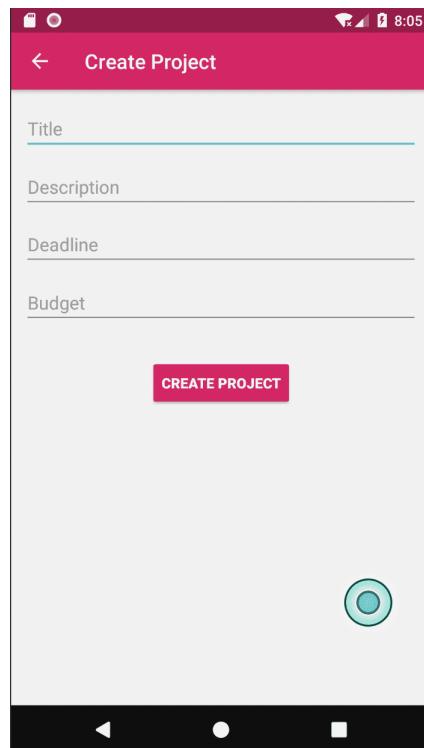


Figure 17: Project Creation

Or you can see a project's detail by tapping on the project on home page.

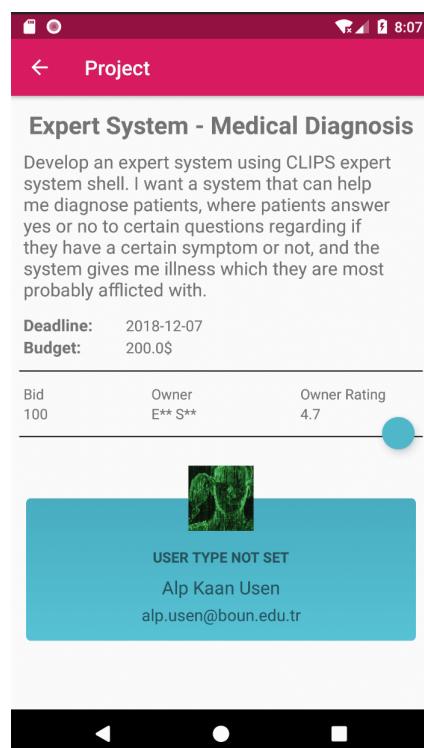


Figure 18: Project Details Page

You can tap the hamburger menu (3 lines at the top left) to open the navigation drawer.

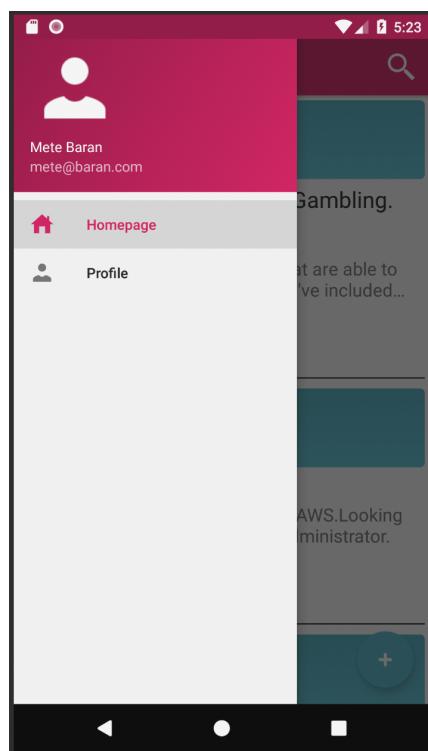


Figure 19: Navigation Bar

You can tap profile to view your own profile and log out from there.

