Project Report

Only for Course Teacher						
		Needs Improvement	Developing	Sufficient	Above Average	Total Marks
Allocate Marks & Percentage		**25%**	**50%**	**75%**	**100%**	**25**
Problem understanding & Analysis	**7**					
Implementation	**8**					
Report Writing	**10**					
					Total obtained marks	
Comments						

Semester: **Fall 2024**

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Batch: **39** Section: **C1**

Course Code: **SE 231**

Course Name: **System Analysis and Design Capstone Project**

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Submission Date: 0**2 December, 2024**

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System Design ..... Error! Bookmark not defined.

Introduction

The Skill Development and Job Matching Platform aims to bridge the gap between job seekers and employers by providing a comprehensive solution for skill development and job matching. The platform is designed to help individuals enhance their skills and connect them with relevant job opportunities based on their competencies.

Objective

The primary objective is to create a platform that:

- Provides personalized skill development resources.
- Matches job seekers with job opportunities that align with their skills.
- Assists Company in finding candidates with the exact skills required for their job openings.

Key Features

- **User Registration and Login:** Secure registration and login system with options for password recovery.
- **Profile Management:** Users can create and update their profiles, including their skills, experience, and educational background.
- **Skill Assessment:** Tools for assessing user skills and recommending relevant courses or training programs.
- **Courses for Skill Development:** The platform provides access to a wide range of courses designed to help users develop and enhance their skills.
- **Job Matching:** An algorithm that matches users with job opportunities based on their skills and preferences.
- **Job Application Process:** A streamlined process for users to apply for jobs directly through the platform.
- **Dashboard:** Tools for employers to post jobs, search for candidates, and manage applications.
- **Notifications:** Automated notifications for course recommendations, job matches, and application statuses.
- **Security Measures:** Implementation of industry-standard security protocols to protect user data and transactions.

Scenario Writing

1. **Scenario-1: User Registration**
    - Request to register on the platform.
    - Provide necessary details.
    - Submit the registration form.
    - Registration successful.
2. **Scenario-2: Skill Assessment**
    - Request to take a skill assessment.
    - Complete the assessment.
    - Receive results and recommendations for skill improvement.
3. **Scenario-3: Job Matching**
    - System matches user profiles with relevant job openings.
    - User receives notification of matched jobs.
    - User applies for the desired job.
4. **Scenario-4: Employer Job Posting**
    - Employer logs in to the platform.

- Posts a new job opening.
- System automatically searches for matching candidates.

Stakeholder

- **Job Seekers:** User Just looking for job opportunities.
- **Learners :** Individuals looking to improve their skills and find job opportunities.
- **Trainer :** Trainer will provide various courses to this platform.
- **Employers:** Company's Employee seeking candidates with specific skills.
- **Admin:** Platform administrators managing the system and ensuring smooth operation.

User Profiles

User Profile-01: Job Seeker

User Class	Notes on Characteristic	Requirement Implied
Type of User	Job Seeker	Operation, Verification
Age Range	18-50	Acceptance, Operation
Frequency of Use	Weekly	Performance, Operation
Mandatory	No	Performance, Operation, Portability
Computer Experience	Basic to Intermediate	Documentation
Education	High School to Graduate	Acceptance, Performance
Goals	find job opportunities	Resource, Operation, Performance, Security
Language Skills	Bangla, English	Acceptance, Operation
Number of Users	Thousands (depending on platform reach)	Performance, Operation, Portability
Training	May require brief orientation	Documentation
Other System Used	Job portals, educational platforms	Performance, Portability
Ways of Working	Full support from the platform	Acceptance, Safety, Security, Operation, Portability

User Profile-02: Learners

User Class	Notes on Characteristic	Requirement Implied
Type of User	Learners	Resource, Performance, Verification
Age Range	16-50	Acceptance, Operation, Portability

Frequency of Use	Regularly	Performance, Operation
Mandatory	No	Performance, Portability, Operation
Computer Experience	Basic to Intermediate	Documentation, Operation
Education	High School to Graduate	Acceptance, Operation, Resource
Goals	Enhance skills, find job opportunities	Resource, Performance, Security
Language Skills	Bangla, English	Acceptance, Operation, Performance
Number of Users	Thousands (depending on platform reach)	Performance, Operation, Portability
Training	May require brief orientation	Documentation, Resource
Other System Used	Job portals, educational platforms	Portability, Resource, Performance
Ways of Working	Full support from the platform, quick access to resources	Security, Operation, Acceptance, Portability

User Profile-03: Trainer

User Class	Notes on Characteristic	Requirement Implied
Type of User	Trainer	
Age Range	20-50	Acceptance, Operation
Frequency of Use	Demand on Classes	Performance, Operation
Mandatory	Yes	Performance, Security
Computer Experience	Basic to Intermediate	Documentation, Operation
Education	High School to Graduate	Acceptance, Operation
Goals	create courses or training modules that help users develop relevant skills for their professional growth.	Resource, Performance, Security
Language Skills	Bangla, English	Acceptance, Operation
Number of Users	5-50	Performance, Operation
Training	Based on specific domain	Documentation, Resource
Other System Used	No	Portability, Resource

Ways of Working	create, upload, and manage courses or training	Operation, Performance, Security

User Profile-04: Employers

User Class	Notes on Characteristic	Requirement Implied
Type of User	Employers	Operation, Verification
Age Range	25-55	
Frequency of Use	Varies based on hiring needs	Performance, Operation
Mandatory	No	
Computer Experience	Basic	Documentation , Operation
Education	Graduate	Acceptance, Performance
Goals	Recruit candidates with specific skills	Resource, Operation, Performance, Security
Language Skills	Bangla, English	Acceptance, Operation
Number of Users	Varies based on platform reach	Performance, Operation, Portability
Training	Minimal training needed	Documentation
Other System Used	Job portals	Performance, Portability
Ways of Working	View and shortlist profiles, post job requirements	Operation, Performance, Security

User Profile-05: Admin

User Class	Notes on Characteristic	Requirement Implied
Type of User	Admin	Operation, Verification
Age Range	22-50	
Frequency of Use	Regularly	Performance, Operation
Mandatory	Yes	Performance, Operation, Portability
Computer Experience	Advanced	Documentation , Security
Education	Graduate	Acceptance, Performance
Goals	Manage platform operations	Performance, Security
Language Skills	Bangla, English	Acceptance, Operation

Number of Users	Limited (platform administrators only)	Performance, Operation
Training	In-depth platform training	Documentation
Other System Used	no	
Ways of Working	Monitor, support, and manage operations	Security, Operation, Performance

Scope

- **User Registration and Login:**
  Objective: Secure access for users with profile creation options.

Functionality:

- Users provide necessary information such as email, password, and personal details for registration.
- The system implements secure authentication mechanisms, including password encryption and multi-factor authentication.
- Users can recover passwords using email verification or security questions.
- Admins can manage user access and permissions.

- **Profile Management**

Objective: Enable users to create and update their profiles, including their skills, experience, and preferences.

Functionality:

- Users can input and update personal details such as name, contact information, educational background, and professional experience.
- Users can list their skills and rate their proficiency in each skill.
- The platform allows users to upload resumes, certificates, and other relevant documents.
- Profiles are dynamically updated to reflect changes and are used by the system for job matching.

- **Skill Development:**
  Objective: Provide personalized recommendations for skill enhancement.

Functionality:

- The platform offers various skill assessments, including quizzes, practical tests, and simulations.
- Based on the results, the system generates a detailed report highlighting the user's strengths and areas for improvement.
- The system recommends relevant courses or training programs to help users develop the necessary skills.
- Users can track their progress over time and reassess their skills as they complete recommended learning paths.

- **Job Matching**
  Objective: Match users with relevant job openings using a smart algorithm.

Functionality:

- The platform uses an algorithm to match users' profiles with job postings based on skills, experience, location, and other criteria.
- Users receive notifications for jobs that closely match their profiles.
- Employers can search for candidates based on specific skills and qualifications.
- Users can view job details, apply for jobs directly through the platform, and track their application status.

Employer Features:

Objective: Enable employers to post jobs and search for candidates easily.

Functionality:

- Employers can create, update, and manage job postings.
- The system allows employers to search and filter candidates based on skills, experience, and other criteria.
- Employers can view detailed candidate profiles, track applications, and schedule interviews.
- The dashboard provides analytics and reports on job posting performance and application trends.

Notification System:

Objective: Keep users and employers informed at every step.

Functionality:

- The platform sends automated notifications for important events, such as new job matches, application status changes, and course recommendations.
- Users can customize their notification preferences, choosing how and when they receive updates.
- Employers receive notifications about new applications, candidate communications, and job posting performance.
- The notification system is integrated with email, SMS, and in-app alerts for flexibility.

Security Measures:

Objective: Protect user data and ensure secure transactions.

Functionality:

- The platform uses secure socket layer (SSL) encryption for data transmission.
- Advanced user authentication measures, including two-factor authentication and secure password storage, are implemented.
- Regular security audits and updates are performed to address vulnerabilities.
- The platform complies with relevant data protection regulations, ensuring the privacy and security of user information.
- Role-based access control ensures that only authorized personnel can access sensitive data.

