Bilkent University

Department of Computer Engineering

CS 491 - Senior Design Project I

Project short-name: Recroute

Project Analysis Report

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Project Analysis Report

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This report is submitted to the Department of Computer Engineering of Bilkent University in partial fulfillment of the requirements of the Senior Design Project course CS491/2.

Table of Content

1. Introduction

Due to the digitalization of today's world and the pandemic process that has dominated the world for a while, most things have started to be done through online platforms. For these reasons, many transactions such as job interviews and tests measuring technical skills were conducted face-to-face in the past, now carried out through various digital platforms. However, there is no platform to handle all aspects of this process such as meetings between company and the applicant or tests that the applicant must complete before being accepted by the companies.

Normally, recruiters use different platforms at different stages in this process. They find the candidates from a platform, test these candidates with the help of other platforms and meet with those candidates from other online platforms. The fact that all these stages are carried out on different platforms and regulated manually creates a serious workload for recruiters. In order to reduce this problem and help companies, we aim to make all these stages easier and faster on a single platform named Recroute and reduce the workload of recruiters.

This report is the analysis report for Recroute which will convey the design and implementation ideas for Recroute in an understandable manner. Our system models are explained through various UML diagrams. The report also contains analysis of Recroute’s social impact, our team work and feasibility constraints.

2. Current System (if any)

In the current system there is no platform which combines the recruitment process. Companies use different platforms at different stages in this process. LinkedIn, kariyer.net and similar platforms are used for creating and publishing job adverts. Candidates apply to the job adverts from these platforms. After that, companies choose some of these candidates and continue the recruitment process by testing those applicants. In order to test these applicants companies are using either their own tests or they ask applicants to solve a test from another platform such as Hackerrank and Codility to test their technical proficiency.By examining the results of the test, they decide which candidates should go to the next stage. For the candidates who are in the last stage(interview stage), personal interview times are determined and the meetings are arranged via the Zoom or other online meeting platforms. The details of the meeting were sent to the candidates via email manually.

3. Proposed System

3.1 Overview

Recroute is an online recruitment platform that facilitates the stages in the recruitment process. This platform allows recruiters to test and evaluate job applicants on a single system. We aim to automate the arrangement of these stages via our recruitment flow.

Our recruitment flow consists of creating application forms, creating tests to measure technical proficiency and interviewing the applicants. Companies can create application forms for a job advert and those who apply to this advert can reach the form and fill it. In addition to that, candidates can be found from LinkedIn with the aid of Recroute Chrome extension. Recroute Chrome extension is an extension for Google Chrome which helps recruiters to send direct messages from customizable templates. Extension will add a send message button for each LinkedIn profile.

Our platform provides two alternatives to fill the application form. First alternative is that applicants can apply with a resume. Our platform will use NLP to get the necessary information from the resume and then use this information to fill the application form. If there would be any missing fields after this process, the platform will ask the applicant to fill it herself. The second alternative is that applicants can apply with their LinkedIn account. At this point, our platform will get the necessary information from LinkedIn. Again if there are missing fields after this, the platform will ask applicants to fill the missing fields. If an applicant has no resume or LinkedIn account to fill the form, he/she can manually fill fields in the form. After that, the company can filter the applicants according to their attributes such as graduated university or GPA.

In our platform, companies can test the applicants according to the company's needs. If the company wants, the remaining applicants of the filtering process of the previous part can be directed to tests. These tests can be created by the company or the company can use another test which is already present in the system. These tests may include open-ended, single choice and coding questions which will measure the technical skills of the applicant. Coding questions will be answered through an integrated code editor that supports a wide range of programming languages. Code snippets then will be executed in a sandbox development service on a server. After the candidates complete the test, their results will be shared with the company and those who have the necessary qualifications will be transferred to the next stage. At this point, our platform will predict the source code quality with machine learning techniques and static analysis. [1]

After tests are done, companies can create online meetings via the Zoom platform with the applicants and finalize the recruitment process. Again the online meeting is not mandatory and in addition to that companies can specify the orders of this process such as first creating an online meeting and then creating the test.

3.2 Functional Requirements

- Recruiters will be able to create application forms by combining necessary questions (experience, skills etc.)
- Recruiters will be able to generate URL links for their application forms and share it with potential applicants via a communication channel.
- Recruiters will be able to search people by applying necessary filters. After listing the results, they will be able to send an invitation email to the application form they created.
- Recruiters will be able to create proficiency tests by combining open-ended, single choice and coding questions. There will be a question pool where recruiters can choose necessary questions among them to create tests.
- Recruiters will be able to create Zoom meetings for interviews with the applicant.
- Recruiters will be able to create recruitment flows for their job advert. These flows will consist of an application form, proficiency tests and interviews.
- Recruitment flows can be automated like rejecting all applicants without proper experience or passing all applicants with a specific skill to the next process.
- Recruiters will be able to see all applicants in a tabular format.
- Recruiters will be able to filter and search by any attribute in tables.
- There will be an action button whose purpose is passing selected applicants to the next process in the recruitment flow. If the next process is a proficiency test, it will send mail to the applicant with a link to the test. If the next process is an interview, the application will create a Zoom meeting and send it to the applicant via mail.
- Applicants will be able to fill application forms on their own, or they can apply with their LinkedIn accounts or resumes to prepopulate possible fields of the form.
- Recruiters will be able to see applicants' performance on coding tests such as code quality, run time, memory usage etc.
- Recruiters will be able to see which applicants are rejected or passed in which process.

3.3 Nonfunctional Requirements

3.3.1 Performance

- Application should be quick and responsive in order to provide a user friendly experience. Clients should be able to access and send data to the server in less than 1 second response time.

3.3.2 Scalability

- Application should be able to handle 1000 users simultaneously without delays as the platform is designed to be a social platform that will be heavily used by clients.
- Number of application servers should be able to increase if there is a heavy load on a server.

3.3.3 Availability

- Application should be available to use %98 of the time in a month because it will handle most of the recruitment process of a company.

3.3.4 Extensibility

- Main idea behind the application is to improve user experience over the recruitment process, thus, the application should be open to upgrades and changes according to the user feedback.

3.3.5 Privacy and Security

- Application should provide an information of applicant to a recruiter only if applicant applies for an advert created by that recruiter.
- Application should keep sensitive data encrypted.
- Application should use TLS v1.1 or higher version to provide a secure communication between client and server.
- Sandbox development environment (Coding question processor service) should be safe in order to block incoming attacks from applicants. Sandbox environment should not have administrative permissions and it needs to run on another physical machine than the main application server for any incoming attacks.

3.4 Pseudo Requirements

3.4.1 Implementation Requirements

- Git will be used for the version control system and corresponding repositories will be contained in Github.
- React.js library will be mainly used for frontend development. Implementation with React.js environment consist of Javascript, HTML and CSS usage.
- Backend development will be on Java Spring Framework.
- Chrome Extension API will be used to implement extension for LinkedIn

3.4.2 Economic Requirements

- The application will be free to use for applicants.
- Application will be software-as-a-service(SaaS) for companies thus it will be a subscription based platform.
- APIs such as LinkedIn API and Zoom API are free to use.
- Rest of the development tools are also available for free usage.

3.4.3 Sustainability Requirements

- According to user feedback, modifications on the application should be done to meet user requirements.
- As the application will be SaaS, it should be able to handle multiple requests from a large number of users without a delay.

3.4.4 Time Requirements

- A Fully functioning application should be implemented early before the CSFair 2022 to emulate the user experience on the system and enhance the application as it needs.

3.5 System Models

3.5.1 Scenarios

Scenarios for the Applicant

Scenario 1
Use Case: Fill the application form
Primary Actor: Applicant
Entry Condition: Applicant navigates to the link of the specified job advert.
Exit Condition: Applicant clicks the submit button.
Main Flow of Events:

1. Applicant fills the application form manually.
2. Applicant clicks the submit button.

Alternative Flow of events:

1. Applicant fills the application form by uploading a resume or with information in her/his LinkedIn account.
2. Applicant fills the missing fields manually.
3. Applicant clicks the submit button.

Scenario 2
Use Case: See the accept/reject status
Primary Actor: Applicant
Entry Condition: Applicant has already applied to job advert.
Exit Condition: Applicant closes the mail about accept/reject status on relevant stage.
Main Flow of Events:

1. Applicant opens the relevant mail.
2. Applicant see if he/she is accepted or not for the next stage.
3. Applicant closes the mail.

Scenario 3
Use Case: Join the test
Primary Actor: Applicant
Entry Condition: Applicant has already passed the previous stages.
Exit Condition: Test period expires or the applicant submits the test.
Main Flow of Events:

1. Applicant navigates to the test link.
2. Applicant complete the test.
3. If there is a coding part, the applicant executes his/her code snippets to see the output.

4. Applicant clicks the submit button.

Scenario 4
Use Case: Execute the code snippets
Primary Actor: Applicant
Entry Condition: The applicant is in the test stage of recruitment flow.
Exit Condition: The test completion time has expired or the applicant completes the coding part.
Main Flow of Events:

1. The applicant answers coding questions through an integrated code editor.
2. Code snippets is executed in a sandbox development service on a server
3. The applicant sees the output of the code.

Scenario 5
Use Case: Join the interview
Primary Actor: Applicant
Entry Condition: Applicant has already passed the previous stages.
Exit Condition: Meeting is terminated by the company.
Main Flow of Events:

1. Applicant joins the meeting by clicking the Zoom link.
2. Applicant conducts interviews with the people from the company.
3. The meeting is terminated at the end of the interview period.

Scenarios for the Company

Scenario 1
Use Case: Sign up
Primary Actor: Company
Entry Condition: Company clicks to sign up button.
Exit Condition: Company clicks the submit button.
Main Flow of Events:

1. Company clicks the sign up button.
2. Company fills the required information.
3. Company clicks the submit button

Scenario 2
Use Case: Log in
Primary Actor: Company
Entry Condition: Company is registered in the system.
Exit Condition: Company clicks the login button.
Main Flow of Events:

1. Company enters the username and password.
2. Company clicks the login button.
3. Company is navigated to profile page.