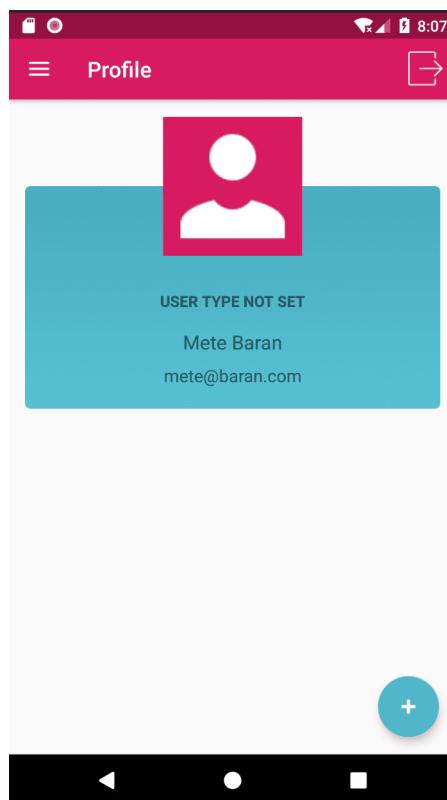


Figure 20: Profile Page

You can also tap other user's profiles from the home page.

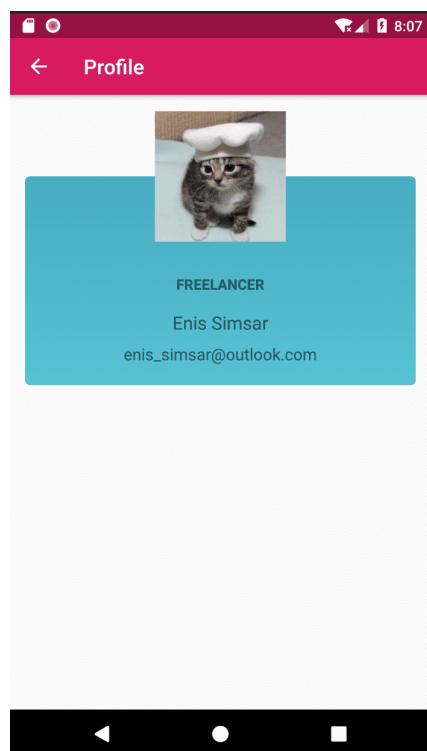


Figure 21: Other Profile Page

## 8 Project Plan

We added the project plan as png. Also, you can reach it from [here](#).