Feasibility Study

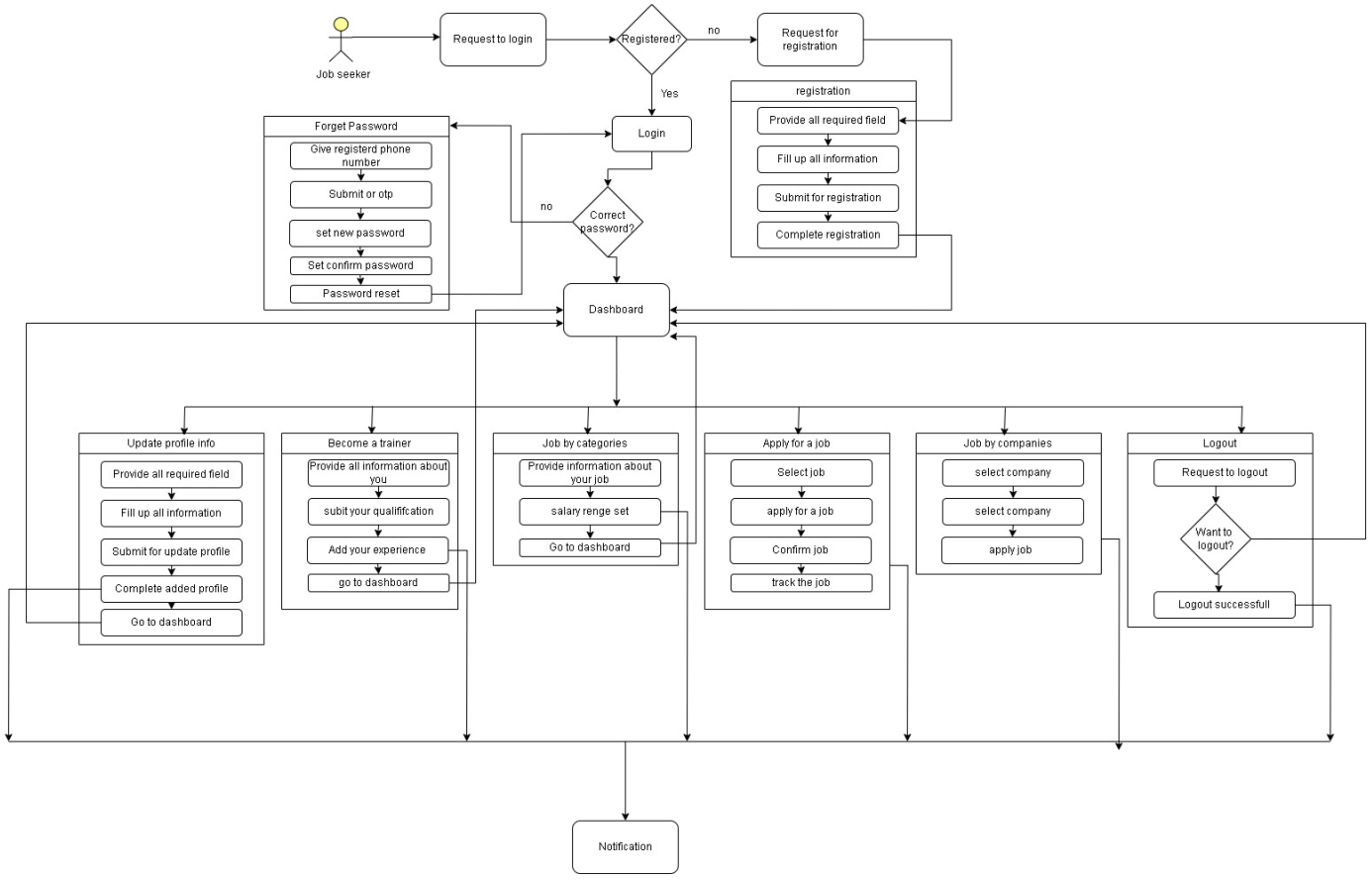
The implementation of the Skill Development and Job Matching Platform requires careful consideration of various factors to ensure its success. This feasibility study evaluates the platform's viability from technical, operational, economic, and scheduling perspectives, along with an assessment of security and privacy considerations.

1. **Technical Feasibility**
    1. **Hardware Compatibility:** The platform is designed to be compatible with standard hardware infrastructure, including desktop computers, mobile devices, and tablets. A review of existing systems at user end-points will be conducted to ensure seamless integration.
    2. **Software Compatibility:** The platform will be developed using modern, widely-supported technologies to ensure compatibility with various operating systems, databases, and third-party services. Integration with existing tools such as Learning Management Systems (LMS) and Human Resource Management Systems (HRMS) will also be prioritized.
    3. **Technical Expertise:** The development team possesses the required technical expertise to build and maintain the platform. In case of specialized requirements, training sessions will be organized to equip team members with the necessary skills.
2. **Operational Feasibility**
    1. **User Acceptance:** Feedback from potential users, including job seekers, employers, and training providers, has been positive. The platform's user-friendly design and intuitive interface are expected to align well with user needs and expectations, promoting widespread adoption.
    2. **Impact on Current Operations:** The platform will complement existing job portals and skill development programs, enhancing rather than disrupting current operations. Transition strategies will be developed to minimize any operational disruptions during the platform's deployment phase.
3. **Economic Feasibility**
    1. **Cost-Benefit Analysis:** A detailed cost-benefit analysis reveals that the initial investment in platform development and deployment is outweighed by the expected benefits. These benefits include improved job matching accuracy, reduced unemployment, and enhanced skill development opportunities. Additional revenue streams may include premium services for users and employers, as well as partnerships with educational institutions and training providers.
    2. **Return on Investment (ROI):** The projected ROI over a three-year period is favorable, with anticipated growth in user engagement, employer participation, and successful job placements driving financial returns.
4. **Scheduling Feasibility**
    1. **Project Timeline:** The project will be divided into phases, including planning, development, testing, deployment, and ongoing support. A realistic timeline has been developed, accounting for potential delays and allowing for thorough testing and user training. The project is expected to be fully operational within 12-18 months.
    2. **Dependencies:** Key dependencies include the timely integration of third-party services, regulatory approvals, and user feedback loops. These dependencies will be closely monitored to mitigate risks and ensure adherence to the project schedule.
5. **Security and Privacy Considerations**
    1. **Data Encryption:** Robust encryption protocols, including SSL and end-to-end encryption, will be implemented to protect sensitive user data during transmission and storage.

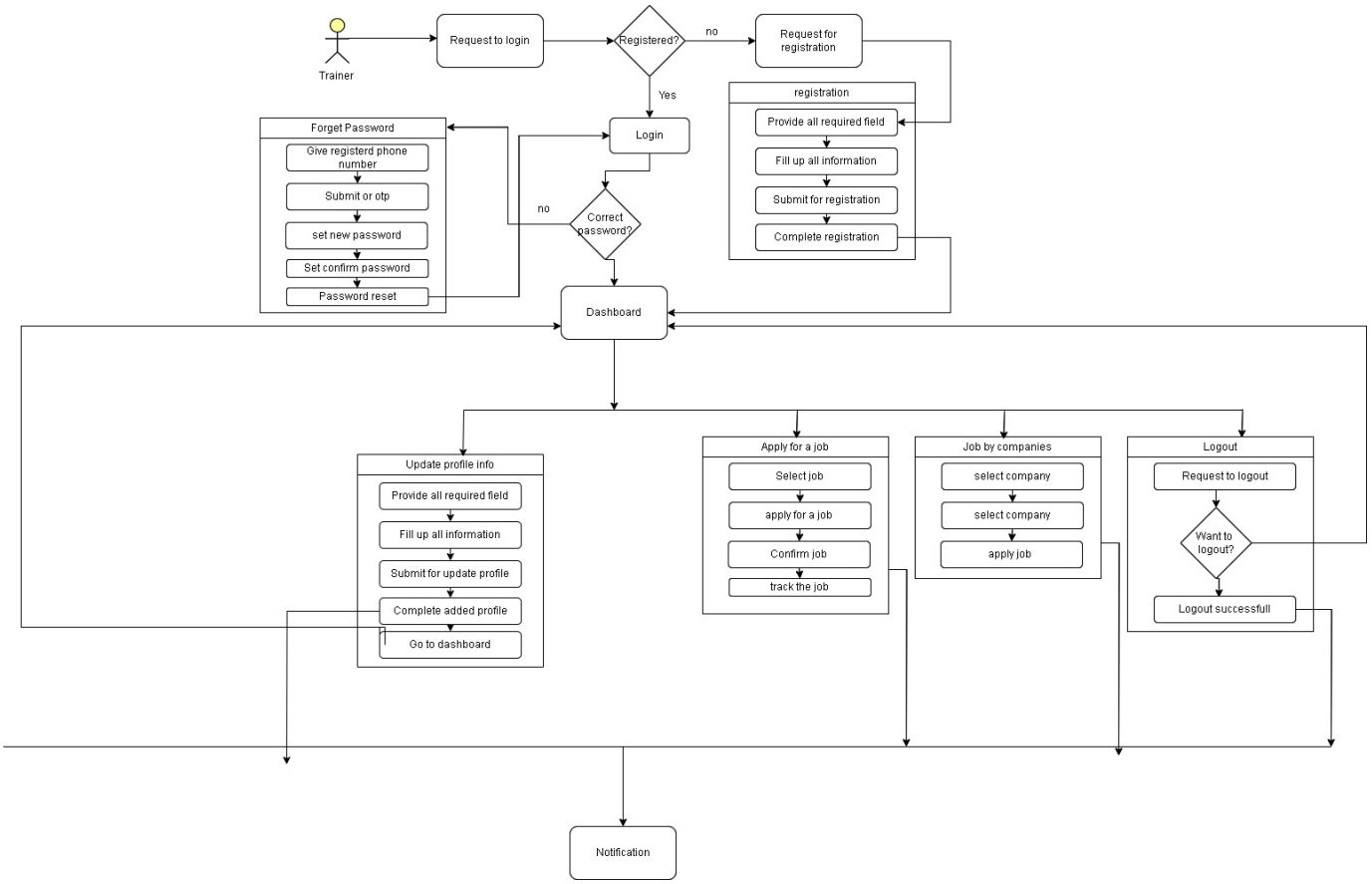
2. **Compliance:** The platform will comply with relevant data protection regulations, such as the General Data Protection Regulation (GDPR) and other applicable standards, ensuring the confidentiality, integrity, and availability of user data.
3. **Regular Audits:** Security audits and vulnerability assessments will be conducted regularly to identify and address potential risks. A dedicated security team will be responsible for monitoring, responding to, and mitigating any security threats.

