

# Object Oriented Analysis and Design

## Course project - Application and Recruitment Environment

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# 1 Requirements

## 1.1 Problem statement

### 1.1.1 Problem

something about this shit?

### 1.1.2 Solution

something about this shit?

## 1.2 Glossary

something huh

## 1.3 Supplementary specifications

something huh

## 1.4 Use-case model



Hình 1: Use-case model

### 1.4.1 View profile

**Description:**

- As a visitor or logged in user, views the profile information of other users on the system.
- Depending on the permission level, the information that are made available is different.

**Actors:**

- Visitor.
- Applicant.
- Employer.
- Administrator.
- User database.

**Trigger:**

- Users clicking on another user's name or profile picture within the website.
- Users visiting the direct link to another user's profile page.
- Logged in users clicking on their own profile picture.

**Preconditions:**

- The user exists in the user database with their basic information
- The user's account is not locked.

**Postconditions:**

- The user is presented with the profile.
- Sections and options are provided based on authentication status, permissions and available information.
- The visit gets logged if the profile owner chose to do so (for statistical reasons).

**Flow of events:**

- User click on another user's feature (e.g., name, avatar) within the site (in post, feeds, suggestions).
- The system determines what data get shown and what get hidden based on the permission level and authentication status.
- The information is displayed.

**Alternative flows:**

- Flow 1:
  - The user clicks on their own profile.
  - The page is displayed with all available information with ability to edit the information stored.
- Flow 2:
  - The user clicks a link from a different website linking to the user profile.
  - The system determines what data get shown and what get hidden based on the permission level and authentication status.
  - The information is displayed.

**Exception flows:**

- Flow 1:

- The owner blocked public visitors from seeing their profile.
- The site displays an error message.
- Flow 2:
  - User clicking a link.
  - The user does not exist in the database.
  - The site displays an error message.

#### 1.4.2 Create Account

##### Description:

- As a visitor, create an account on the system in order to access its personalized features, or features that requires identity confirmation.

##### Actor:

- Visitor.
- Authentication backends.

##### Trigger:

- User wanting to logs into the system when they don't have an existing account.

##### Precondition:

- User does not have an account.
- User has internet connection.

##### Postcondition:

- User gets logged into the application.
- Basic user authentication information is written into the database.

##### Flow of events:

- User accesses the website
- User intentionally opt to register / User attempts to access a website part that requires authentication
- User inputs basic information such as their email address, name and password of choice
- Authentication systems sent an email to the chosen inbox.
- User verifies by opening their email inbox and click the link
- The system saves the user's sign in information and ask for extra information as needed

**Alternative flows:** None.

##### Exceptions:

- User does not have internet connection.
  - User cannot register.
- User already have an account associated with an email.
  - Notifies user and offer to reset password.
- User fails to confirm their password.
- User's email is blocked from registering.

##### Business rules:

- Deny account registration if there are more than three registration attempts from the same computer within the span of a day (24 hours).

##### Non-functional requirements:

- User passwords are hashed with a salt for security.

### 1.4.3 Login

**Description:**

- As an existing user (applicant, employer or admin), login to an existing account.

**Actor:**

- Applicant.
- Employer.
- Admin.
- Authentication backends.

**Trigger:**

- User choosing to login on the interface
- User visiting contents that requires authentication

**Precondition:**

- User already have an account in the authentication database.
- User account have proper permissions to login.
- User has internet connection.

**Postcondition:**

- User gets logged in to the account.
- The activity is logged into the user's Activity Log.

**Flow of events:**

- User choose to login from the user interface or access a page that requires authentication.
- The system checks for any existing session token on the device.
- The user provides their email address and password of their choosing.
- The system compares the information the user provides with what is stored in the authentication database.
- The system logs the user in and set a session token on the device.

**Alternative flows:** None.

**Exceptions flow:**

- If the system found an existing session token on the device, instead of prompting the user for the account info, logs the user in if the token is valid.
- If the user-provided information is not correct, prompt the user and offer password reset.
- If the account is blocked from login, notifies the user and sign out automatically.
- If the user does not have internet connection before the data is sent to the server, the system will cache the data.

#### 1.4.4 Update profile

**Description:**

- User go to profile page and update information. New information will be saved and displayed on profile page after user click update button.
- This feature apply to both employer and applicant.

**Actor:**

- Applicant or employer.

**Trigger:**

- User wanting to update profile information.