Scenario 3
Use Case: Create a job advert
Primary Actor: Company
Entry Condition: Company is registered in the system.
Exit Condition: Company clicks the submit button.
Main Flow of Events:

1. Company clicks the create job advert button.
2. Company prepares a job advert with detailed information about the specified position.
3. Company clicks the submit button.

Scenario 4
Use Case: Create an application form
Primary Actor: Company
Entry Condition: Company is registered in the system.
Exit Condition: Company clicks the submit button.
Main Flow of Events:

4. Company clicks the create application button.
5. Company specifies the required information that will be taken from the applicants.
6. Company clicks the submit button.

Scenario 5
Use Case: Test the applicants
Primary Actor: Company
Entry Condition: Job advert is created and there are applicants for the specified job advert.
Exit Condition: The validity date of the test has expired.
Main Flow of Events:

1. Company creates a new test.
2. Company notifies applicants to complete the test until a specified date.
3. The validity period of the test expires.
4. Test results are shared with the company.

Alternative Flow of Events:

1. Company selects an existing test from the system.
2. Company notifies applicants to complete the test until a specified date.
3. The validity period of the test expires.

4. Test results are shared with the company.

Scenario 6
Use Case: Create a test
Primary Actor: Company
Entry Condition: Company is registered in the system.
Exit Condition: Company clicks the save button.
Main Flow of Events:

1. Company clicks the create a test button.
2. Company prepares a new test for job advert.
3. The new test can be added to test stage of the job advert via ‘add’ button
4. Company clicks the save button.

Scenario 7
Use Case: Use existing tests in the system
Primary Actor: Company
Entry Condition: Company is registered in the system.
Exit Condition: Company clicks the save button.
Main Flow of Events:

1. Company clicks the ‘view tests’ button.
2. Company selects tests among the existing tests in the system.
3. The selected test can be added to test stage of the job advert via ‘add’ button
4. Company clicks the save button.

Scenario 8
Use Case: Create recruitment flow
Primary Actor: Company
Entry Condition: An application form is created for the relevant job advert.
Exit Condition: Company clicks the save button.
Main Flow of Events:

1. Company navigates to the creating recruitment flow page.
2. Company selects the job advert to which the created recruitment flow will be applied.
3. Company specifies the order of stages in the recruitment flow for the job advert.
4. Company clicks the save button.

Scenario 9
Use Case: See the applicants
Primary Actor: Company
Entry Condition: An application form is created for the relevant job advert.
Exit Condition: Company clicks the close button.

Main Flow of Events:

1. Company navigates to the specified job advert page.
2. Applicants in different stages are shown on the tables.
3. Company can filter the applicants according to the features they specify.
4. Company clicks the close button to be redirected to the home page.

Scenario 10
Use Case: Interview applicants
Primary Actor: Company
Entry Condition: Online meeting is created.
Exit Condition: Online meeting is terminated.
Main Flow of Events:

1. Zoom link is sent to the applicant via email.
2. Applicant and recruiters join the meeting.
3. After asking the necessary questions, the interview ends.

Scenario 11
Use Case: View the test results
Primary Actor: Company
Entry Condition: The validity period of the test has expired.
Exit Condition: Company closes the result page.
Main Flow of Events:

1. Company navigates to the test results page.
2. Results are shown to the company in a tabular form.
3. If there is a coding part in the test, the company can also see the source code quality of the participants in that part.
4. Company clicks the close button.

Scenario 12
Use Case: Transfer successful applicants to the next stage
Primary Actor: Company
Entry Condition: The stage applicants are currently in has been completed.
Exit Condition: A new table is populated with people transferred to the next stage.
Main Flow of Events:

1. New table is created for the next stage.
2. Company clicks the action button and transfers the people who meet the predetermined criteria to the table in the next stage.
3. Company notifies applicants about their accept/reject status for the next stage via email.
4. Company clicks the close button.

Alternative Flow of Events:

1. New table is created for the next stage.
2. Company manually selects the applicants who will be transferred to the next stage.
3. Company notifies applicants about their accept/reject status for the next stage via email.
4. Company clicks the close button.

Scenario 13
Use Case: Notify applicants about the accept/reject status
Primary Actor: Company
Entry Condition: A table containing the participants who will go to the next stage has been created.
Exit Condition: Company sends mail to accepted applicants.
Main Flow of Events:

1. According to the results in the table, an e-mail is sent to the person stating whether he/she has passed to the next stage.
2. The accepted participants are informed about the next stage.

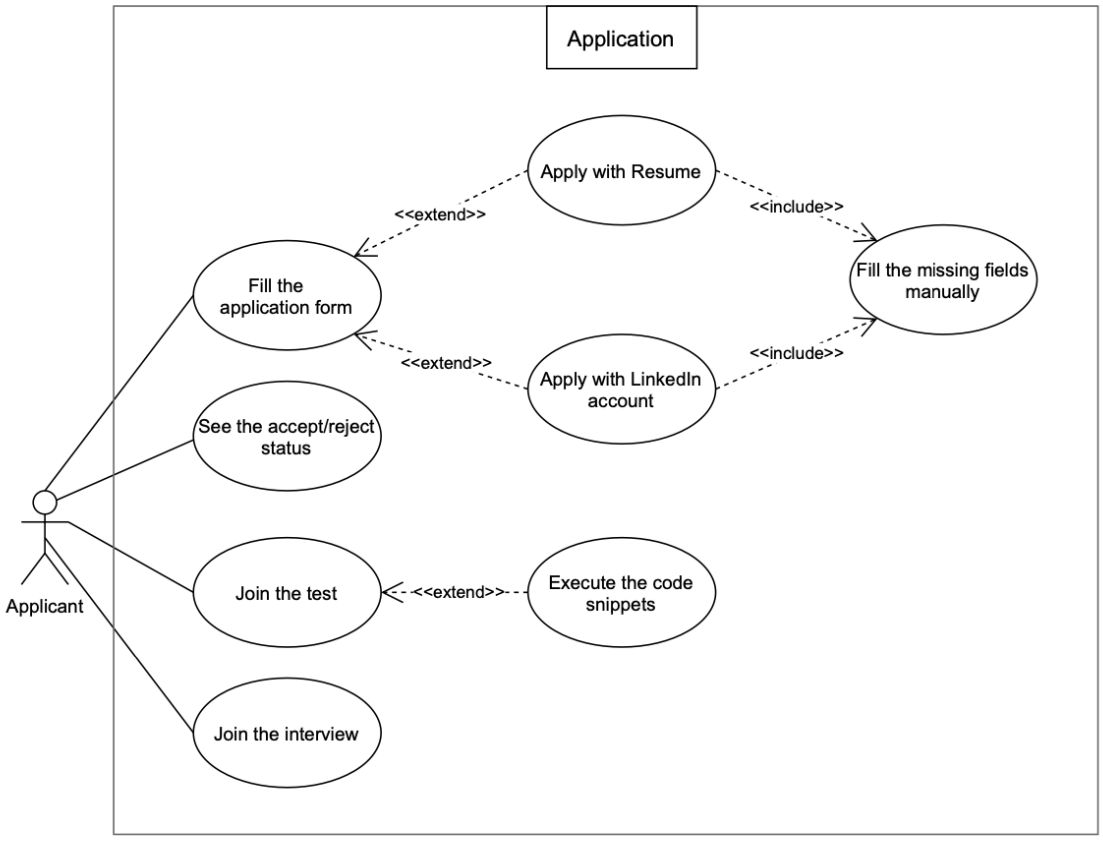
Scenario 14
Use Case: Search people by filtering
Primary Actor: Company
Entry Condition: Application form has been created.
Exit Condition: Company closes the head-hunting page.
Main Flow of Events:

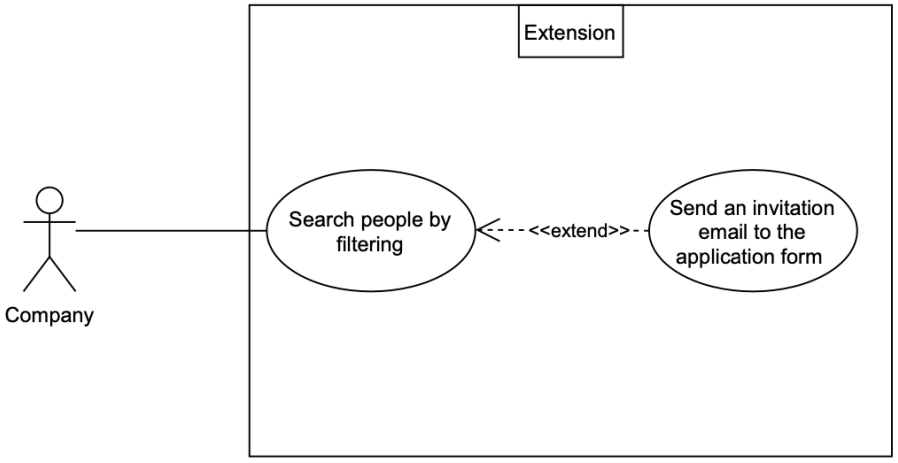
1. Company searches people by filtering them according to the features they have determined in the job advert.
2. The company sends an invitation email with the link of the application form to the recommended people.
3. Company clicks the close button to close the head-hunting page.