Project Block Diagram

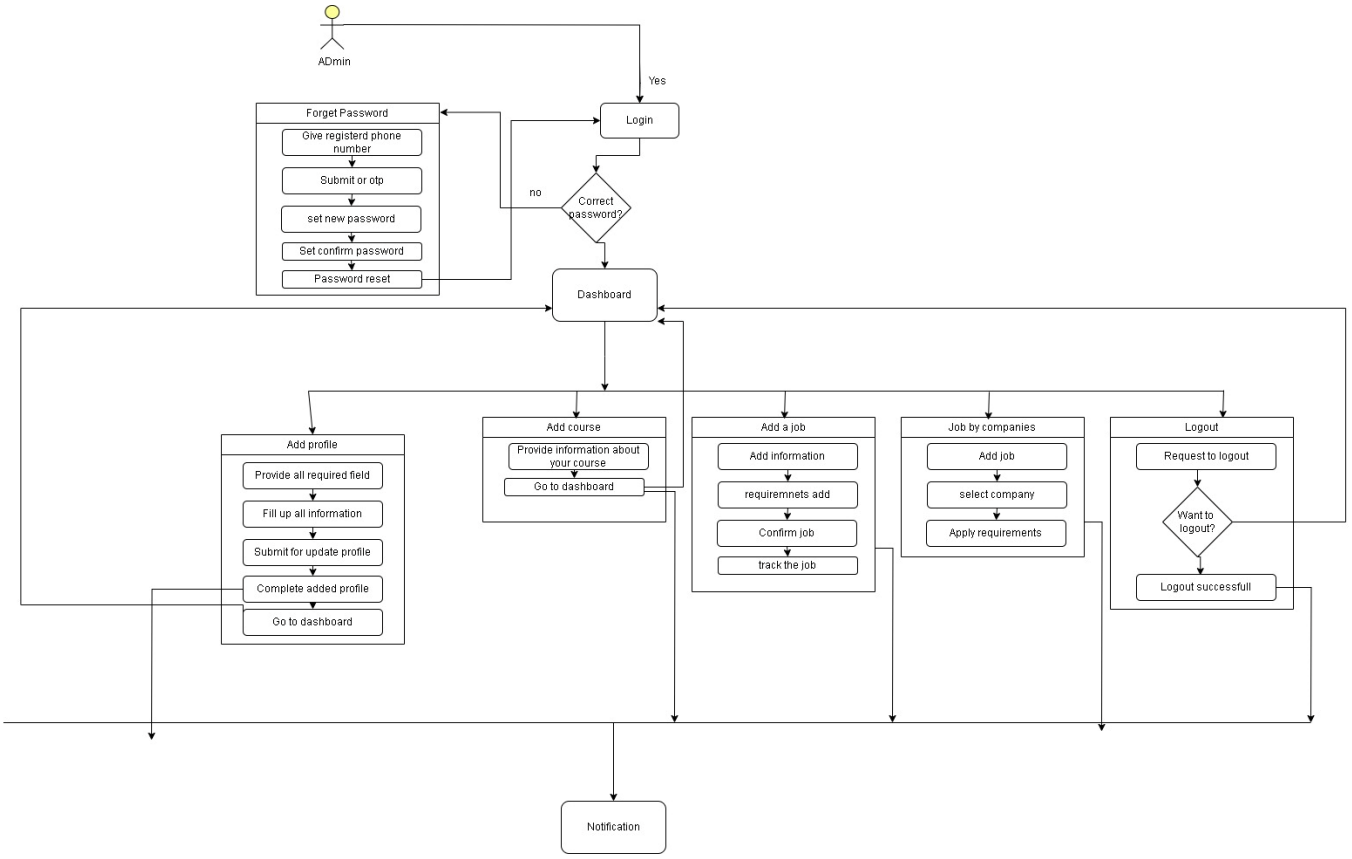
Block Diagram-1: Job Seeker



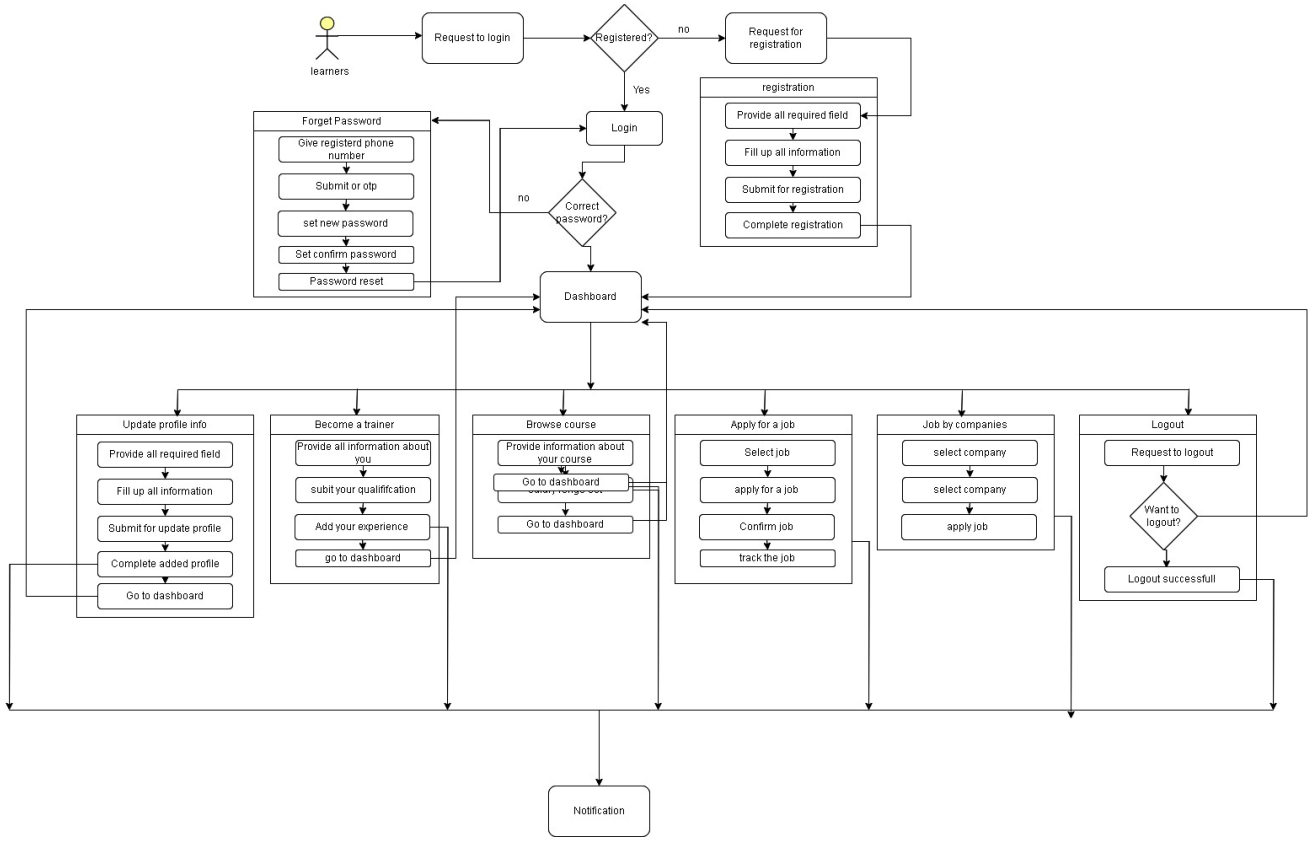
Block Diagram-2: Trainer



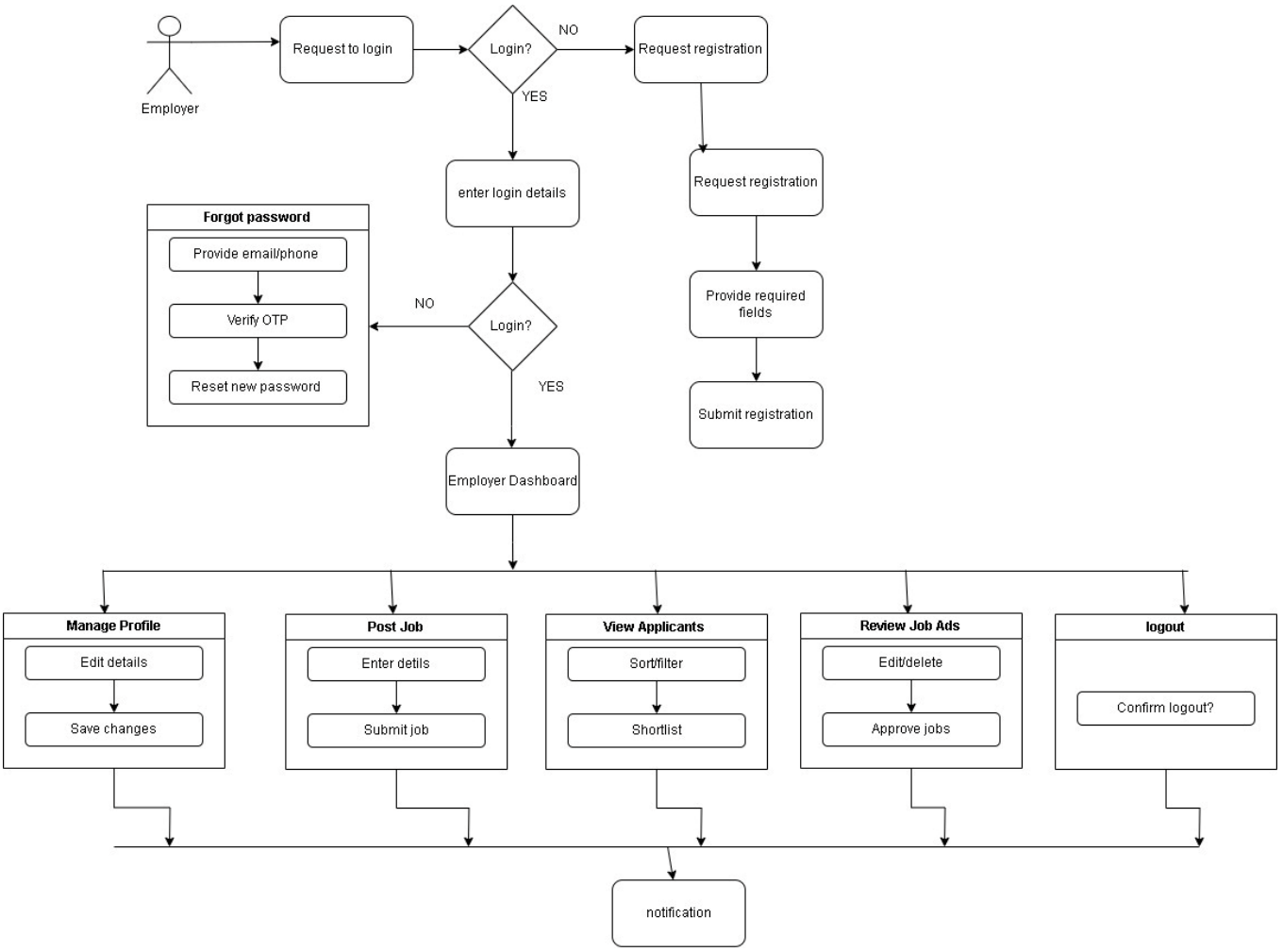
Block Diagram-3: Admin



Block Diagram-4: Learners



Block Diagram-5: Employee



Software Requirement Specification (SRS)

FR01	Registration
Description	New users (job seekers and employers) must be able to register on the platform by providing necessary personal information..
Stakeholder	Job Seekers, Learners , Trainer , Employers

FR02	Login
Description	Registered users must be able to log in to the platform securely by providing their credentials.
Stakeholder	Job Seekers, Learners , Trainer , Employers , Admin

FR03	Become a Trainer
Description	Users with expertise in a specific skill or domain can register to become a trainer on the platform.
Stakeholder	Job Seekers, Learners

FR04	Upload Course Content
Description	Trainer will upload their courses according to their expertise field.
Stakeholder	Trainer

FR05	Search by skill
Description	Company seeking candidates with specific skills.
Stakeholder	Employers

FR06	Skill Assessment
Description	Users take assessments to evaluate their skills and receive personalized recommendations for courses.
Stakeholder	Job Seekers, Learners

FR07	**Enroll Course**
Description	Users can enroll in skill development courses and receive certificates after completion.
Stakeholder	Job Seekers, Learners

FR08	**Browse Courses**
Description	Users (job seekers or general learners) must be able to browse skill development courses available on the platform.
Stakeholder	Learners

