

1. **(2 pts) Problem definition: outline the problem requirements and include the application domain and motivations of your project (1 page).**
2. **(4 pts) Application benefits (2 pages): what are the benefits of your application when compared to existing systems. Choose two systems only and include their references.**
 - LinkedIn
 - ZipRecruiter
3. **(4 pts) Functional requirements list (only the ones that you have implemented) for each user role (two exactly). Name each requirement and explain it briefly**

Role: User

Functional Requirements

- Create a profile
- Profile attributes should contain the user's profile picture (optional), name (required), username (required), password (required), date of birth (can be hidden and required), e-mail (can be hidden and required), language proficiencies (optional), resume (optional), previous & current projects (can be hidden and optional)
- List project
- A view of projects listed by other accounts
- The project should be opened or closed: If opened it is visible to everyone and vice versa
- Each project has a tag personal or group: personal will not appear in other user's project view, and a group project will recruit other users from the project view
- Project description
 - General description of the project
 - Language
- Search function
 - Search project by name, language, members

Role: Admin

- Ban profile
- Destroy project listing
- View user information

(b)3+3 pts) For each user role, provide the use case diagram with all the use cases and actors.

(c) (3+3 pts) Describe in detail two use cases using the activity diagram. Choose the most complex use cases.

(d) (6 pts) Software qualities: Correctness, Time-efficiency, and Robustness. Include at least two concrete examples for each quality for each user role. The sign-in and sign-up use cases are excluded from the examples.

- Security
- User-friendliness
- Robustness

4. (29 pts) Top-level and low-level software design:

(a) (5+3 pts) Provide the MVC architecture according to the selected Web framework. Also, describe at least three benefits of MVC for your application.

(b) (8+8 pts) Observer and Factory design patterns. Explain in detail the usability of these two patterns for your specific application. Include the complete class diagram for each pattern. Also provide the algorithms corresponding to the pattern's important methods. For each class, provide the data types of the attributes and prototypes of the methods.

(c) (5 pts) Provide the class diagram of the whole system by incorporating the two design patterns.

Three Tabs

- Newsfeed view
 - Urgent questions chat window
- Personal progress view
- Project finding view

When you add a language to your account, the option to be added to a help channel

Newsfeed/Personal view

Project finding

Create an account page

Profile view