		Name	Duration	Start	Finish	Predecessors	Resource Names
1	Backend	<b>Implementation for Part I</b>	15 days	10/16/18 8:00 AM	11/5/18 5:00 PM		
2	Backend	Backend	12 days	10/16/18 8:00 AM	10/31/18 5:00 PM		
3	Auth	Boiler Plate Code	4 days	10/16/18 8:00 AM	10/19/18 5:00 PM	Alp Kaan Usen;Muhammed Emin Ayar;Muhammed Emin Gür	
4	Auth	Auth	5 days	10/22/18 8:00 AM	10/26/18 5:00 PM		
5	Auth	Register End Point	2 days	10/22/18 8:00 AM	10/23/18 5:00 PM	Alp Kaan Usen	
6	Auth	Login End Point	2 days	10/22/18 8:00 AM	10/23/18 5:00 PM	Muhammed Emin Gür	
7	Auth	Get Profile End Point	2 days	10/22/18 8:00 AM	10/23/18 5:00 PM	Muhammed Emin Ayar	
8	Auth	Update Profile End Point	3 days	10/24/18 8:00 AM	10/26/18 5:00 PM	Muhammed Emin Gür	
9	Auth	Logout End Point	3 days	10/24/18 8:00 AM	10/26/18 5:00 PM	Alp Kaan Usen	
10	Project	<b>Project</b>	6 days	10/24/18 8:00 AM	10/31/18 5:00 PM		
11	Project	Create Project	3 days	10/24/18 8:00 AM	10/26/18 5:00 PM	Muhammed Emin Ayar	
12	Project	Discard Project	3 days	10/24/18 8:00 AM	10/26/18 5:00 PM	Muhammed Emin Gür	
13	Frontend	Get Project	2 days	10/29/18 8:00 AM	10/30/18 5:00 PM	Alp Kaan Usen	
14	Frontend	Finish Project	3 days	10/29/18 8:00 AM	10/31/18 5:00 PM	Muhammed Emin Ayar	
15	Frontend	Get Projects by Filter	2 days	10/30/18 8:00 AM	10/31/18 5:00 PM	Alp Kaan Usen	
16	Frontend	<b>Frontend</b>	12 days	10/16/18 8:00 AM	10/31/18 5:00 PM		
17	Frontend	Boiler Plate Code	4 days	10/16/18 8:00 AM	10/19/18 5:00 PM	Enis Simsar;Guliz Irem Gökceler;İhsan Berkcan Balaban	
18	Frontend	Landing Page	2 days	10/22/18 8:00 AM	10/23/18 5:00 PM	Enis Simsar	
19	Frontend	Auth	5 days	10/22/18 8:00 AM	10/26/18 5:00 PM		
20	Frontend	Register Page	2 days	10/22/18 8:00 AM	10/23/18 5:00 PM	Guliz Irem Gökceler	
21	Frontend	Login Page	2 days	10/22/18 8:00 AM	10/23/18 5:00 PM	Enis Simsar	
22	Frontend	Profile Page	3 days	10/24/18 8:00 AM	10/26/18 5:00 PM	Enis Simsar	
23	Frontend	Edit Profile Page	3 days	10/24/18 8:00 AM	10/26/18 5:00 PM	Enis Simsar	
24	Frontend	<b>Project</b>	6 days	10/24/18 8:00 AM	10/31/18 5:00 PM		
25	Frontend	Home Page	3 days	10/24/18 8:00 AM	10/26/18 5:00 PM	Enis Simsar	
26	Frontend	Search Project Page	3 days	10/29/18 8:00 AM	10/31/18 5:00 PM	Enis Simsar	
27	Frontend	Project Page	3 days	10/29/18 8:00 AM	10/31/18 5:00 PM	Guliz Irem Gökceler	
28	Android	<b>Android</b>	12 days	10/16/18 8:00 AM	10/31/18 5:00 PM		
29	Android	Boiler Plate Code	4 days	10/16/18 8:00 AM	10/19/18 5:00 PM	Bahadir Oncel;Batuhan Enes Caglayan;Oguzhan Kirlar	
30	Android	Landing Page	2 days	10/22/18 8:00 AM	10/23/18 5:00 PM	Bahadir Oncel	
31	Android	Auth	5 days	10/22/18 8:00 AM	10/26/18 5:00 PM		
32	Android	Register Page	2 days	10/22/18 8:00 AM	10/23/18 5:00 PM	Batuhan Enes Caglayan	
33	Android	Login Page	2 days	10/22/18 8:00 AM	10/23/18 5:00 PM	Oguzhan Kirlar	
34	Android	Profile Page	3 days	10/24/18 8:00 AM	10/26/18 5:00 PM	Bahadir Oncel	
35	Android	Edit Profile Page	3 days	10/24/18 8:00 AM	10/26/18 5:00 PM	Batuhan Enes Caglayan	
36	Android	<b>Project</b>	6 days	10/24/18 8:00 AM	10/31/18 5:00 PM		
37	Android	Home Page	3 days	10/24/18 8:00 AM	10/26/18 5:00 PM	Oguzhan Kirlar	
38	Android	Search Project Page	3 days	10/29/18 8:00 AM	10/31/18 5:00 PM	Bahadir Oncel	
39	Android	Project Page	3 days	10/29/18 8:00 AM	10/31/18 5:00 PM	Batuhan Enes Caglayan	
40	Testing	<b>Testing for Above Functionalities</b>	3 days	11/1/18 8:00 AM	11/5/18 5:00 PM		
41	Testing	Unit Test for Backend	3 days	11/1/18 8:00 AM	11/5/18 5:00 PM	Each Member	
42	Testing	Snapshot Test for Frontend	3 days	11/1/18 8:00 AM	11/5/18 5:00 PM	Enis Simsar;Guliz Irem Gökceler;İhsan Berkcan Balaban	
43	Milestone	1	1 day	11/6/18 8:00 AM	11/6/18 5:00 PM	1	Each Member
44	Implementation for Part II	<b>Implementation for Part II</b>	23 days	11/7/18 8:00 AM	12/7/18 5:00 PM		
45	Implementation for Part II	Backend	23 days	11/7/18 8:00 AM	12/7/18 5:00 PM		
46	Implementation for Part II	User	6 days	11/7/18 8:00 AM	11/14/18 5:00 PM		
47	Implementation for Part II	Get Average Rating	3 days	11/7/18 8:00 AM	11/9/18 5:00 PM	Muhammed Emin Ayar	
48	Implementation for Part II	Get Ratings	3 days	11/7/18 8:00 AM	11/9/18 5:00 PM	Muhammed Emin Gür	
49	Implementation for Part II	Report User	3 days	11/12/18 8:00 AM	11/14/18 5:00 PM	Alp Kaan Usen	