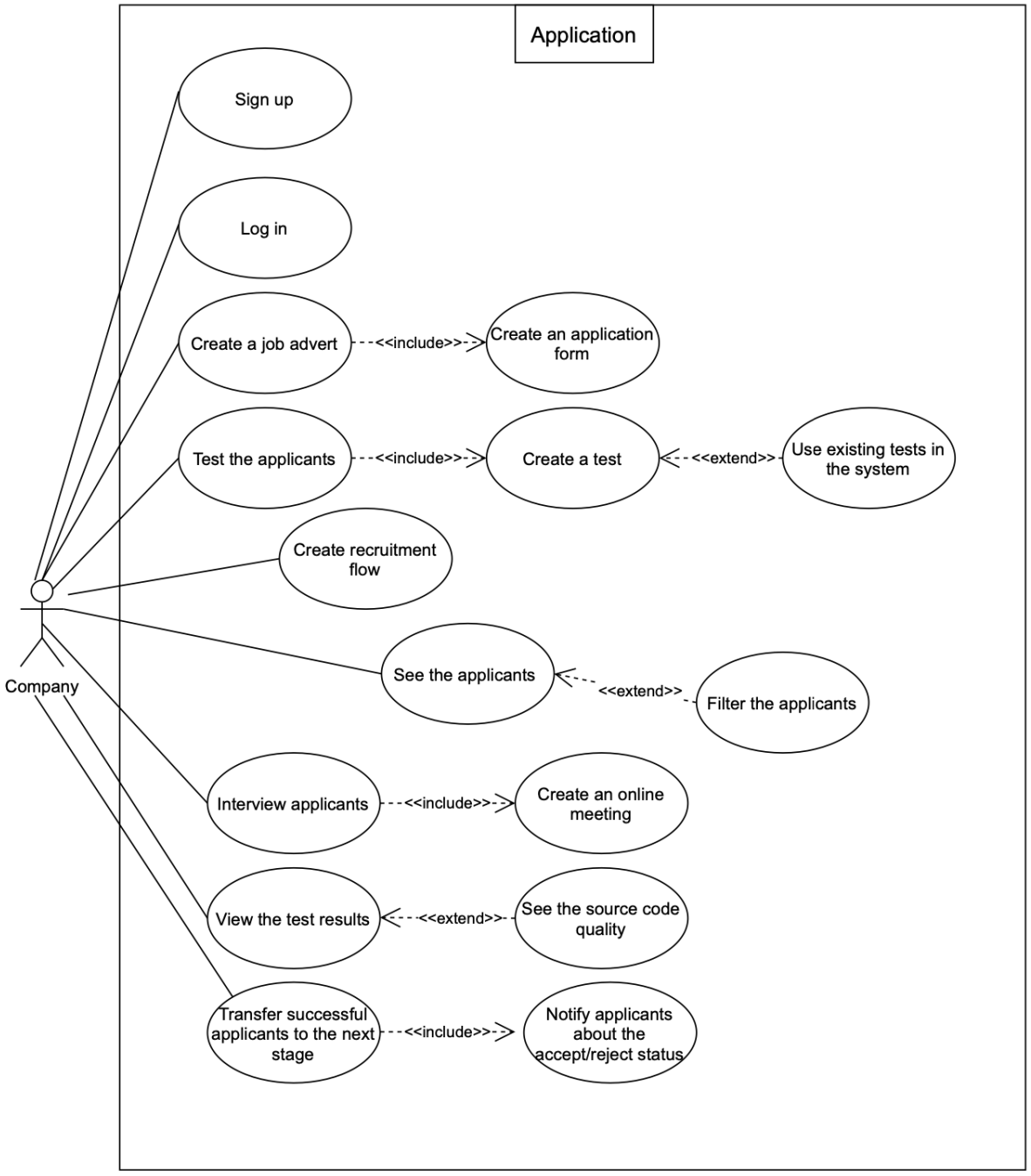
Scenario 15
Use Case: Send an invitation email to the application form
Primary Actor: Company
Entry Condition: Application form has been created.
Exit Condition: Invitation mail sent successfully.
Main Flow of Events:

1. Company prepares a message from customizable templates
2. Company sends the invitation message with an application form link to the applicants via email.

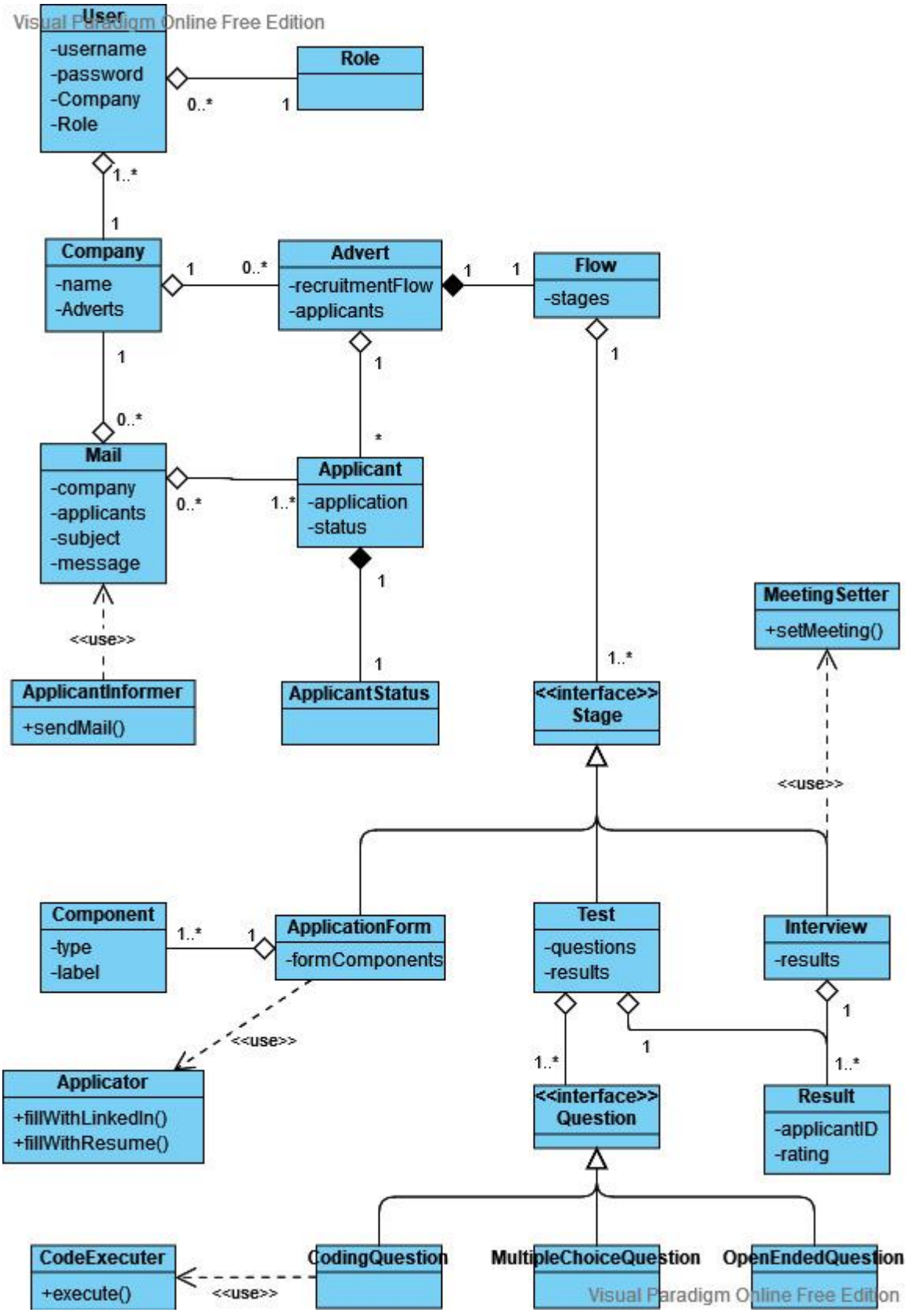
3.5.2 Use Case Model



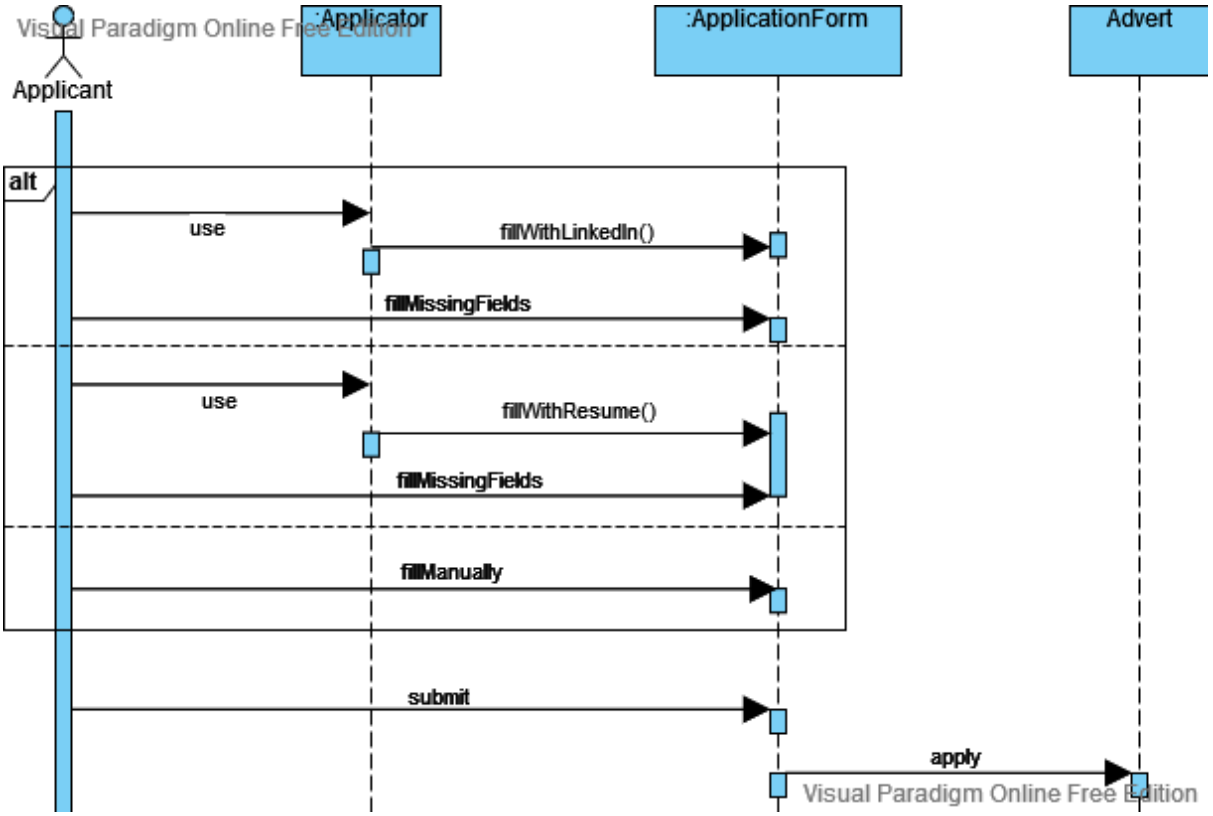



Application
Sign up
Log in
Create a job advert
<<include>>
Create an application form
Test the applicants
<<include>>
Create a test
<<extend>>
Use existing tests in the system
Create recruitment flow
Company
See the applicants
<<extend>>
Filter the applicants
Interview applicants
<<include>>
Create an online meeting
View the test results
<<extend>>
See the source code quality
Transfer successful applicants to the next stage
<<include>>
Notify applicants about the accept/reject status