**Precondition:**

- User has an account (not administrator account).
- User logged in.
- User has internet connection.

**Postcondition:**

- User profile information is updated.

**Flow of events:**

- User go to profile page.
- User update new information. User can add new section information (e.g. education, experience, etc.) or update existing information.
- User click update button.
- System save new information.
- System display new information on profile page.

**Alternative flow:**

- User click cancel button.
- System display old information on profile page.

**Exception flow:**

- User has no internet connection.
- System display error message.

**Business rules:**

- User can only update information of his/her own profile.

**Non-functional requirements:** None

#### 1.4.5 Apply into job description post

**Description:**

- User go to job description post page and apply for the job. User can apply for multiple jobs.
- This feature apply to applicant only.

**Actor:**

- Applicant.
- Backend system.

**Trigger:**

- User wanting to apply for a job in a job description post.

**Precondition:**

- User has an applicant account.
- User logged in.
- User has internet connection.

**Postcondition:**

- User apply for a job in a job description post.

**Flow of events:**

- User go to job description post page.
- User click apply button.
- System shows a textbox for user to write a cover letter or simply a message/comment (optional).
- System save user's application.
- System send notification to employer and applicant to confirm.

**Alternative flow:**

- User click cancel button.
- System display job description post page.

**Exception flow:**

- User has no internet connection.
- System display error message.

**Business rules:**

- Each user can apply for only onetime in a job description post.

**Non-functional requirements:** None**1.4.6 Interact with job description****Description:**

- User go to job description post page and interact with the job description post. User can like, dislike, comment the job description post.
- This feature apply to both applicant and employer.

**Actor:**

- Applicant or employer.
- Backend system.

**Trigger:**

- User wanting to interact with a job description post.

**Precondition:**

- User has an account (not administrator account).
- User logged in.
- User has internet connection.



**Postcondition:**

- User's interaction with a job description post is saved and displayed.

**Flow of events:**

- User go to job description post page.
- User click like, dislike button or leave a comment.
- System save user's interaction.
- System display user's interaction on job description post page.

**Alternative flow:**

- User stop commenting on job description post.
- System display job description post page.

**Exception flow:**

- User has no internet connection.
- System display error message.

**Business rules:**

- User can only have one like or dislike on a job description post.
- User can leave multiple comments on a job description post.

**Non-functional requirements:** None

#### 1.4.7 Post job description

**Description:**

- Employer click create recruitment announcement and post a job description. Employer can post multiple job descriptions.
- This feature apply to employer only.

**Actor:**

- Employer.
- Backend service and database.

**Trigger:**

- Employer wanting to post a job description for recruitment.

**Precondition:**

- Employer has an employer account.
- Employer logged in.
- Employer has internet connection.

**Postcondition:**

- Employer post a job description for recruitment.

**Flow of events:**

- Employer click create recruitment announcement button.
- Employer fill in job description information.
- Employer click post button.

- System save job description information.
- System display job description post page.

**Alternative flow:**

- Employer stop editing job description information and close browser/tab or direct to another site or press cancel button.
- System display a warning message to ask employer whether to save a draft or not.
- Employer choose to save a draft or not. If yes, system save job description information as a draft in user's local storage. If no, system discard job description information.

**Exception flow:**

- Employer has no internet connection.
- System auto save job description information as a draft in employer's profile page by caching the draft in employer's device.
- System display error message.

**Business rules:**

- Employer can only post one job description in a recruitment announcement.
- Employer can post multiple job descriptions in multiple recruitment announcements.

#### 1.4.8 View job description post

**Description:**

- User go to job description post page and view the job description post.

**Actor:**

- Applicant.
- Employer.
- Administrator.
- Visitor.
- Backend service and database.

**Trigger:**

- User wanting to view a job description post.
- User search for a specific job description post.

**Precondition:**

- User has internet connection.
- Database service is available.

**Postcondition:**

- Job description post is displayed.

**Flow of events:**

- User goes to the website.
- User type a keyword related to the job in the search box.
- The website displays several job descriptions posts.
- User selects a job description post.

- The website displays the full job description post.

**Alternative flow:**

- Flow 1:
  - User goes to the website.
  - User type a keyword related to the job in the search box.
  - The website displays several job descriptions posts.
  - User selects a job description post.
  - The website displays the full job description post.
- Flow 2:
  - User click on a link to a job description post.
  - The website displays the full job description post.