FR09	**JOBS BY CATEGORIES**
Description	Users must be able to browse job opportunities based on predefined categories (e.g., IT, healthcare, finance)..
Stakeholder	Job Seekers, Learners

FR10	**Apply for a job**
Description	Users must be able to apply for job postings directly through the platform.
Stakeholder	Job Seekers, Learners

FR11	**JOBS BY COMPANIES**
Description	Users must be able to browse and filter job opportunities based on specific companies.
Stakeholder	Job Seekers, Learners

FR12	**Update Profile Info**
Description	Users must be able to update their profile information (skills, experience, education, contact details) on the platform.
Stakeholder	Job Seekers, Learners , Trainer ,Employers

FR13	**Forget Password**
Description	Users must be able to reset their password if they forget it
Stakeholder	Job Seekers, Learners ,Trainer , Employers

FR014	**Logout**

Description	Users must be able to securely log out of the platform.
Stakeholder	Job Seekers, Learners ,Trainer , Employers , Admin

User Case Diagram

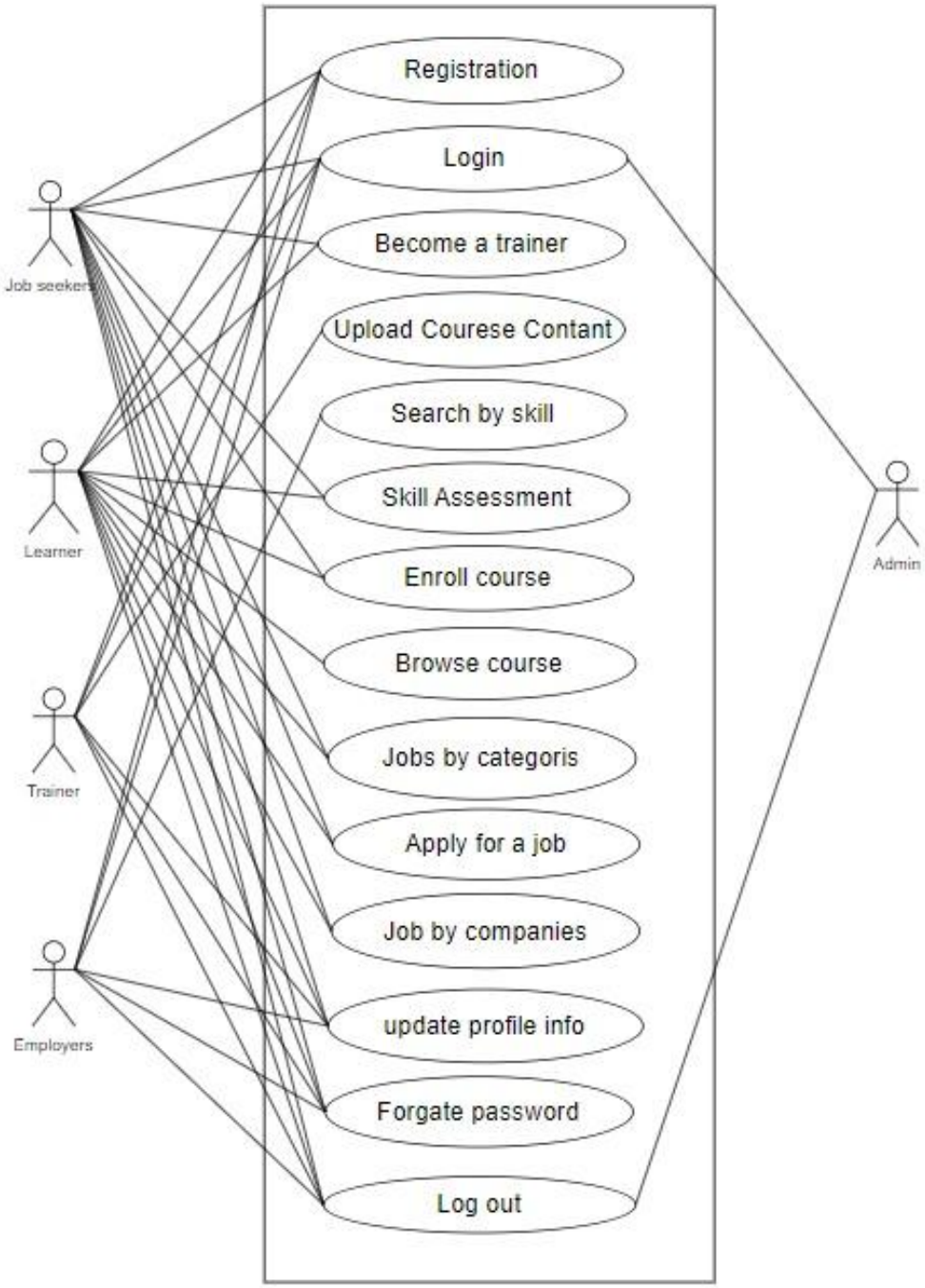


Figure-4: User Case Diagram

User Case Description

Case Description-01: Registration

<table>
<tr><td>Use Case</td><td>Registration</td></tr>
<tr><td>Goal</td><td>Users must access the Skill Development and Job Matching platform (via web or mobile).</td></tr>
<tr><td>Precondition</td><td>Users must install the SkillUpMatch app for registration.</td></tr>
<tr><td>Success End Condition</td><td>Notification: !!!Successfully Registered!!!</td></tr>
<tr><td>Failed End Condition</td><td>Notification: “Submission Not completed”</td></tr>
<tr><td>Primary Actors:

Secondary Actors:</td><td>Job Seekers, Trainers, Employers</td></tr>
<tr><td>Trigger</td><td>User will request a registration form to fill up</td></tr>
<tr><td>Description / Main Success Scenario</td><td>
<table>
<tr><td>1.</td><td>Press “Registration” Button</td></tr>
<tr><td>2.</td><td>Provide registration form</td></tr>
<tr><td>3.</td><td>Enter Information</td></tr>
<tr><td>4.</td><td>Press “Submit” Button.</td></tr>
<tr><td>5.</td><td>Information saved</td></tr>
<tr><td>6.</td><td>The system saves the details and shows them !!!Successfully Registered!!! Notify</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><td>Alternative Flows</td><td><table>
<tr><td>1.1</td><td>System Error</td></tr>
<tr><td></td><td>1.1.a. Try Again!!</td></tr>
<tr><td>2.1</td><td>System Doesn't work.</td></tr>
<tr><td></td><td>2.1.a. Try Again Later!</td></tr>
<tr><td>4.1</td><td>The user Did not fill up the details!</td></tr>
<tr><td></td><td>4.1.a. Checked By the system & Notify by “Please! Fill Up the Box”.</td></tr>
<tr><td>5.1</td><td>The system did not respond</td></tr>
<tr><td></td><td>5.1.a. Show Error Message.</td></tr>
<tr><td>6.1</td><td>The system Doesn’t save the details.</td></tr>
<tr><td></td><td>6.1.a. Notification: “Details did not Save”</td></tr>
</table></td></tr>
<tr><td>Quality Requirements</td><td>The user Will fill up all the details in 30 minutes.</td></tr>
</table>

Case Description-02: Login

Use Case	Login
Goal	Users can log in to access the platform.
Precondition	Users must have a registered account on the Skill Development and Job Matching platform.
Success End Condition	Notification: "Successfully Logged In!"
Failed End Condition	Notification: "Login Failed. Incorrect Username or Password."
Primary Actors:	User
Secondary Actors:	None
Trigger	User requests the login form to input credentials.

<table>
<tr><td>Description / Main Success Scenario</td><td>
<table>
<tr><td>1.</td><td>Press "Login" button.</td></tr>
<tr><td>2.</td><td>Provide login form.</td></tr>
<tr><td>3.</td><td>Enter username and password.</td></tr>
<tr><td>4.</td><td>Press "Submit" button.</td></tr>
<tr><td>5.</td><td>The system validates the credentials.</td></tr>
<tr><td>6.</td><td>The system confirms the credentials are correct and shows the message: "Successfully Logged In!"</td></tr>
</table>
</td></tr>
<tr><td>Alternative Flows</td><td>
<table>
<tr><td>1.1</td><td>System Error.</td></tr>
<tr><td></td><td>1.1.a. Try Again!!</td></tr>
<tr><td>2.1</td><td>The system doesn’t respond.</td></tr>
<tr><td></td><td>2.1.a. Try Again Later!</td></tr>
<tr><td>4.1</td><td>The user enters incorrect login credentials.</td></tr>
<tr><td></td><td>4.1.a. The system shows: "Incorrect Username or Password. Please Try Again."</td></tr>
<tr><td>5.1</td><td>The system cannot validate the credentials.</td></tr>
<tr><td></td><td>5.1.a. Show Error Message.</td></tr>
<tr><td>6.1</td><td>The system fails to log in the user due to an unknown error.</td></tr>
<tr><td></td><td>6.1.a Show: "Login Failed. Please Contact Support."</td></tr>
</table>
</td></tr>
<tr><td>Quality Requirements</td><td>
<ul>
<li>The user will fill up the login details in less than 3 minutes.</li>
<li>The system will display error messages in under 5 seconds if the login fails.</li>
</ul>
</td></tr>
</table>

Case Description-03: Become a Trainer

<table>
<tr><td>Use Case</td><td>Become a Trainer</td></tr>
<tr><td>Goal</td><td>Users with expertise can register as trainers.</td></tr>
<tr><td>Precondition</td><td>The user must have an account on the platform and meet the eligibility criteria for trainers.</td></tr>
<tr><td>Success End Condition</td><td>Notification: "Successfully Registered as a Trainer!"</td></tr>
<tr><td>Failed End Condition</td><td>Notification: "Trainer Registration Failed."</td></tr>
<tr><td>Primary Actors:</td><td>Job Seekers, Learners</td></tr>
<tr><td>Secondary Actors:</td><td>None</td></tr>
<tr><td>Trigger</td><td>The user requests the form to register as a trainer.</td></tr>
<tr><td>Description / Main Success Scenario</td><td>
<table>
<tr><td>1.</td><td>Press the "Become a Trainer" button.</td></tr>
<tr><td>2.</td><td>The platform provides the trainer registration form.</td></tr>
<tr><td>3.</td><td>The user fills in the required details (expertise, experience, etc.).</td></tr>
<tr><td>4.</td><td>Press the "Submit" button.</td></tr>
<tr><td>5.</td><td>The system validates the provided information.</td></tr>
<tr><td>6.</td><td>The system confirms successful registration and displays: "Successfully Registered as a Trainer!"</td></tr>
</table>
</td></tr>
<tr><td>Alternative Flows</td><td>
<table>
<tr><td>1.1</td><td>System Error.</td></tr>
<tr><td></td><td>1.1.a. Try Again!!</td></tr>
<tr><td>2.1</td><td>The system doesn’t respond.</td></tr>
<tr><td></td><td>2.1.a. Try Again Later!</td></tr>
<tr><td>4.1</td><td>The user enters incomplete or invalid information.</td></tr>
<tr><td></td><td>4.1.a. The system shows: "Please provide all required information."</td></tr>
</table>
</td></tr>
<tr><td>Quality Requirements</td><td>
<ul>
<li>Users should be able to complete the registration in under 10 minutes.</li>
<li>The system must validate and notify success or failure within 5 seconds.</li>
</ul>
</td></tr>
</table>