50	Implementation for Part II	Delete User	3 days	11/12/18 8:00 AM	11/14/18 5:00 PM	Muhammed Emin Ayar	
51	Implementation for Part II	Admin	6 days	11/12/18 8:00 AM	11/19/18 5:00 PM		
52	Implementation for Part II	Get Reports for Projects	3 days	11/12/18 8:00 AM	11/14/18 5:00 PM	Muhammed Emin Gür	
53	Implementation for Part II	Get Reports for Users	3 days	11/15/18 8:00 AM	11/19/18 5:00 PM	Alp Kaan Usen	
54	Implementation for Part II	Block User	3 days	11/15/18 8:00 AM	11/19/18 5:00 PM	Muhammed Emin Ayar	
55	Implementation for Part II	<b>Project</b>	12 days	11/5/18 8:00 AM	11/30/18 5:00 PM		
56	Implementation for Part II	Get Recommended Projects	3 days	11/15/18 8:00 AM	11/19/18 5:00 PM	Muhammed Emin Gür	
57	Implementation for Part II	Add Bid	4 days	11/20/18 8:00 AM	11/23/18 5:00 PM	Alp Kaan Usen	
58	Implementation for Part II	Accept Bid	4 days	11/20/18 8:00 AM	11/23/18 5:00 PM	Muhammed Emin Ayar	
59	Implementation for Part II	Get Project Bids	4 days	11/20/18 8:00 AM	11/23/18 5:00 PM	Muhammed Emin Gür	
60	Implementation for Part II	Add Project to Portfolio	5 days	11/26/18 8:00 AM	11/30/18 5:00 PM	Alp Kaan Usen	
61	Implementation for Part II	Report Project	5 days	11/26/18 8:00 AM	11/30/18 5:00 PM	Muhammed Emin Ayar	
62	Annotation	<b>Annotation</b>	10 days	11/26/18 8:00 AM	12/7/18 5:00 PM		
63	Annotation	Annotate Project	5 days	11/26/18 8:00 AM	11/30/18 5:00 PM	Muhammed Emin Gür	
64	Annotation	Delete Annotation for Project	5 days	12/3/18 8:00 AM	12/7/18 5:00 PM	Alp Kaan Usen	
65	Annotation	Annotate Portfolio	5 days	12/3/18 8:00 AM	12/7/18 5:00 PM	Muhammed Emin Ayar	
66	Annotation	Delete Annotate for Portfolio	5 days	12/3/18 8:00 AM	12/7/18 5:00 PM	Muhammed Emin Gür	
67	Frontend	<b>Frontend</b>	23 days	11/7/18 8:00 AM	12/7/18 5:00 PM		
68	Frontend	User	8 days	11/7/18 8:00 AM	11/16/18 5:00 PM		
69	Frontend	Show User Rating Info	8 days	11/7/18 8:00 AM	11/16/18 5:00 PM	Enis Simsar	
70	Frontend	Report User Page	8 days	11/7/18 8:00 AM	11/16/18 5:00 PM	Guliz Irem Gökceler	
71	Frontend	Admin	15 days	11/7/18 8:00 AM	11/27/18 5:00 PM		
72	Frontend	Reported Users Page	8 days	11/7/18 8:00 AM	11/16/18 5:00 PM	Ihsan Berkcan Balaban	
73	Frontend	Reported Projects Page	7 days	11/19/18 8:00 AM	11/27/18 5:00 PM	Enis Simsar	
74	Frontend	<b>Project</b>	15 days	11/7/19/18 8:00 AM	12/7/18 5:00 PM		
75	Frontend	Show Project Bids	7 days	11/19/18 8:00 AM	11/27/18 5:00 PM	Enis Simsar	
76	Frontend	Send Project Bid Popup	7 days	11/19/18 8:00 AM	11/27/18 5:00 PM	Enis Simsar	
77	Frontend	Report Project Page	8 days	11/28/18 8:00 AM	12/7/18 5:00 PM	Enis Simsar	
78	Annotation	<b>Annotation</b>	8 days	11/28/18 8:00 AM	12/7/18 5:00 PM		
79	Annotation	Project Annotation Support	8 days	11/28/18 8:00 AM	12/7/18 5:00 PM	Enis Simsar	
80	Annotation	Portfolio Annotation Support	8 days	11/28/18 8:00 AM	12/7/18 5:00 PM	Ihsan Berkcan Balaban	
81	Android	<b>Android</b>	23 days	11/7/18 8:00 AM	12/7/18 5:00 PM		
82	Android	User	8 days	11/7/18 8:00 AM	11/16/18 5:00 PM		
83	Android	Show User Rating Info	8 days	11/7/18 8:00 AM	11/16/18 5:00 PM	Bahadir Oncel	
84	Android	Report User Page	8 days	11/7/18 8:00 AM	11/16/18 5:00 PM	Batuhan Enes Caglayan	
85	Android	<b>Admin</b>	15 days	11/7/18 8:00 AM	11/27/18 5:00 PM		
86	Android	Reported User Page	8 days	11/7/18 8:00 AM	11/16/18 5:00 PM	Oguzhan Kirlar	
87	Android	Reported Projects Page	7 days	11/19/18 8:00 AM	11/27/18 5:00 PM	Bahadir Oncel	
88	Project	<b>Project</b>	15 days	11/9/18 8:00 AM	12/7/18 5:00 PM		
89	Project	Show Project Bids	7 days	11/19/18 8:00 AM	11/27/18 5:00 PM	Batuhan Enes Caglayan	
90	Project	Send Project Bid Popup	7 days	11/19/18 8:00 AM	11/27/18 5:00 PM	Oguzhan Kirlar	
91	Project	Report Project Page	8 days	11/28/18 8:00 AM	12/7/18 5:00 PM	Bahadir Oncel	
92	Testing	<b>Testing</b>	6 days	12/10/18 8:00 AM	12/17/18 5:00 PM	1:44	
93	Testing	Unit Tests	2 days	12/10/18 8:00 AM	12/11/18 5:00 PM	Each Member	
94	Testing	User Tests	2 days	12/12/18 8:00 AM	12/13/18 5:00 PM	Each Member	
95	Testing	Debugging	2 days	12/14/18 8:00 AM	12/17/18 5:00 PM	Each Member	
96	Milestone	2	1 day	12/18/18 8:00 AM	12/18/18 5:00 PM	92	Each Member
97	Milestone	Launch Presentation	1 day	1/2/19 8:00 AM	1/2/19 5:00 PM		Each Member