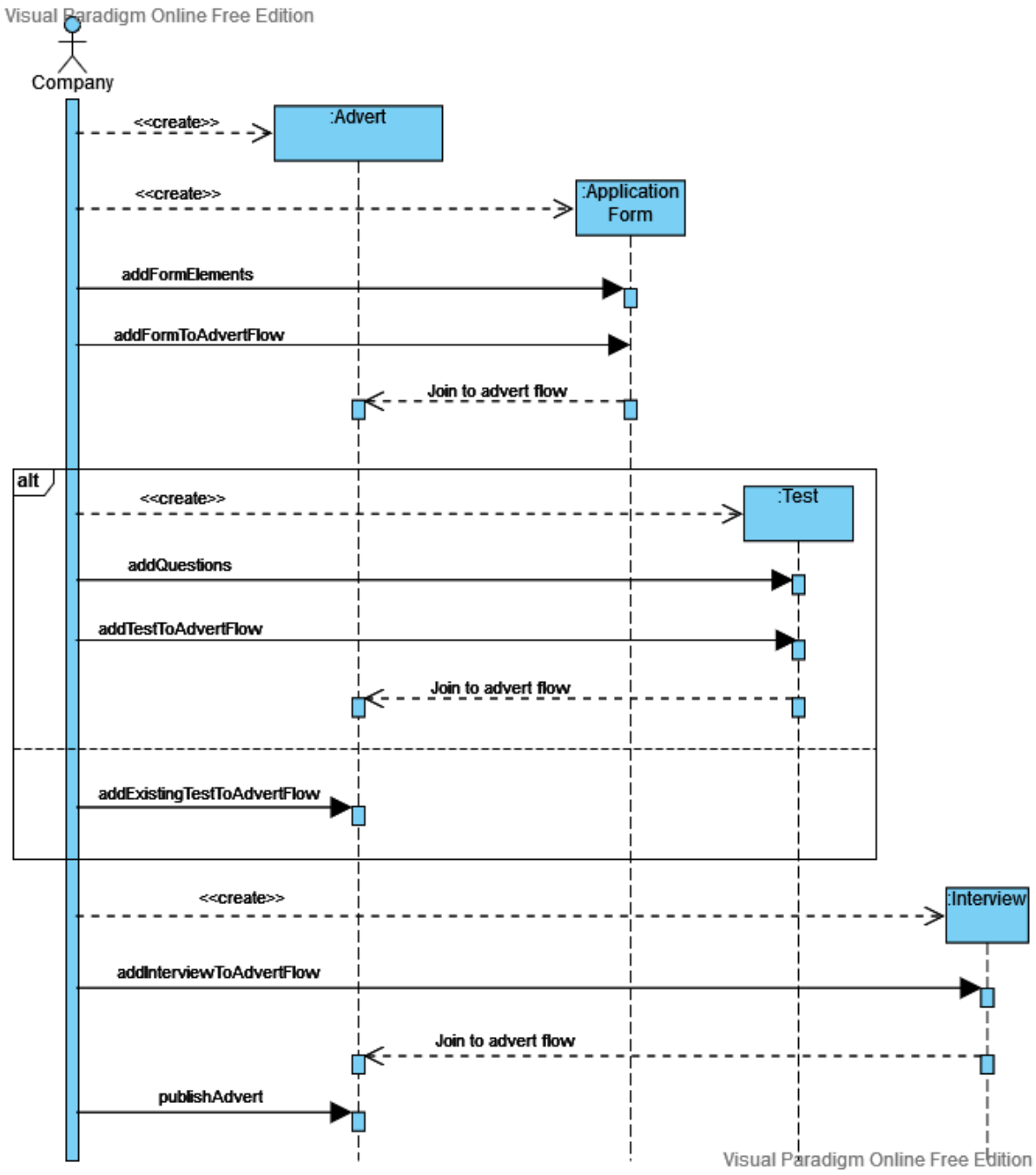
3.5.3 Object and Class Model



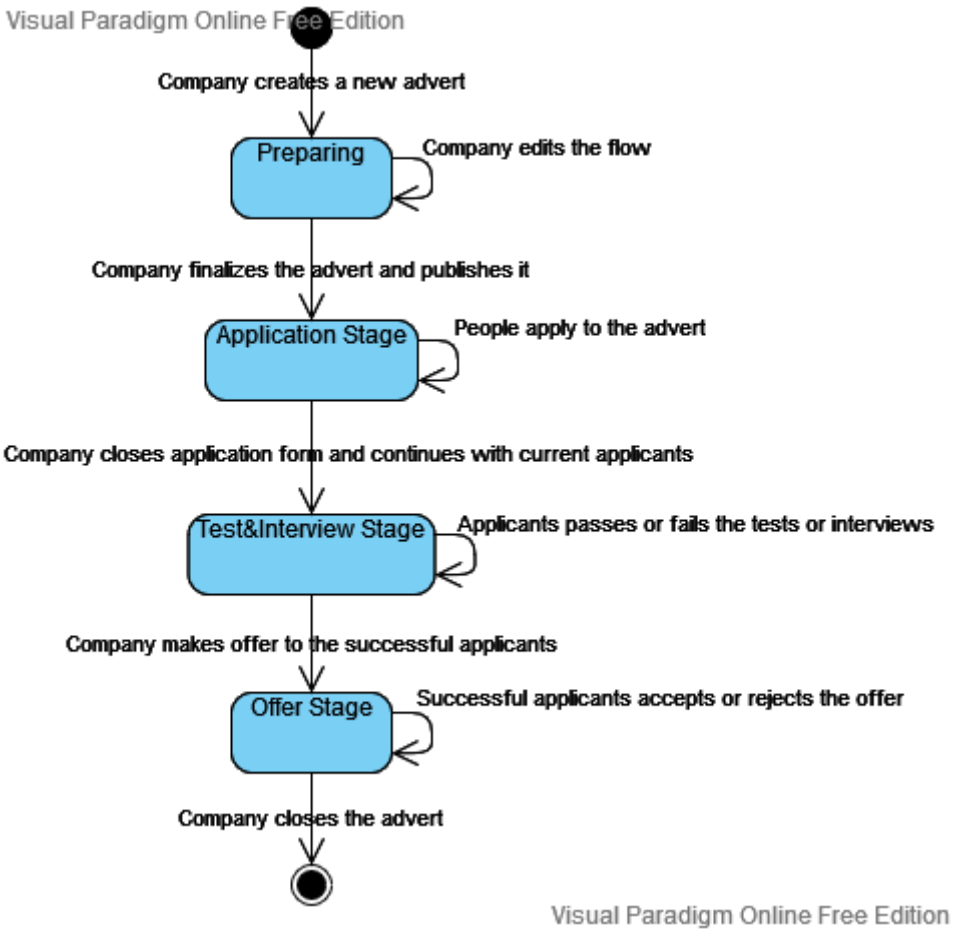
3.5.4 Dynamic Models



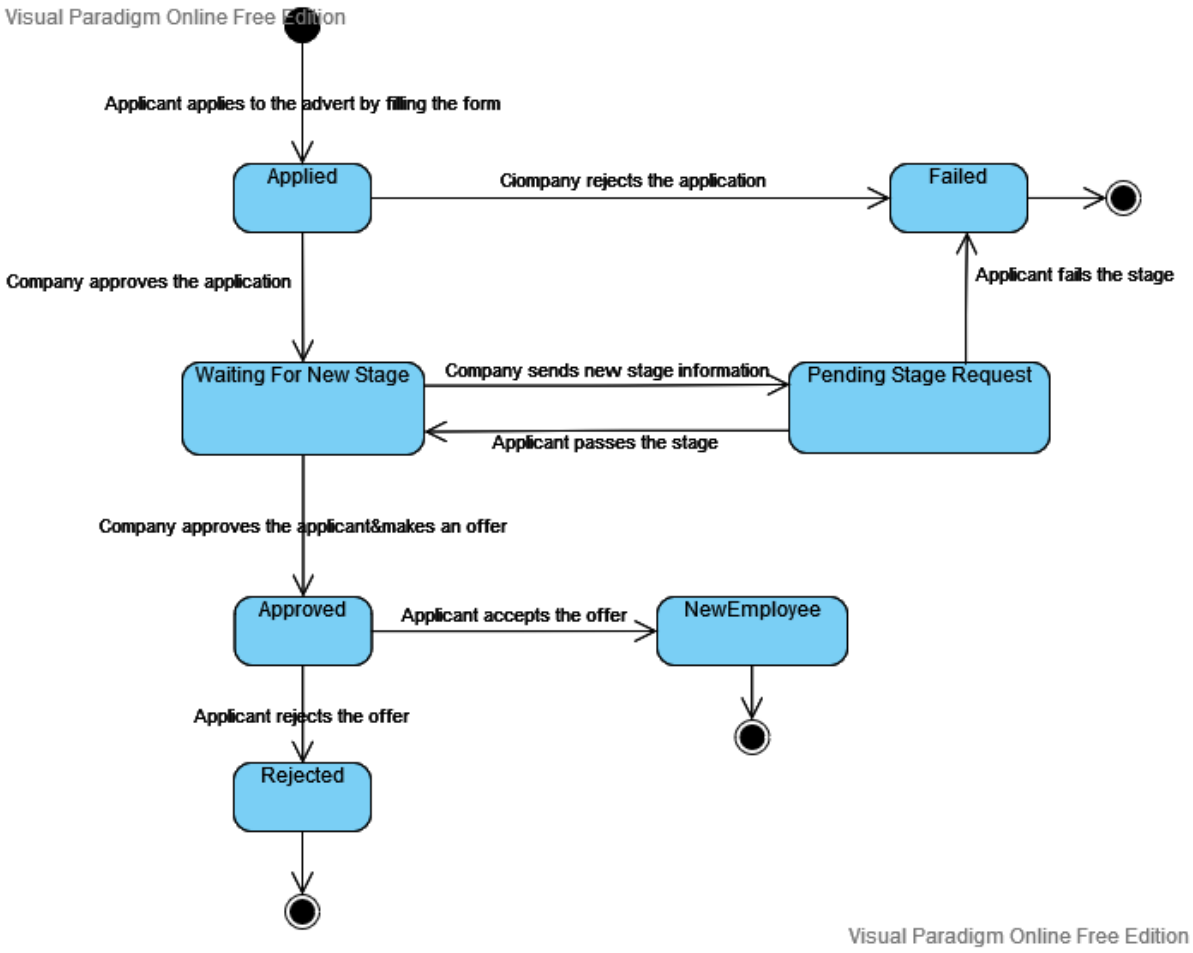
Filling Application Form - Sequence Diagram