Case Description-04: Upload Course Content

<table>
<tr><td>Use Case</td><td>Upload Course Content</td></tr>
<tr><td>Goal</td><td>Trainers upload course materials to the platform.</td></tr>
<tr><td>Precondition</td><td>The user must be a registered trainer.</td></tr>
<tr><td>Success End Condition</td><td>Notification: "Course Content Uploaded Successfully!"</td></tr>
<tr><td>Failed End Condition</td><td>Notification: "Failed to Upload Course Content."</td></tr>
<tr><td>Primary Actors:</td><td>Trainer</td></tr>
<tr><td>Secondary Actors:</td><td>None</td></tr>
<tr><td>Trigger</td><td>The trainer requests the form to upload a new course.</td></tr>
<tr><td>Description / Main Success Scenario</td><td>
<table>
<tr><td>1.</td><td>Press the "Upload Course" button.</td></tr>
<tr><td>2.</td><td>The platform provides the course upload form.</td></tr>
<tr><td>3.</td><td>The trainer enters course details (title, description, files, etc.).</td></tr>
<tr><td>4.</td><td>Press the "Submit" button.</td></tr>
<tr><td>5.</td><td>The system saves the course details..</td></tr>
<tr><td>6.</td><td>The system confirms successful upload and displays:
"Course Content Uploaded Successfully!"</td></tr>
</table>
</td></tr>
<tr><td>Alternative Flows</td><td>
<table>
<tr><td>1.1</td><td>System Error.</td></tr>
<tr><td></td><td>1.1.a. Try Again!!</td></tr>
<tr><td>2.1</td><td>The system doesn’t respond.</td></tr>
<tr><td></td><td>2.1.a. Try Again Later!</td></tr>
<tr><td>4.1</td><td>The trainer fails to complete required fields..</td></tr>
<tr><td></td><td>4.1.a. The system shows: "Please fill out all required details."</td></tr>
</table>
</td></tr>
<tr><td>Quality Requirements</td><td>• Trainers should be able to upload course content in less than 15 minutes.
• The system should notify success or failure within 5 seconds.</td></tr>
</table>

Case Description-05: Search by Skill

<table>
<tr><td>Use Case</td><td>Search by Skill</td></tr>
<tr><td>Goal</td><td>Employers search for candidates with specific skills.</td></tr>
<tr><td>Precondition</td><td>The employer must have an account on the platform.</td></tr>
<tr><td>Success End Condition</td><td>List of candidates matching the search criteria is displayed.</td></tr>
<tr><td>Failed End Condition</td><td>Notification: "No candidates found with the specified skills."</td></tr>
<tr><td>Primary Actors:</td><td>Employers</td></tr>
<tr><td>Secondary Actors:</td><td>None</td></tr>
<tr><td>Trigger</td><td>The employer initiates a skill-based search.</td></tr>
<tr><td>Description / Main Success Scenario</td><td>
<table>
<tr><td>1.</td><td>Press the "Search by Skill" button.</td></tr>
<tr><td>2.</td><td>The platform provides a search form.</td></tr>
<tr><td>3.</td><td>The employer inputs the required skills and presses "Search."</td></tr>
<tr><td>4.</td><td>The system retrieves candidates matching the skills.</td></tr>
<tr><td>5.</td><td>The system displays the list of matching candidates.</td></tr>
</table>
</td></tr>
<tr><td>Alternative Flows</td><td>
<table>
<tr><td>1.1</td><td>System Error.</td></tr>
<tr><td></td><td>1.1.a. Try Again!!</td></tr>
<tr><td>2.1</td><td>The system doesn’t return any results.</td></tr>
<tr><td></td><td>2.1.a. The system shows: "No candidates found with the specified skills."</td></tr>
</table>
</td></tr>
<tr><td>Quality Requirements</td><td>
<ul>
<li>The search process should take less than 2 minutes.</li>
<li>Search results should appear within 5 seconds of submitting the query.</li>
</ul>
</td></tr>
</table>

Case Description-06: Skill Assessment

<table>
<tr><td>Use Case</td><td>Skill Assessment</td></tr>
<tr><td>Goal</td><td>Users can take skill assessments and receive personalized course recommendations.</td></tr>
<tr><td>Precondition</td><td>The user must be registered on the platform.</td></tr>
<tr><td>Success End Condition</td><td>Notification: "Skill Assessment Completed!"</td></tr>
<tr><td>Failed End Condition</td><td>Notification: "Skill Assessment Failed."</td></tr>
<tr><td>Primary Actors:</td><td>Job Seekers, Learners</td></tr>
<tr><td>Secondary Actors:</td><td>None</td></tr>
<tr><td>Trigger</td><td>The user requests to take a skill assessment.</td></tr>
<tr><td>Description / Main Success Scenario</td><td>
<table>
<tr><td>1.</td><td>Press the "Skill Assessment" button.</td></tr>
<tr><td>2.</td><td>The platform provides the skill assessment form.</td></tr>
<tr><td>3.</td><td>The user completes the assessment.</td></tr>
<tr><td>4.</td><td>The system analyzes the results.</td></tr>
<tr><td>5.</td><td>The system provides personalized course recommendations based on the user's performance.</td></tr>
</table>
</td></tr>
<tr><td>Alternative Flows</td><td>
<table>
<tr><td>1.1</td><td>System Error.</td></tr>
<tr><td></td><td>1.1.a. Try Again!!</td></tr>
<tr><td>4.1</td><td>The system fails to analyze the results.</td></tr>
<tr><td></td><td>4.1.a Show error message.</td></tr>
</table>
</td></tr>
<tr><td>Quality Requirements</td><td>
<ul>
<li>The skill assessment should take less than 20 minutes to complete.</li>
<li>The system should provide recommendations within 10 seconds of completion.</li>
</ul>
</td></tr>
</table>

Case Description-07: Enroll in Course

<table>
<tr><td>Use Case</td><td>Enroll in Course</td></tr>
<tr><td>Goal</td><td>Users can enroll in skill development courses.</td></tr>
<tr><td>Precondition</td><td>The user must be registered on the platform.</td></tr>
<tr><td>Success End Condition</td><td>Notification: "Successfully Enrolled in the Course!"</td></tr>
<tr><td>Failed End Condition</td><td>Notification: "Course Enrollment Failed."</td></tr>
<tr><td>Primary Actors:</td><td>Job Seekers, Learners</td></tr>
<tr><td>Secondary Actors:</td><td>None</td></tr>
<tr><td>Trigger</td><td>The user selects a course to enroll in.</td></tr>
<tr><td>Description / Main Success Scenario</td><td><table>
<tr><td>1.</td><td>Press the "Enroll" button next to the desired course.</td></tr>
<tr><td>2.</td><td>The system asks for confirmation.</td></tr>
<tr><td>3.</td><td>The user confirms the enrollment.</td></tr>
<tr><td>4.</td><td>The system processes the enrollment.</td></tr>
<tr><td>5.</td><td>The system displays: "Successfully Enrolled in the Course!"</td></tr>
</table></td></tr>
<tr><td>Alternative Flows</td><td><table>
<tr><td>1.1</td><td>System Error.</td></tr>
<tr><td></td><td>1.1.a. Try Again!!</td></tr>
<tr><td>4.1</td><td>The user cancels the enrollment.</td></tr>
<tr><td></td><td>4.1.a The process stops, and no enrollment is made.</td></tr>
</table></td></tr>
<tr><td>Quality Requirements</td><td><ul><li>Enrollment should take less than 5 minutes.</li><li>Confirmation or failure of enrollment should be displayed within 3 seconds.</li></ul></td></tr>
</table>

Case Description-08: Browse Course

Use Case	Browse Courses

Goal	Users can browse available skill development courses.
Precondition	The user must be registered and logged into the platform.
Success End Condition	The list of courses is displayed with filtering and sorting options.
Failed End Condition	Notification: "Failed to retrieve courses. Please try again later."
Primary Actors:	Job Seekers, Learners
Secondary Actors:	None
Trigger	The user selects the option to browse courses from the main menu or dashboard.
Description / Main Success Scenario	1. The user accesses the "Browse Courses" section.. 2. The system retrieves the available courses from the database. 3. The user is presented with a list of courses. 4. The user can apply filters (e.g., category, difficulty, duration) and sort options (e.g., popularity, newest). 5. The user selects a course for more detailed information or proceeds to enroll.
Alternative Flows	1.1 If the user doesn't apply any filters, all available courses are displayed in a default order. 2.1 If there are no courses available, the system displays: "No courses available at the moment."
Quality Requirements	• The list of courses should be displayed within 2 seconds. • Filters and sorting options should update the course list in real-time without delays. • This format keeps everything consistent with your previous use case.

Case Description-09: Jobs by Categories

Use Case	Jobs by Categories
Goal	Users can browse job listings categorized by industry or job type.

<table>
<tr><td>Precondition</td><td>The user must be registered and logged into the platform.</td></tr>
<tr><td>Success End Condition</td><td>The user is presented with job listings based on the selected category.</td></tr>
<tr><td>Failed End Condition</td><td>Notification: "Failed to retrieve courses. Please try again later."</td></tr>
<tr><td>Primary Actors:</td><td>Job Seekers, Learners</td></tr>
<tr><td>Secondary Actors:</td><td>None</td></tr>
<tr><td>Trigger</td><td>The user selects the option to browse courses from the main menu or dashboard.</td></tr>
<tr><td>Description / Main Success Scenario</td><td><table>
<tr><td>1.</td><td>The user accesses the "Browse Courses" section.</td></tr>
<tr><td>2.</td><td>The system retrieves the available courses from the database.</td></tr>
<tr><td>3.</td><td>The user is presented with a list of courses.</td></tr>
<tr><td>4.</td><td>The user can apply filters (e.g., category, difficulty, duration) and sort options (e.g., popularity, newest).</td></tr>
<tr><td>5.</td><td>The user selects a course for more detailed information or proceeds to enroll.</td></tr>
</table></td></tr>
<tr><td>Alternative Flows</td><td><table>
<tr><td>1.1</td><td>If the user doesn't apply any filters, all available courses are displayed in a default order.</td></tr>
<tr><td>2.1</td><td>If there are no courses available, the system displays: "No courses available at the moment."</td></tr>
</table></td></tr>
<tr><td>Quality Requirements</td><td><ul><li>The list of courses should be displayed within 2 seconds.</li><li>Filters and sorting options should update the course list in real-time without delays.</li></ul></td></tr>
</table>

Case Description-10: Apply for a job

Use Case	Apply for a Job
Goal	Users can apply for job listings available on the platform
Precondition	The user must be registered and logged into the platform and the user must have a complete profile with necessary details (e.g., resume, contact information).
Success End Condition	Notification: "Successfully applied for the job!"
Failed End Condition	Notification: "Job application failed. Please try again."