Figure 22: Project Plan

## 9 GitHub (Issues, PR's, Projects and Final Report)

- You can reach our issues from [here](#).
- You can reach our pull requests from [here](#).
- You can reach our GitHub project boards from [here](#).
- You can reach our GitHub Final Report from [here](#).

## 10 Evaluation of Tools and Management

### 10.1 Tools

#### 10.1.1 Deployment

We add Git Butler to merging develop to master automatically. When merging is finished, Jenkins builds our projects and run backend and frontend projects.

#### 10.1.2 Testing

You can run our unit tests with the following commands:

```
docker exec -it karpuz_backend_server python manage.py test user  
docker exec -it karpuz_backend_server python manage.py test project
```

#### 10.1.3 API's

We changed our API doc Swagger to Postman. You can access our API doc [here](#)

### 10.2 Project Management

#### 10.2.1 Meetings

As the project advanced, so did our school work and we weren't able to gather outside of the class. On the upside, the class hours worked wonderfully as meeting times for the whole team. We were able to gather around and discuss work done, work to be done, etc. It's just unfortunate that we did not take notes and did not reflect those meetings in Github wiki.

#### 10.2.2 Communication

Schoolwork got more intense as we got closer to the end of the semester, and our friends who did most of the work got in a very hard position since they had way more workload. Inexperienced and irresponsible team members did not help or even respond to our messages, and when they did they were not any help to the actual product development.