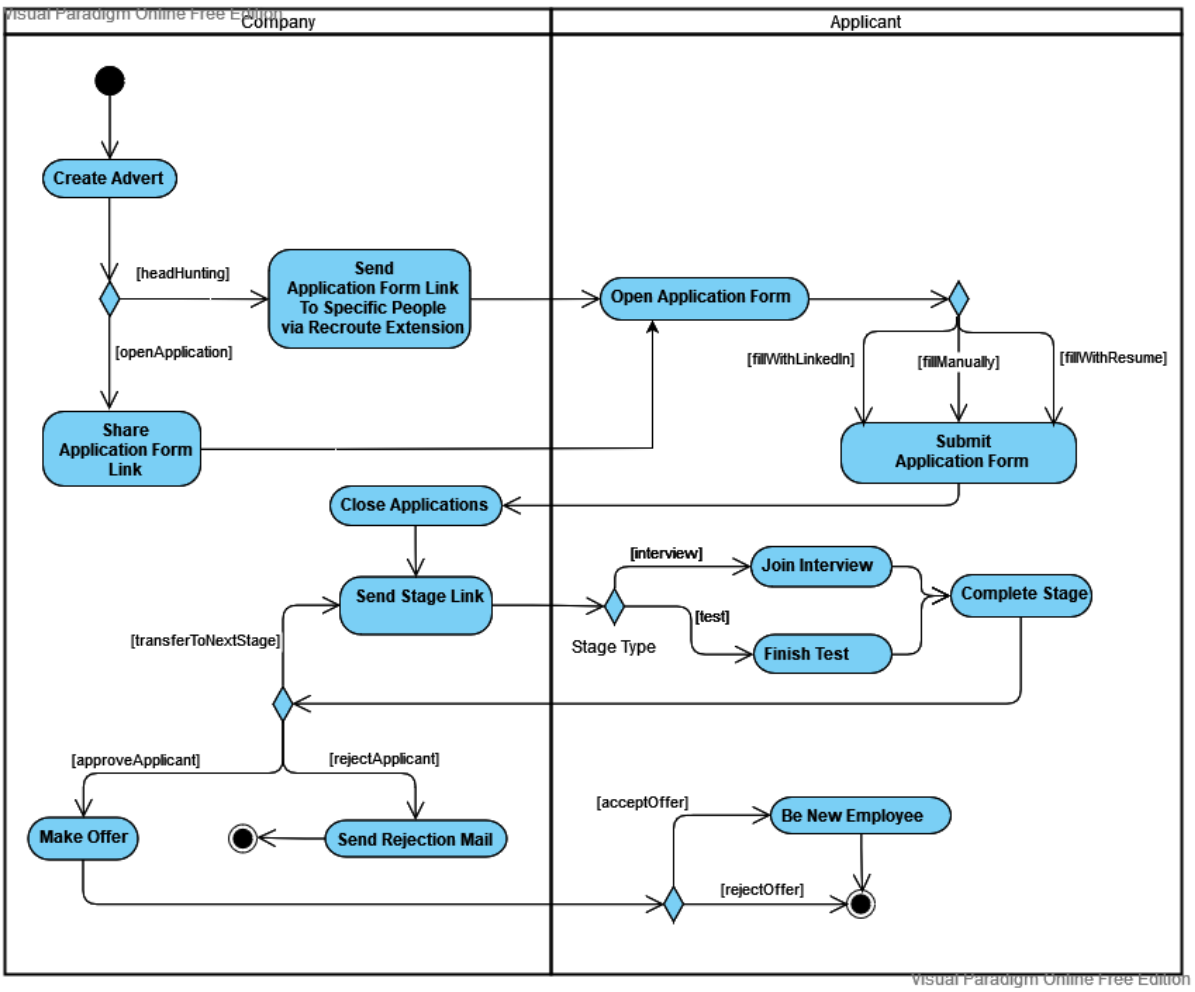
Creating Advert - Sequence Diagram



Advert - State Diagram



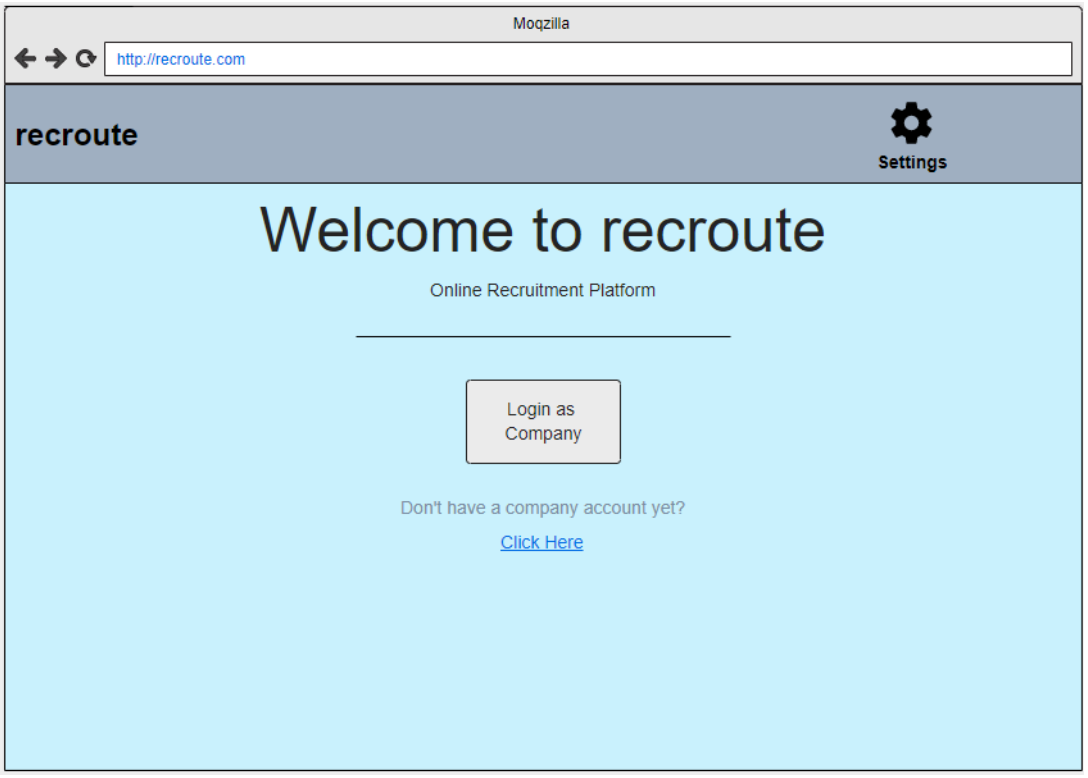
ApplicantStatus - State Diagram



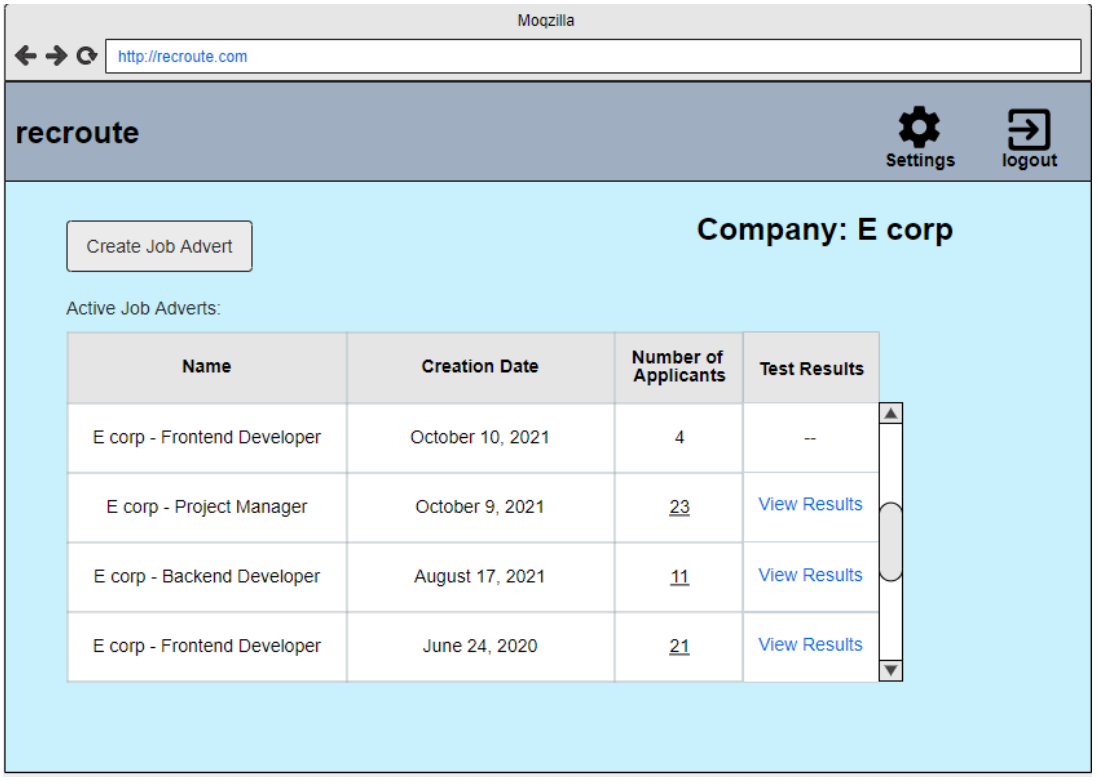
Advert Flow - Activity Diagram

3.5.5 User Interface - Navigational Paths and Screen Mock-ups

This is the login page of the Recroute.