<table>
<tr><td>Primary Actors:</td><td>Job Seekers,</td></tr>
<tr><td>Secondary Actors:</td><td>Recruiters.</td></tr>
<tr><td>Trigger</td><td>The user selects the option to apply for a job after browsing or searching for job listings.</td></tr>
<tr><td>Description / Main Success Scenario</td><td><table>
<tr><td>1.</td><td>The user views job details on the job listing page.</td></tr>
<tr><td>2.</td><td>The user clicks the "Apply" button.</td></tr>
<tr><td>3.</td><td>The system checks if the user's profile is complete.</td></tr>
<tr><td>4.</td><td>The system sends the job application, including the user's profile and resume, to the recruiter.</td></tr>
<tr><td>5.</td><td>The system confirms that the application was successfully submitted and notifies the user.</td></tr>
</table></td></tr>
<tr><td>Alternative Flows</td><td><table>
<tr><td>1.1</td><td>If the user's profile is incomplete, the system displays a notification: "Please complete your profile to apply."</td></tr>
<tr><td>2.1</td><td>If the user has already applied for the job, the system displays: "You have already applied for this job."</td></tr>
</table></td></tr>
<tr><td>Quality Requirements</td><td><ul><li>The job application process should take less than 2 minutes.</li><li>The user should receive confirmation or failure notifications within 3 seconds of submitting the application.</li></ul></td></tr>
</table>

Case Description-11: Jobs by companies

Use Case	Jobs by Companies
Goal	Users can browse job listings organized by company.
Precondition	The user must be registered and logged into the platform.
Success End Condition	The user is presented with job listings from the selected company.
Failed End Condition	Notification: "Failed to retrieve jobs. Please try again later."
Primary Actors:	Job Seekers,
Secondary Actors:	None.

<table>
<tr><td>Trigger</td><td>The user selects a company from the list to view the job openings provided by that company.</td></tr>
<tr><td>Description / Main Success Scenario</td><td><table>
<tr><td>1.</td><td>The user accesses the "Jobs by Companies" section from the main menu or dashboard.</td></tr>
<tr><td>2.</td><td>The system retrieves a list of companies with available job listings.</td></tr>
<tr><td>3.</td><td>The user selects a company from the list.</td></tr>
<tr><td>4.</td><td>The system displays job listings for the selected company.</td></tr>
<tr><td>5.</td><td>The user can filter or sort job listings based on preferences (e.g., location, job type, salary)..</td></tr>
</table></td></tr>
<tr><td>Alternative Flows</td><td><table>
<tr><td>1.1</td><td>If no jobs are available for the selected company, the system displays: "No jobs available at this company."</td></tr>
<tr><td>2.1</td><td>If the user does not select any filters, all available jobs from the selected company are displayed.</td></tr>
</table></td></tr>
<tr><td>Quality Requirements</td><td><ul><li>The company list should load within 2 seconds.</li><li>Job listings should be displayed within 3 seconds after selecting a company.</li><li>Filtering and sorting should update the job list instantly without delays.</li></ul></td></tr>
</table>

Case Description-12: Update Profile info

Use Case	Update Profile Info
Goal	Users can update their personal and professional information on their profile.
Precondition	The user must be registered and logged into the platform and the user must have a profile with existing information.
Success End Condition	Notification: "Profile updated successfully!"
Failed End Condition	Notification: "Failed to update profile. Please try again."
Primary Actors:	Job Seekers,learner.
Secondary Actors:	None

<table>
<tr><td>Trigger</td><td>The user selects the option to edit their profile information.</td></tr>
<tr><td>Description / Main Success Scenario</td><td><table>
<tr><td>1.</td><td>The user navigates to the "Profile" section.</td></tr>
<tr><td>2.</td><td>The user selects the "Edit" option to update profile details (e.g., name, contact information, skills, education, work experience).</td></tr>
<tr><td>3.</td><td>The system validates the entered data.</td></tr>
<tr><td>4.</td><td>The user submits the changes.</td></tr>
<tr><td>5.</td><td>The system updates the profile information and notifies the user of the success.</td></tr>
</table></td></tr>
<tr><td>Alternative Flows</td><td><table>
<tr><td>1.1</td><td>If the user enters invalid data (e.g., missing required fields), the system displays an error message and prompts the user to correct the information.</td></tr>
<tr><td>2.1</td><td>If the user does not make any changes, the system returns to the profile view without updating.</td></tr>
</table></td></tr>
<tr><td>Quality Requirements</td><td><ul><li>The update process should take less than 1 minute.</li><li>The user should receive confirmation or failure notifications within 2 seconds of submission.</li></ul></td></tr>
</table>

Case Description-13: Forget password

Use Case	Forget Password
Goal	Users can reset their password if they forget it.
Precondition	The user must have an existing account on the platform and the user must have access to their registered email address or phone number.
Success End Condition	Notification: "Password reset link sent successfully!" or "Password reset completed successfully!"
Failed End Condition	Notification: "Failed to send password reset link. Please try again."
Primary Actors:	Job Seekers,learner.
Secondary Actors:	None

<table>
<tr><td>Trigger</td><td>The user selects the "Forgot Password" option on the login page.</td></tr>
<tr><td>Description / Main Success Scenario</td><td><table>
<tr><td>1.</td><td>The user clicks on "Forgot Password" from the login page.</td></tr>
<tr><td>2.</td><td>The system prompts the user to enter their registered email address or phone number.</td></tr>
<tr><td>3.</td><td>The user submits the required information.</td></tr>
<tr><td>4.</td><td>The system validates the information and sends a password reset link or code to the user's registered email/phone.</td></tr>
<tr><td>5.</td><td>The user follows the reset link or enters the code to set a new password.</td></tr>
</table></td></tr>
<tr><td>Alternative Flows</td><td><table>
<tr><td>1.1</td><td>If the user provides an invalid or unregistered email/phone number, the system displays: "Email or phone number not recognized."</td></tr>
<tr><td>2.1</td><td>If the reset link has expired, the system prompts the user to request a new one.</td></tr>
</table></td></tr>
<tr><td>Quality Requirements</td><td><ul><li>The password reset request should take less than 30 seconds.</li><li>The reset link or code should be sent within 1 minute.</li><li>The system should allow users to reset their password within 2 minutes after receiving the link or code..</li></ul></td></tr>
</table>

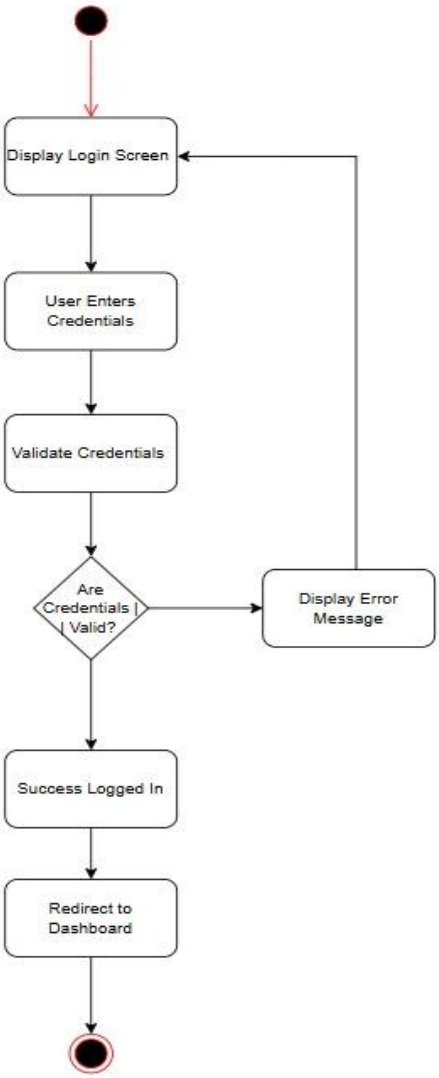
Case Description-14: Logout

Use Case	Logout
Goal	Users can log out of their accounts securely.
Precondition	The user must be logged into the platform..
Success End Condition	Notification: "You have successfully logged out."
Failed End Condition	Notification: "Logout failed. Please try again."
Primary Actors:	Job Seekers,learner.
Secondary Actors:	None
Trigger	The user selects the "Logout" option from the main menu or dashboard.

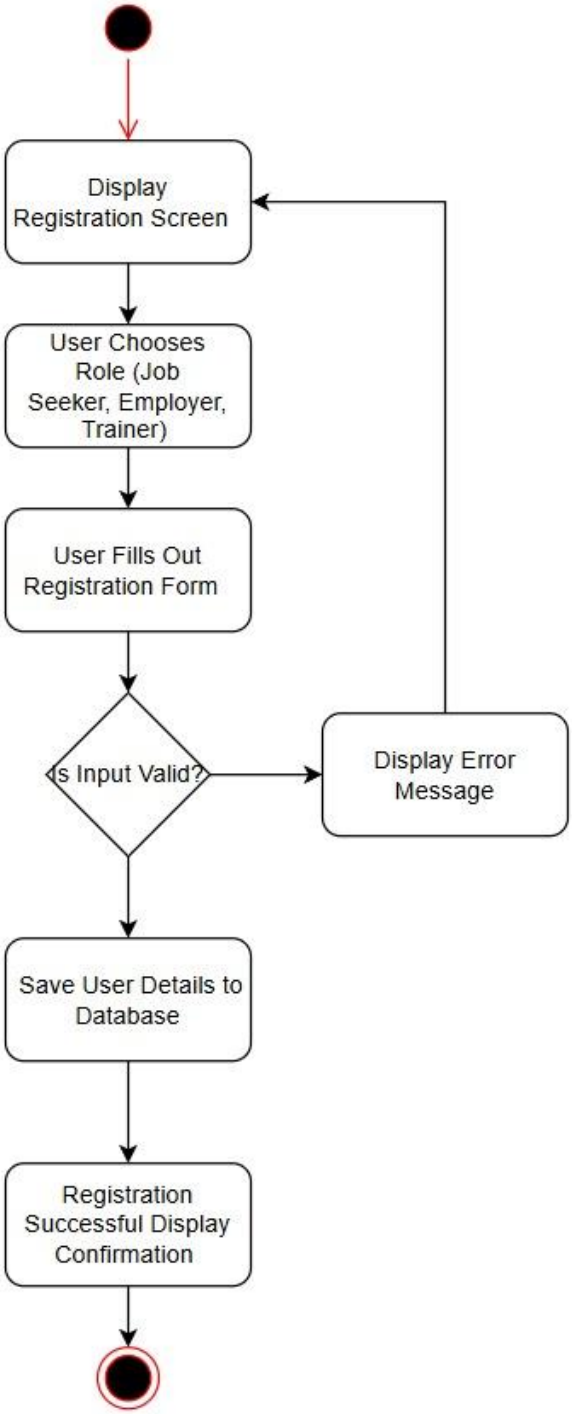
<table>
<tr><td>Description / Main Success Scenario</td><td><table>
<tr><td>1.</td><td>The user clicks on the "Logout" button from the platform.</td></tr>
<tr><td>2.</td><td>The system terminates the user's session.</td></tr>
<tr><td>3.</td><td>The user is redirected to the login page or the platform's home page.</td></tr>
<tr><td>4.</td><td>The system displays a confirmation message that the user has successfully logged out.</td></tr>
</table></td></tr>
<tr><td>Alternative Flows</td><td><table>
<tr><td>1.1</td><td>If the user’s session expires due to inactivity, the system automatically logs the user out and prompts them to log in again when they return.</td></tr>
<tr><td>2.1</td><td>If there is a system error and logout fails, the user remains logged in, and the system displays an error message asking them to try again.</td></tr>
</table></td></tr>
<tr><td>Quality Requirements</td><td><ul>
<li>The logout process should take less than 2 seconds.</li>
<li>The system should ensure the user is completely logged out, clearing session data securely.</li>
</ul></td></tr>
</table>