**Exception flow:**

- Flow 1:
  - User cannot find any job description posts.
  - Display a notification message.
- Flow 2:
  - User accesses a deleted job description post.
  - Display an error message.

**Business rules:**

- User cannot access a deleted job description post.

#### 1.4.9 Edit Job description post

**Description:**

- Employer wants to change the content of a job description post.

**Actor:**

- Employer.
- Backend service and database.

**Trigger:**

- Employer wants to change the content of a job description post.

**Precondition:**

- Employer has an employer account.
- Employer logged in.
- Employer has internet connection.
- Employer is viewing his/her job description post.

**Postcondition:**

- Employer has changed the content of a job description post.

**Flow of events:**

- User accesses the website.
- User selects a job description post.

- User click edit button.
- User modifies the content of the job description post.
- User saves the changes.
- The change has updated on the system.
- System display job description post page.

**Alternative flow:**

- User accesses the website.
- User selects a job description post.
- User click edit button.
- User modifies the content of the job description post.
- User close browser/tab or direct to another site or press cancel button.
- System display a warning message to ask user if the user wants to keep editing. If yes, the browser cancel closing/redirect keep editing. If no, system discard the changes.

**Exception flow:**

- User attempt to open more than 1 editor for 1 post at a time point.
- Display an error message.

**Business rules:**

- User can only open an editor for one post at a time point.
- User cannot edit other employer's job description posts.

#### **1.4.10 Delete Job description post**

**Description:**

- User, as an employer, delete a job description posts.
- User, as an administrator, delete a post that is considered not a job description.

**Actor:**

- Employer.
- Administrator.
- Backend service and database.

**Trigger:**

- A job description post has expired or no longer needed.

**Precondition:**

- User has an internet connection.
- User has an employer/administration account.
- User logged in.
- The employer owned the job description post (this is not required for administration).

**Postcondition:**

- A job description post is removed from the database.

**Flow of events:**

- User accesses the website.
- User selects a description post or view a description post.
- User selects the remove option.
- The system ask for confirmation.
- The description post is removed from the database.

**Exception flow:**

- User attempt to delete a deleted job description post.
- Display an error message.

**Business rules:**

- User can use only one delete request on one job description post.
- User cannot delete other employer's job description post (except administrator).

#### 1.4.11 Delete Account

**Description:**

- The user can delete their account along with their associated data from the respective databases of the site.
- An administrator can delete a user's account upon their request or due to site rules violations.

**Actor:**

- Employer.
- Applicant.
- Administrator.
- Backend authentication.

**Trigger:**

- The user selecting the option to delete their account.
- An admin deleting an account from administration tools.

**Precondition:**

- The user is logged in and able to access their account settings.
- An administrator is authorized to manage user accounts.
- Employer or Applicant has internet connection.

**Postcondition:**

- The user login info and user data are deleted from all systems.
- The user may or may not re-register an account with the same email.

**Flow of events:**

- The user logs into their account.
- The user opens the account settings.
- The user chooses to delete their account.
- The user confirms with their password.
- The system verifies the password and ask for confirmation.

- The system deletes the user's data and authorization information.

**Alternative flow:**

- An admin logs into his/her account.
- The admin selects a user account and choose the option to delete it.
- The system asks if the user should be able to recreate an account with the same email.
- The system asks for confirmation.
- The system logs the deletion in the Audit log and sets a flag if the user is denied from re-registering.

**Exception flow:**

- Flow 1:
  - The user has no internet connection.
  - The system displays an error message.
- Flow 2:
  - The user fails to verify their password upon deletion.

#### 1.4.12 Searching tool

**Description:**

- User search information from the website about job descriptions, employers, and applicants.

**Actor:**

- Applicant.
- Employer.
- Administrator.
- Visitor.
- Backend search engine.

**Trigger:**

- User wants to search for information about a typical job, an employer, or an applicant.

**Precondition:**

- User has internet connection.

**Postcondition:**

- The website displays several results about the information user is looking for.

**Flow of events:**

- User accesses the website.
- User clicks the search bar and type keywords in the search box.
- The website displays several results about the information user is looking for.

**Alternative flow:**

- User click on a link to a search result.
- The website displays several results about the information user is looking for.

**Exception flow:**

- The search engine does not find any information.
- The system displays a message not finding any job description post or employer or applicant.

**Business rules:**

- The search engine will search for information in the database.
- The search engine will search for information in the job description post, employer, and applicant.