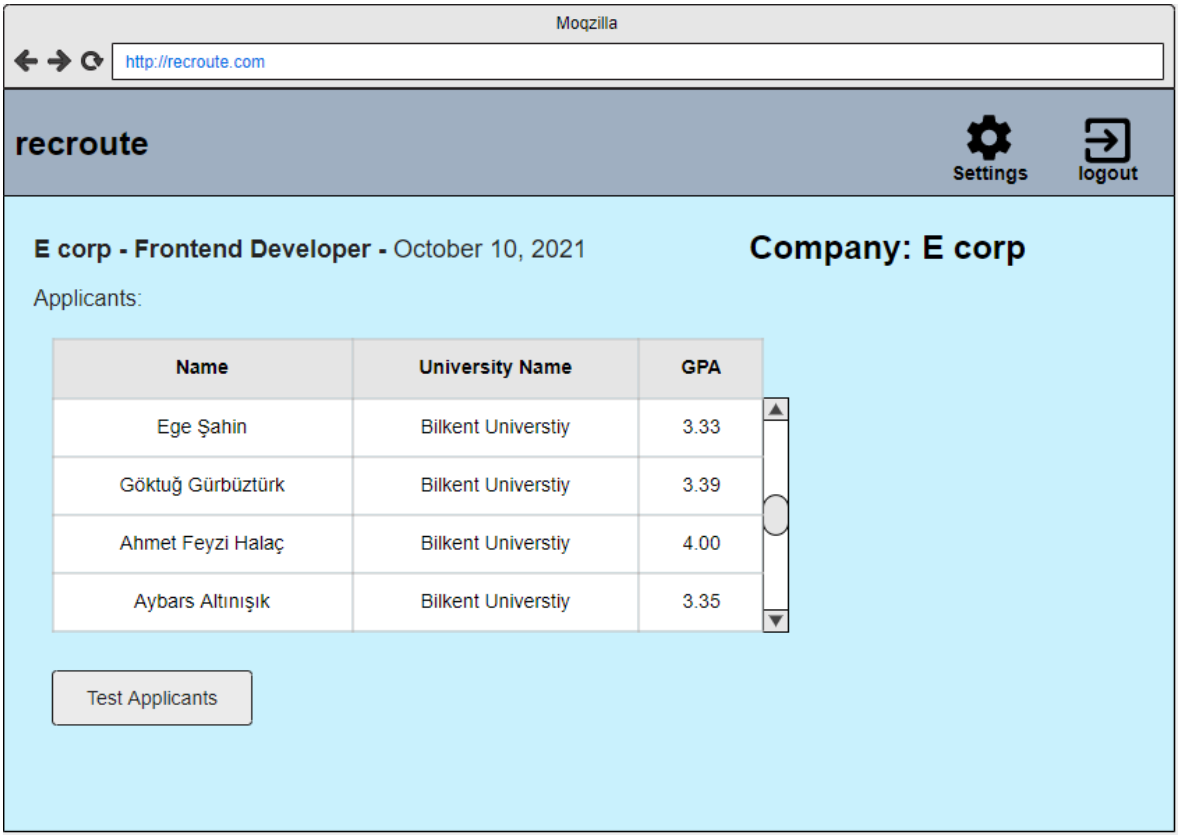


After a Company logins to Recroute system, the main page will be displayed.



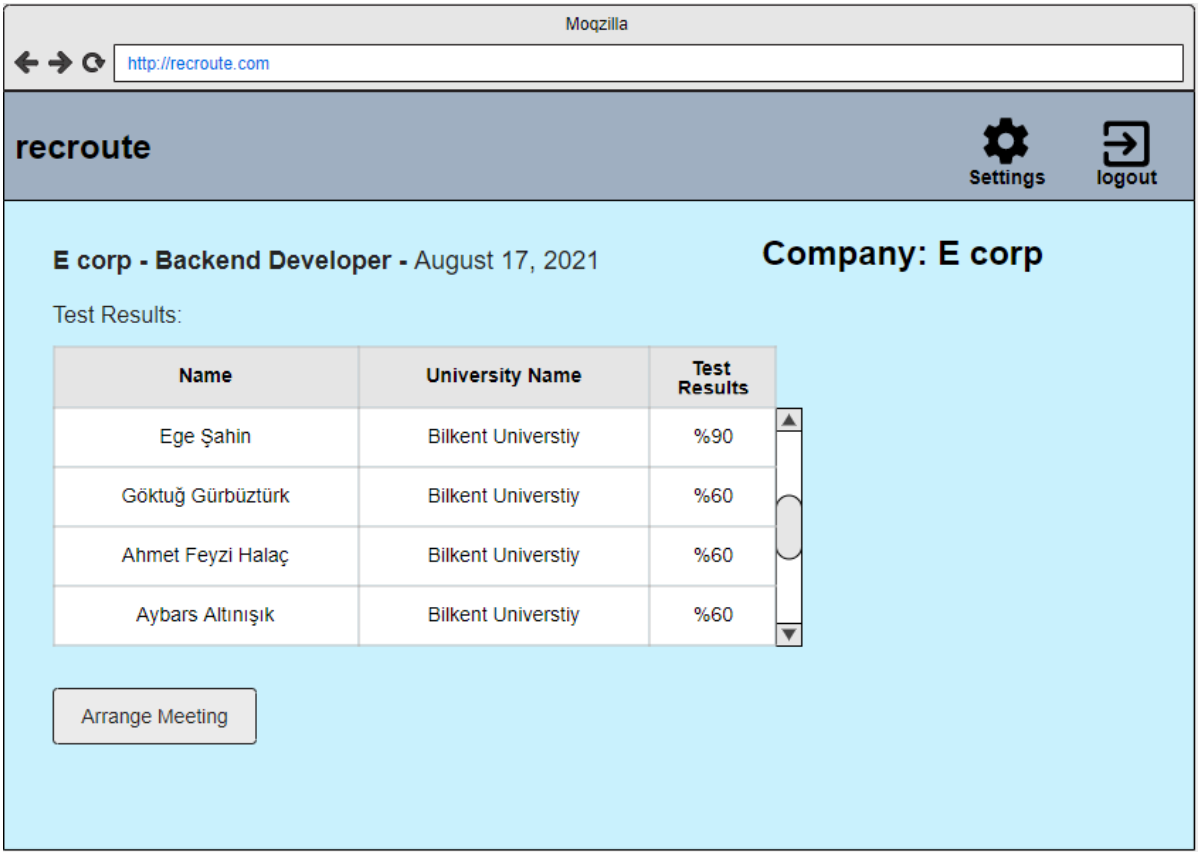
At this screen, the company can view its active job adverts and create a new job advert. Whenever the create job advert button is clicked the system will automatically generate an application form link. Applicants will use this link to reach the form.

From the main page, companies can click an active job advert and see information about applicants.



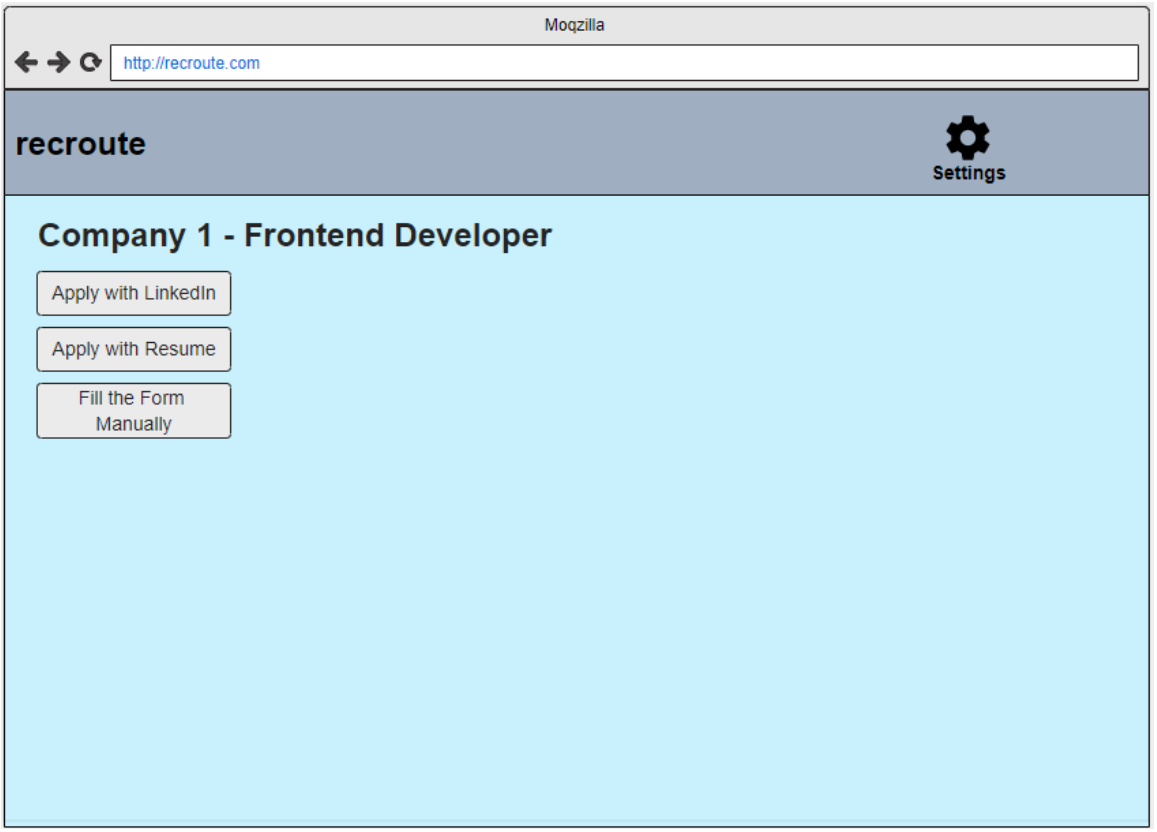
If the applicants of this advert have not been tested yet, user can click on the test applicants button and send the test to applicants.