Activity Diagram

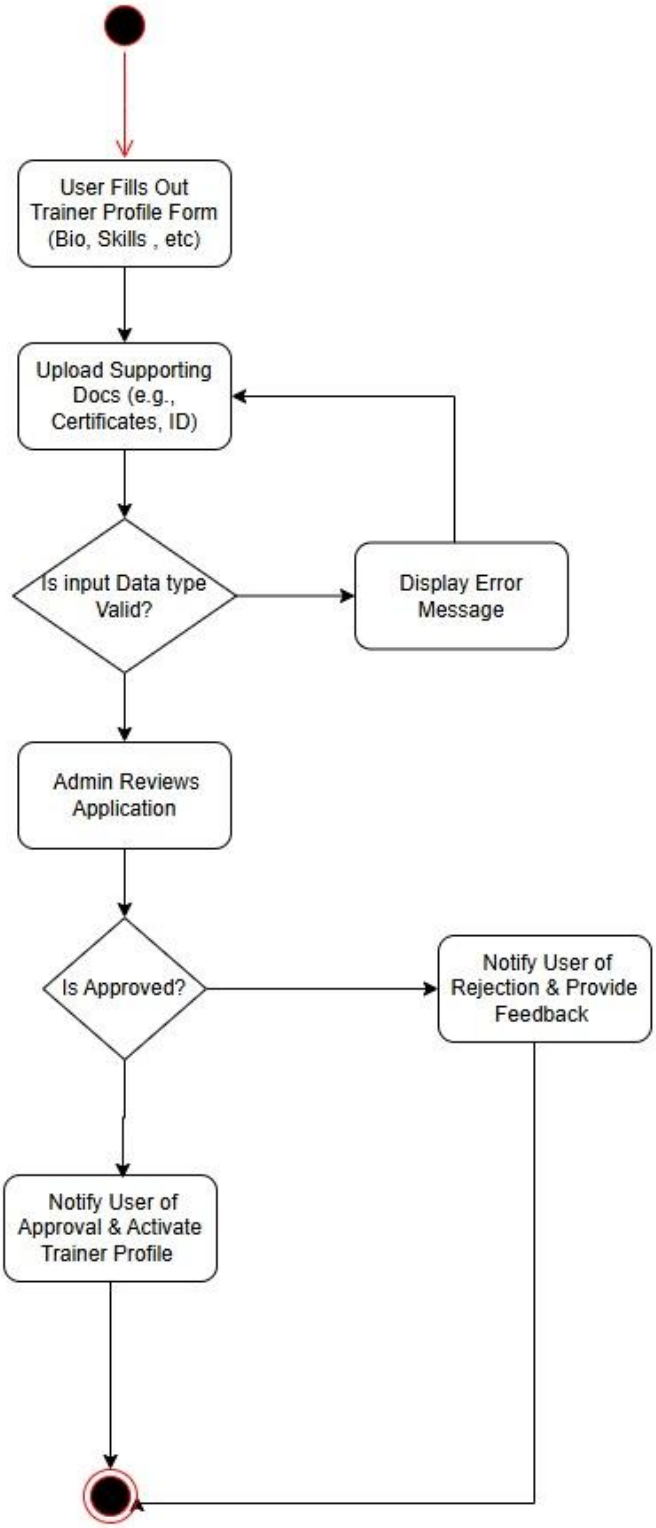
Activity Diagram-1: Registration



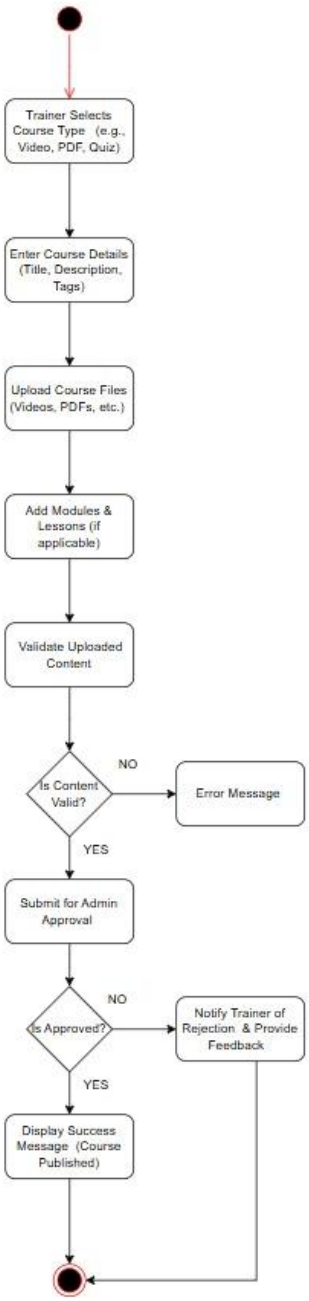
Activity Diagram-2: Login



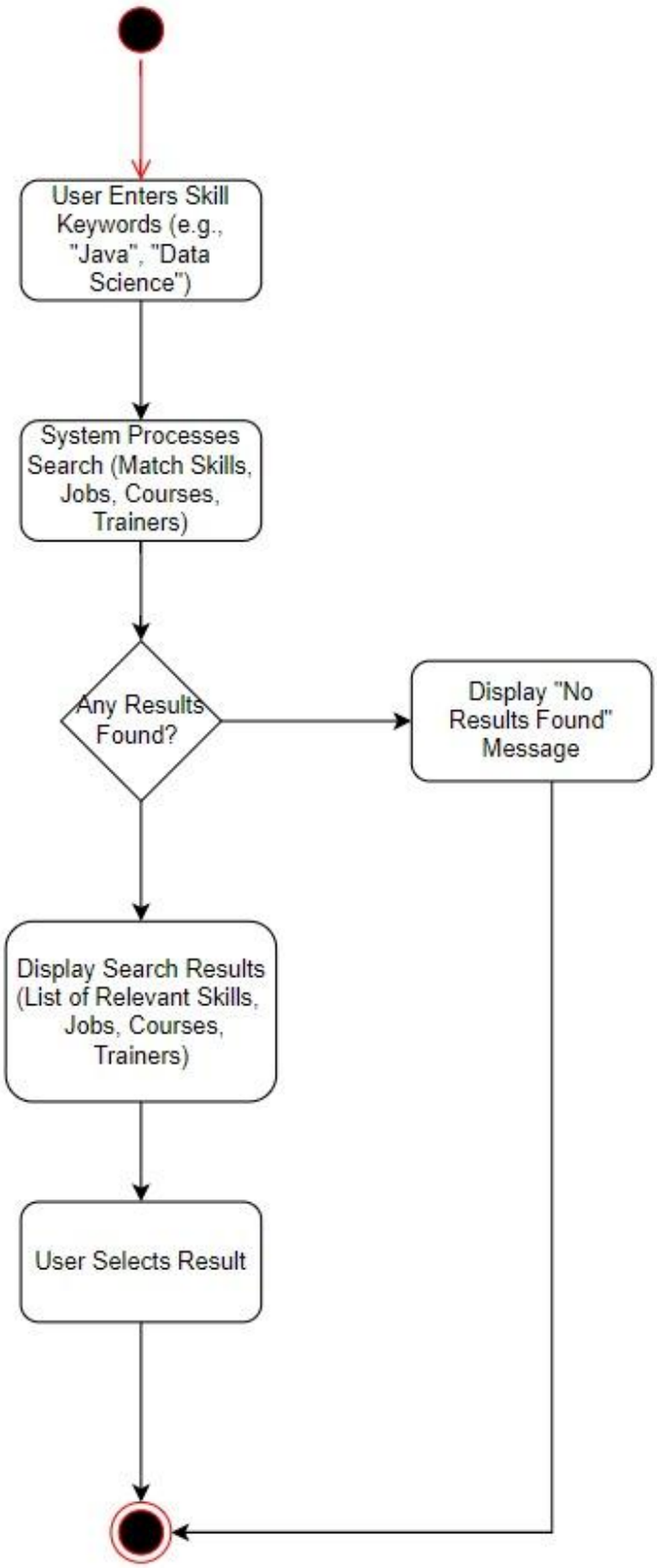
Activity Diagram-3: Become a Trainer



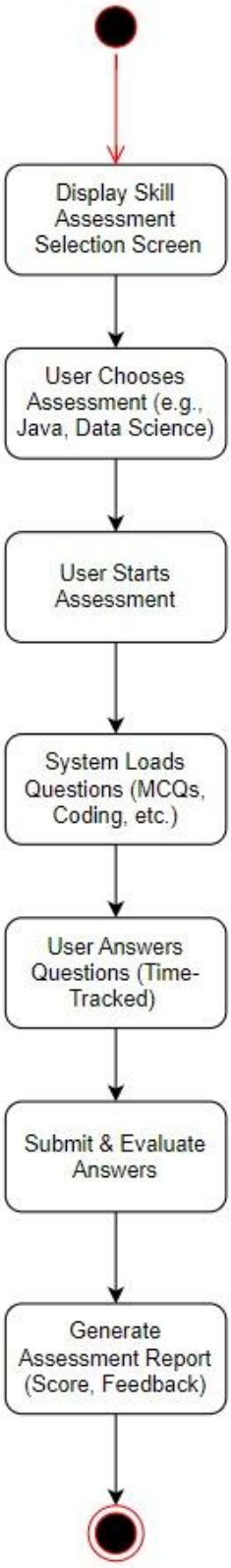
Activity Diagram-4: Upload Course Content