If the applicants have already been tested, in the main menu user can click on the view results link for a specific job advert and see the results of the test.

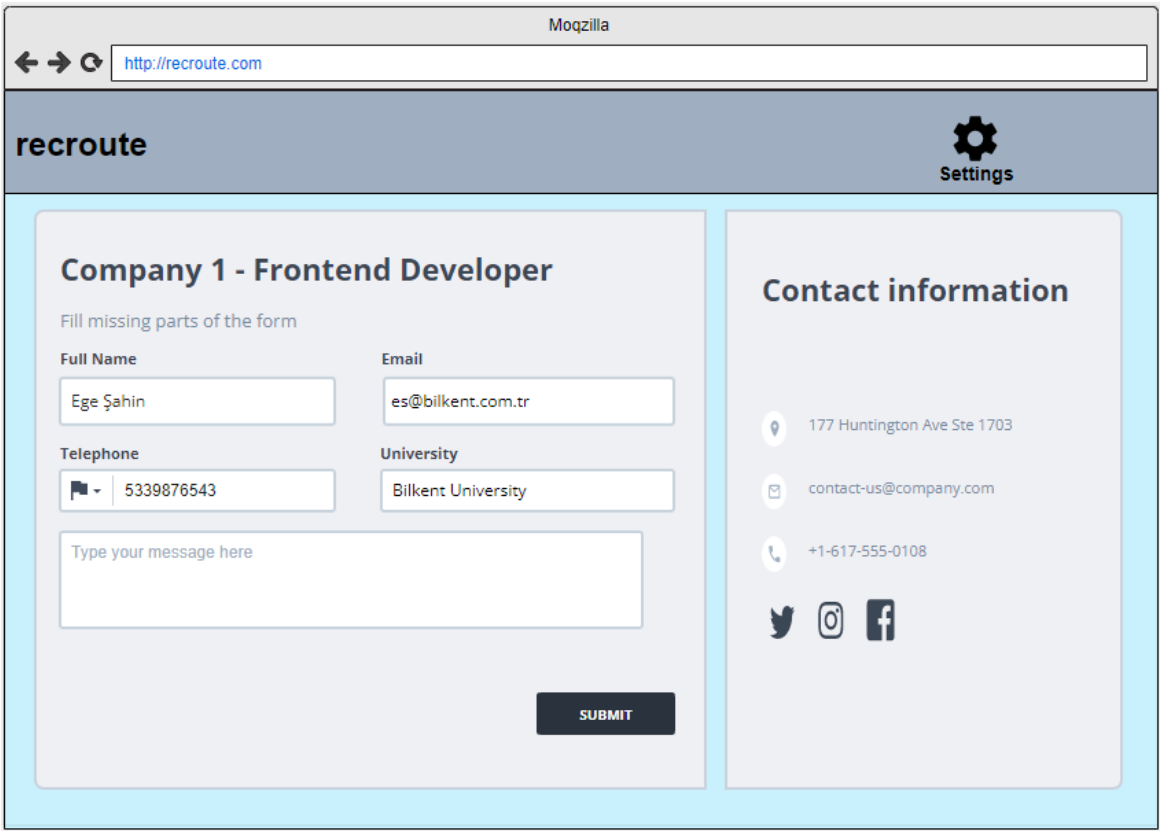


At this point the company can arrange meetings with the tested applicants.

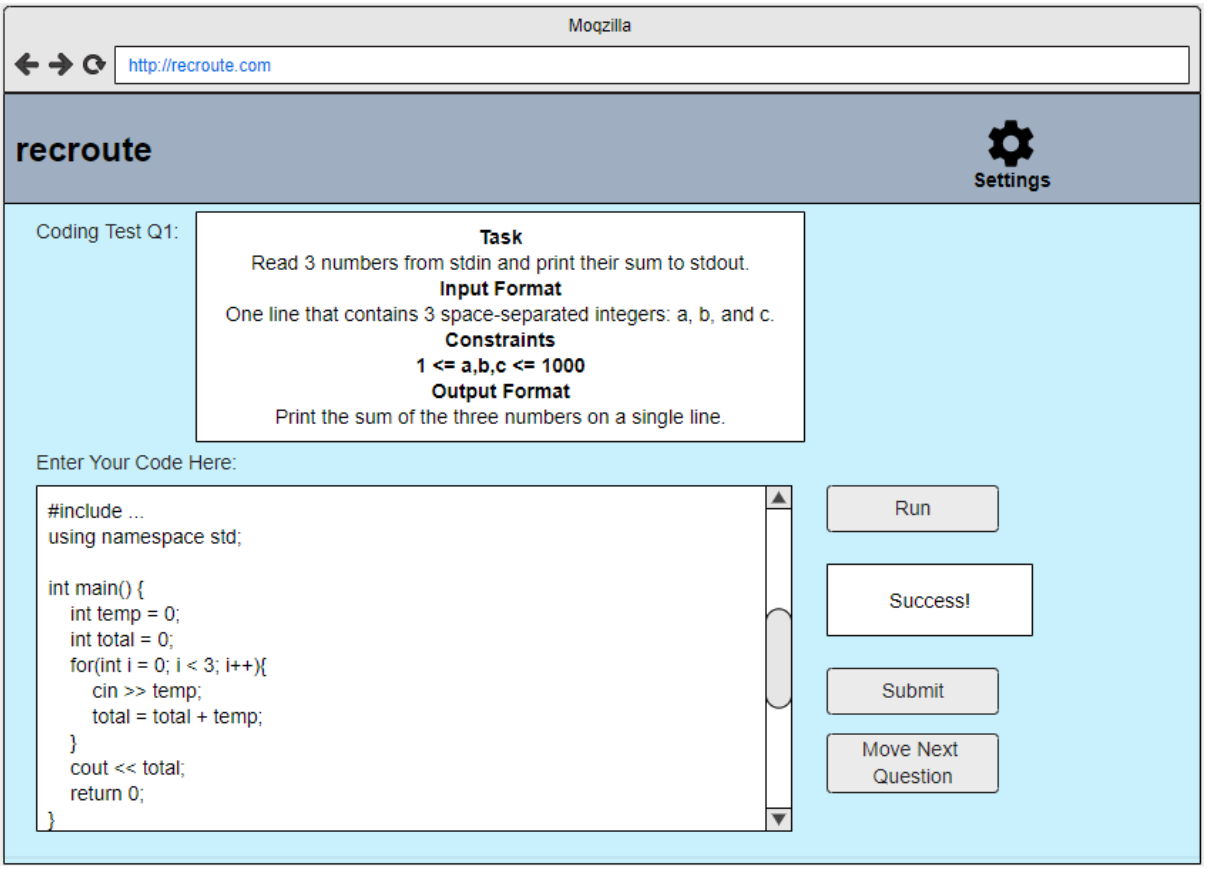
Whenever an applicant clicks the link created by the company when creating a job advert, the applicant will be directed to this screen:



Applicants have three choices to apply.



Example coding test:



4. Other Analysis Elements

4.1 Consideration of Various Factors in Engineering Design

Recroute is an online platform which combines the different recruitment steps into a single platform. Therefore, it does neither affect nor is affected by public health,public safety and public welfare in any way at all. Also environmental and economic factors are irrelevant for the design of Recroute.

Global Factors:
Recroute is imagined as an online platform to be used by companies and applicants around the world. However, people speak different languages around the globe. This is why the general interface of the Recroute will be English so that people from different countries can interact with the platform.

Cultural Factors:
In different parts of the world, information shared by the applicants through the internet might be different from other parts of the world. This is why the privacy boundaries of different cultures need to be respected while designing Recroute.

Social Factors:
In Recroute platform, while people are applying to a job advert they share personal information through the system. In designing Recroute, the security of this information must be maintained.

Table 1: Factors

	Effect Level	Effect
Public Health	0	-
Public Safety	0	-
Public Welfare	0	-
Global Factors	4	Interface should be English
Cultural Factors	9	Privacy
Social Factors	9	Data protection
Environmental Factors	0	-
Economic Factors	0	-

4.2 Risks and Alternatives

There are three different risk factors we may face during this project.

First risk is about schedule flaws. We will adopt an agile methodology throughout the project in order to minimize the effects of schedule flaws. By doing so, we can ensure that most important features of our application will be implemented first. However, in case of a problem which will make it impossible to complete all the requirements, we will skip non-critical parts of our application, such as code quality analyzer with machine learning, in order to come up with a viable product.

Second risk is about data privacy. Since our application will be a recruitment platform, it is expected to collect personal information from applicants. So, in order to maintain the privacy of these personal information, we will follow sector standards to ensure security. If a company wants to encrypt their data even after these security protocols we will use, we will ask them to specify an encryption key so that all the personal information about their advert will be encrypted with the key they specified. In this way, this personal data can be viewed only by people who have the private decryption key.

Third risk is about people who may try to abuse the coding questions by running malicious scripts instead of a solution to the problem. For this feature, we will use

third party applications to run the specified code snippet in a dedicated server. So, in case of a malicious code, we will try to execute that users' test immediately and prevent further attacks to our application.

Risk	Likelihood	Effect on the project	B Plan Summary
Schedule Flaws	Medium	Cannot achieve the desired product on deadlines	Agile methodology and non-critical feature reduction.
Personal Data Leak	Low	Violation of the law, unreliability of application	Using sector standards about privacy, implementing extra encryption functionality for companies.
Malicious Code Execution	High	Usage of the application for different, probably malicious purposes.	Not allowing users to execute any additional malicious code after first detection, probably by closing the current session of the user and banning.

4.3 Project Plan

WP#	Work package title	Leader	Members involved
WP1	Project Specifications Report	Aybars Altınışık	All Members
WP2	Project Website	Ahmet Feyzi Halaç	All Members
WP3	Analysis Report	Göktuğ Gürbüztürk	All Members
WP4	High-Level Design Report	Ege Şahin	All Members
WP5	First Prototype	Aybars Altınışık	All Members
WP6	Chrome Extension	Ahmet Feyzi Halaç	All Members
WP7	Low-Level Design Report	Göktuğ Gürbüztürk	All Members
WP8	Minimum Viable Product	Ege Şahin	All Members
WP9	Final Product	Aybars Altınışık	All Members
WP10	Testing	Göktuğ Gürbüztürk	All Members
WP11	Final Report & Presentation	Ege Şahin	All Members

WP 1: *Project Specifications Report*			
Start date: *06.10.2021* **End date:** *11.10.2021*			
Leader:	*Aybars Altınışık*	**Members involved:**	*All Members*
Objectives: *Initial work to identify project requirements, professional & ethical responsibilities and constraints.*			
Tasks: ***Task 1.1 Functional Requirements :*** *Identifying the functional requirements.* ***Task 1.2 Non-Functional Requirements:*** *Identifying the non-functional requirements.* ***Task 1.3 Constraints:*** *Identifying the constraints.*			
Deliverables ***D1.1:*** *Project Specification Report*			
WP 2: *Project Website*			
Start date: *11.10.2021* **End date:** *18.10.2021*			
Leader:	*Ahmet Feyzi Halaç*	**Members involved:**	*All Members*
Objectives: *Creating the website of the project for delivering necessary information such as reports.*			
Tasks: ***Task 2.1 Picking a Host and Domain*** **:** *Deciding the host and domain for the website* ***Task 2.2 Deciding on the Theme*** **:** *Picking a template for the website*			
Deliverables ***D2.1:*** *Website for the project*			
WP 3: *Analysis Report*			
Start date: *01.11.2021* **End date:** *15.11.2021*			
Leader:	*Göktuğ Gürbüztürk*	**Members involved:**	*All Members*
Objectives: *Having a comprehensive analysis of the project so that the design and implementation of the project goes as smoothly as possible.*			

Tasks:

***Task 3.1 Analyzing the current systems*:** *The purpose is to learn the current system and to differentiate the project from the current systems.*

***Task 3.2 Planning proposed system*:** *The purpose is to decide on the functionalities and the models of the system.*

***Task 3.3 Analyzing environmental conditions* :** *The purpose is to analyze the environmental conditions that may be risky for the development of the project.*

Deliverables

D3.1: *Analysis Report*

WP 4: *High-Level Design Report*

Start date: *14.11.2021* **End date:** *24.12.2021*

Leader:	*Ege Şahin*	**Members involved:**	*All Members*

Objectives: *Having a comprehensive design of the project so that the main components of the implementation will be determined.*

Tasks:

Task 4.1 Architecture: *The purpose is to decide on which architecture we will implement our project.*

Task 4.2 System Models: *The purpose is to enhance previous system models so that they can be used with implementation.*

Deliverables

D4.1: *High-Level Design Report*

WP 5: *First Prototype*

Start date: *15.11.2021* **End date:** *Before the demo and presentation*

Leader:	*Aybars Altınışık*	**Members involved:**	*All members*

Objectives: *Implementing a basic functioning prototype of the application.*

Tasks:

***Task 5.1 Implementation of Frontend* :** *Implementation of the basic functioning user interface.*

***Task 5.2 Implementation of Backend*:** *Implementation of the basic functioning backend services and database.*

Deliverables

D5.1: *First prototype of the application.*

WP 6: *Chrome Extension*

Start date: *15.11.2021* **End date:** *Before the demo and presentation*

Leader:	*Ahmet Feyzi Halaç*	**Members involved:**	*All Members*

Objectives: *Implementing the Chrome extension for LinkedIn profiles. It will basically add a button to the LinkedIn profile when visited and send an invitation mail for an advert when clicked.*

Tasks:

***Task 6.1 Investigating Chrome Extension Documentation*:** *Learning how to implement a Chrome extension from scratch and how to use the API of it.*

***Task 6.2 Adding New Button to LinkedIn Profiles* :** *Implementing initial version of extension by adding button to the profiles.*

***Task 6.3 Adding Functionality to Button* :** *Connecting button to the backend of the project so that it will list adverts of the company and company will select one of the adverts to send an invitation mail to the person.*

Deliverables

D6.1: *Chrome Extension of Recroute*

WP 7: *Low-Level Design Report*

Start date: *1st week of spring semester* **End date:** *3rd week of spring semester*

Leader:	*Göktuğ Gürbüztürk*	**Members involved:**	*All Members*

Objectives: *Creating the low-level design report*

Tasks:

Task 7.1 Architecture **:** *The purpose is to specify the architecture that will be used in the implementation phase.*

Task 7.2 System Models **:** *The purpose is to clearly show the system models that will be used during the implementation phase.*

Deliverables

D7.1: *Low-Level Design Report*

WP 8: *Minimum Viable Product*			
Start date: *End of the fall semester* **End date:** *5th week of spring semester*			
Leader:	*Ege Şahin*	**Members involved:**	*All Members*
Objectives: *Extended version of first prototype.*			

Tasks:

Task 8.1 Critical Features: *The purpose is to add the critical features to have the project work.*

Task 8.2 Changes: *The purpose is to change the first prototype according to the feedback received.*

Deliverables

D8.1: *Minimum Viable Product.*

WP 9: *Final Product*			
Start date: *5th week of spring semester* **End date:** *11th week of the spring semester*			
Leader:	*Aybars Altınışık*	**Members involved:**	*All members*
Objectives: *Finalizing the implementation stage of the project.*			

Tasks:

Task 9.1 Completion of Implementation **:** *Completing implementation of project including all features of the application before extensive testing stage.*

Deliverables

D9.1: *Final Product*

WP 10: *Testing*

Start date: *11th week of the spring semester* **End date:** *12th week of the spring semester*

Leader:	*Göktuğ Gürbüztürk*	**Members involved:**	*All Members*

Objectives: *Testing the functionality of the final product.*

Tasks:

Task 10.1 Unit Testing **:** *Testing the individual behavior of UI elements and basic building blocks.*

Task 10.2 End-to-End Testing **:** *Testing the combined behavior of the basic building blocks from scratch. Whole application process will be tested against different scenarios.*

Deliverables

D10.1: *New bugs that need to be resolved, if there are any.*

WP 11: *Final Report & Presentation*

Start date: *After testing stage* **End date:** *Before CSFair 2022*

Leader:	*Ege Şahin*	**Members involved:**	*All members*

Objectives: *Providing a detailed explanation of the result project.*

Tasks:

Task 11.1 Presentation **:** *Providing a detailed explanation of the result project*

Task 11.2 Final Architecture**:** *Explaining final architecture of the project.*

Task 11.3 Maintenance Plan: *The future maintenance plan of the project.*

Deliverables

D11.1: *Final Report*

D11.2: *Presentation*

4.4 Ensuring Proper Teamwork

As the Recroute team, we believe that the road to ensuring proper teamwork is through healthy communication. To do that we use different applications to communicate with each other such as discord and WhatsApp. We meet at least once a week and discuss our progress that week. In these meetings we talk about the next steps about our project, make important decisions and assign new tasks to team members fairly. We try to finish the work before deadlines so that in case of a problem other team members can also help fixing that problem. Also, all of our team members have previously worked on many course projects together. We know each other's working habits and assign the tasks accordingly so we can use everybody's strong sides while working on our project.

Another caution we take to ensure proper teamworks is that we assign huge or difficult tasks to multiple team members so that different perspectives will work on that task and get a better result. By this method, no team member will do more work than others and the workload will be splitted equally.

4.5 Ethics and Professional Responsibilities

Recroute will follow the IEEE Code of Ethics[1]. In projects where the personal data of a user is managed, privacy is an important value. In our platform, applicants will share personal data with the companies. However this data will not be stored by the platform and the shared data will not be shared with any third-party without the permission of the users.

Also companies will be notified that they must not use applicants' data for other purposes than recruitment.

The sources that will be used in the project(libraries, APIs etc.) will be used according to license agreements and they will be referenced on the documents.

4.6 Planning for New Knowledge and Learning Strategies

While developing our project, we plan to use Java spring and React. Most of the participants in our group have not used react very much before. Since the UI is an important part of the project we will focus on learning React and enhancing our abilities. We plan to do this via online tools (online tutorials, YouTube videos and example codes).

Secondly, our project will use LinkedIn and zoom APIs. None of us before used these APIs thus we do not have very broad information about them. LinkedIn has an

informative website about its API [2]. Also, Zoom has an informative website about its API [3]. We will search these to learn about solutions we need during our implementation and improve our knowledge about these APIs.

5. Glossary

- **Application form:** Form that should be filled by the applicants when applying for a job.
- **Job advert:** Overall application process created by company. It is composed of a recruitment flow and general information about the job.
- **Applicant:** Person who applies for a job advert.
- **Recruiter:** Company or a person who is responsible to hire employees.
- **Recruitment Flow:** The process of analyzing, testing and interviewing the job applicants and then finding the appropriate candidates for the job.
- **Stage:** A step on the recruitment flow. Can be one of the following: Application, Test or Interview.
- **Sandbox development service:** Service that is responsible for executing code written by an examiner in a coding test.

6. References

[1] “IEEE Governing Documents,” IEEE. [Online]. Available: https://www.ieee.org/about/corporate/governance/index.html [Accessed: 06-11-2021].

[2] “LinkedIn Developer Solutions” [Online]. Available: https://developer.linkedin.com/ [Accessed: 07-11-2021].

[3] “Zoom API” [Online]. Available: https://marketplace.zoom.us/docs/api-reference/zoom-api [Accessed: 07-11-2021].