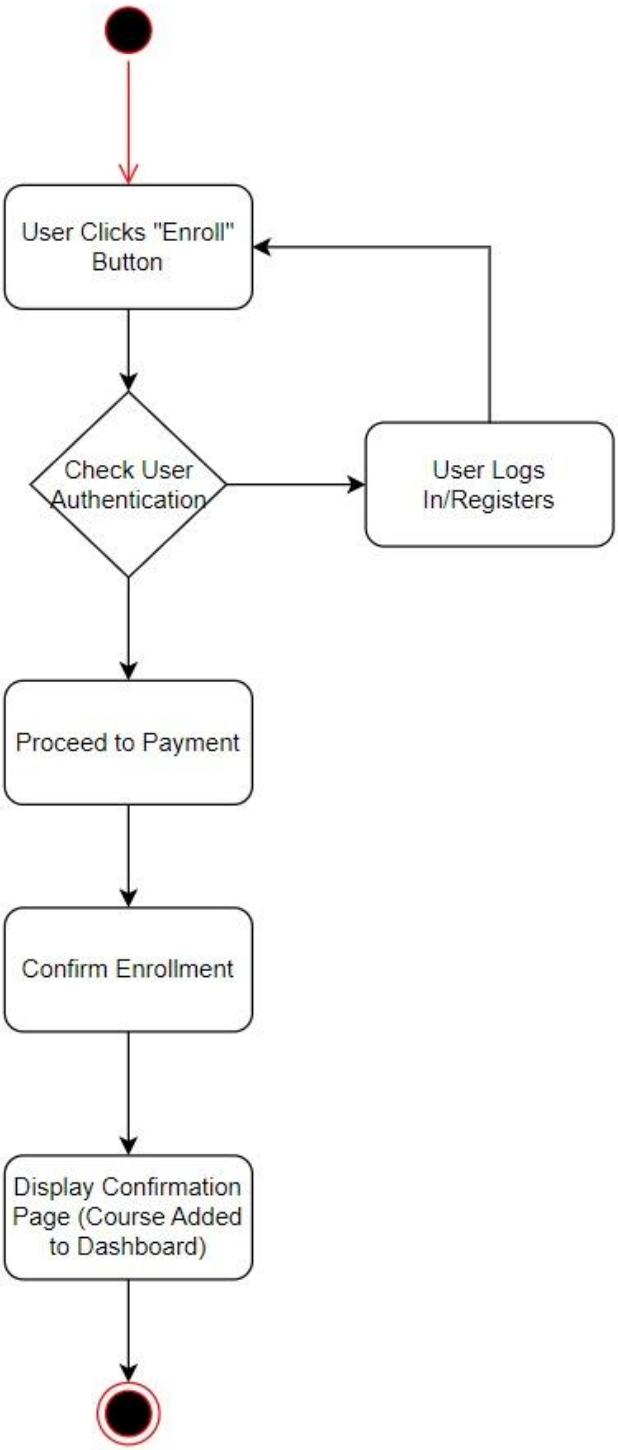
Activity Diagram-5: Search by Skill



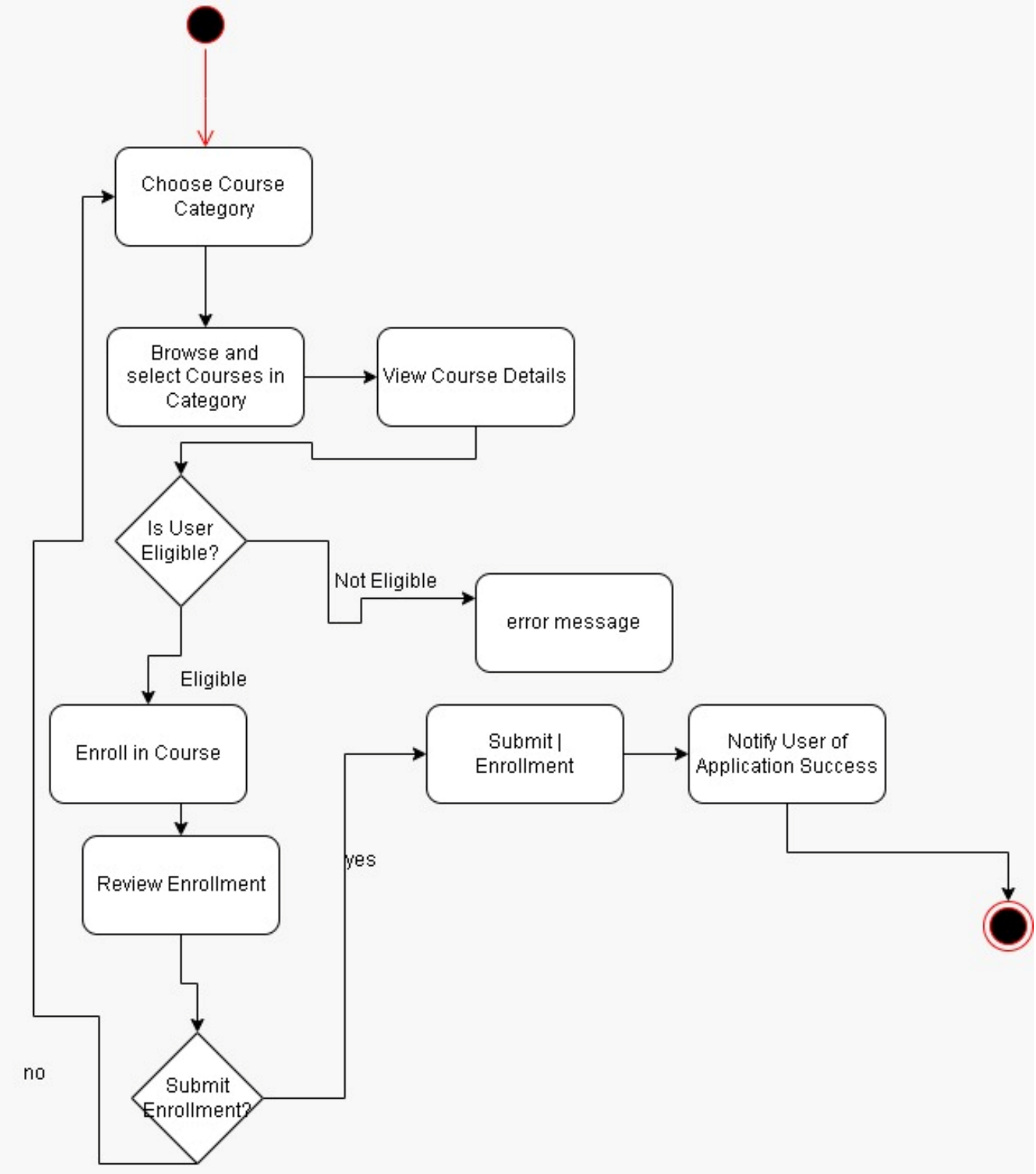
Activity Diagram-6: Skill Assessment



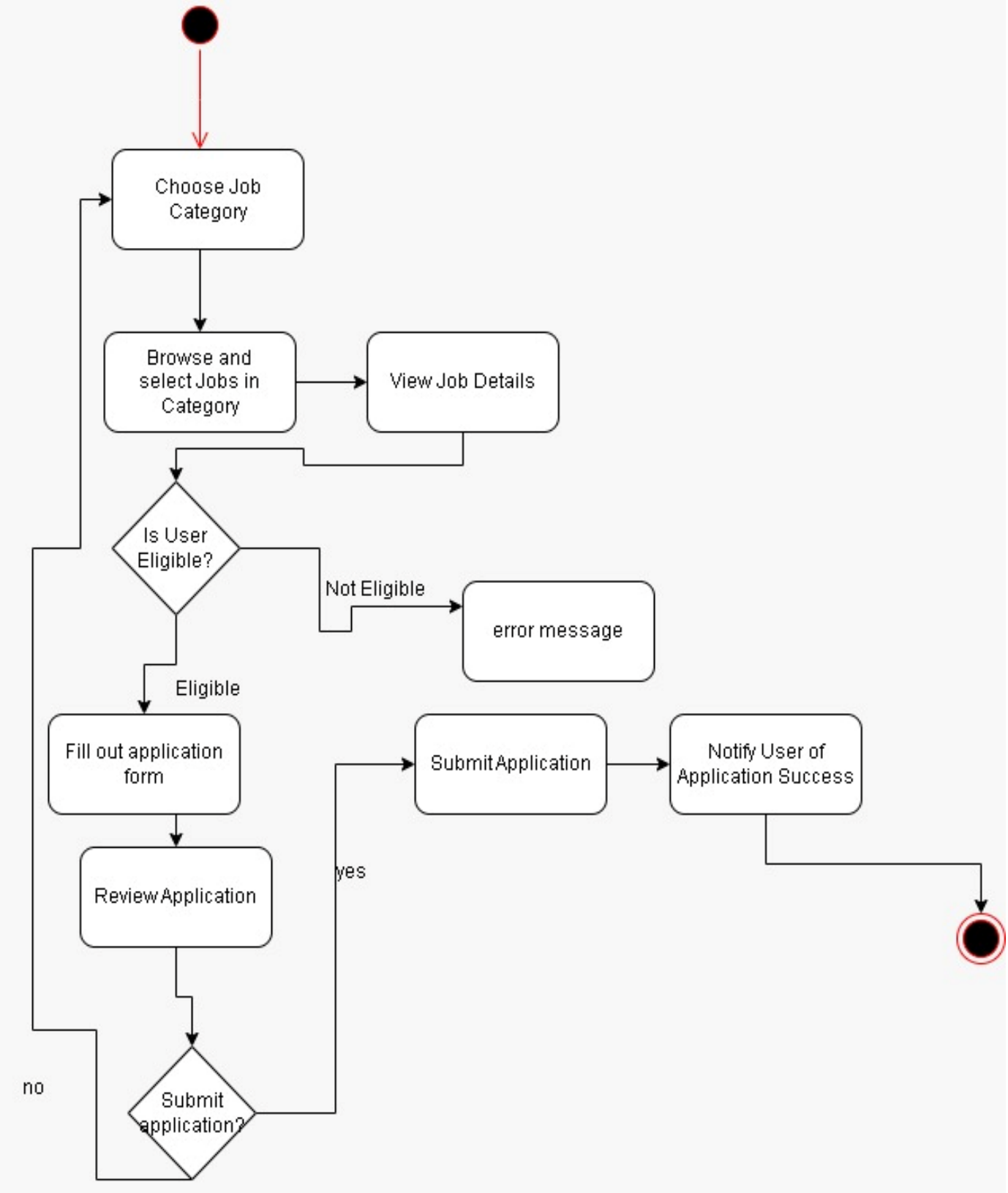
Activity Diagram-7: Enroll Course



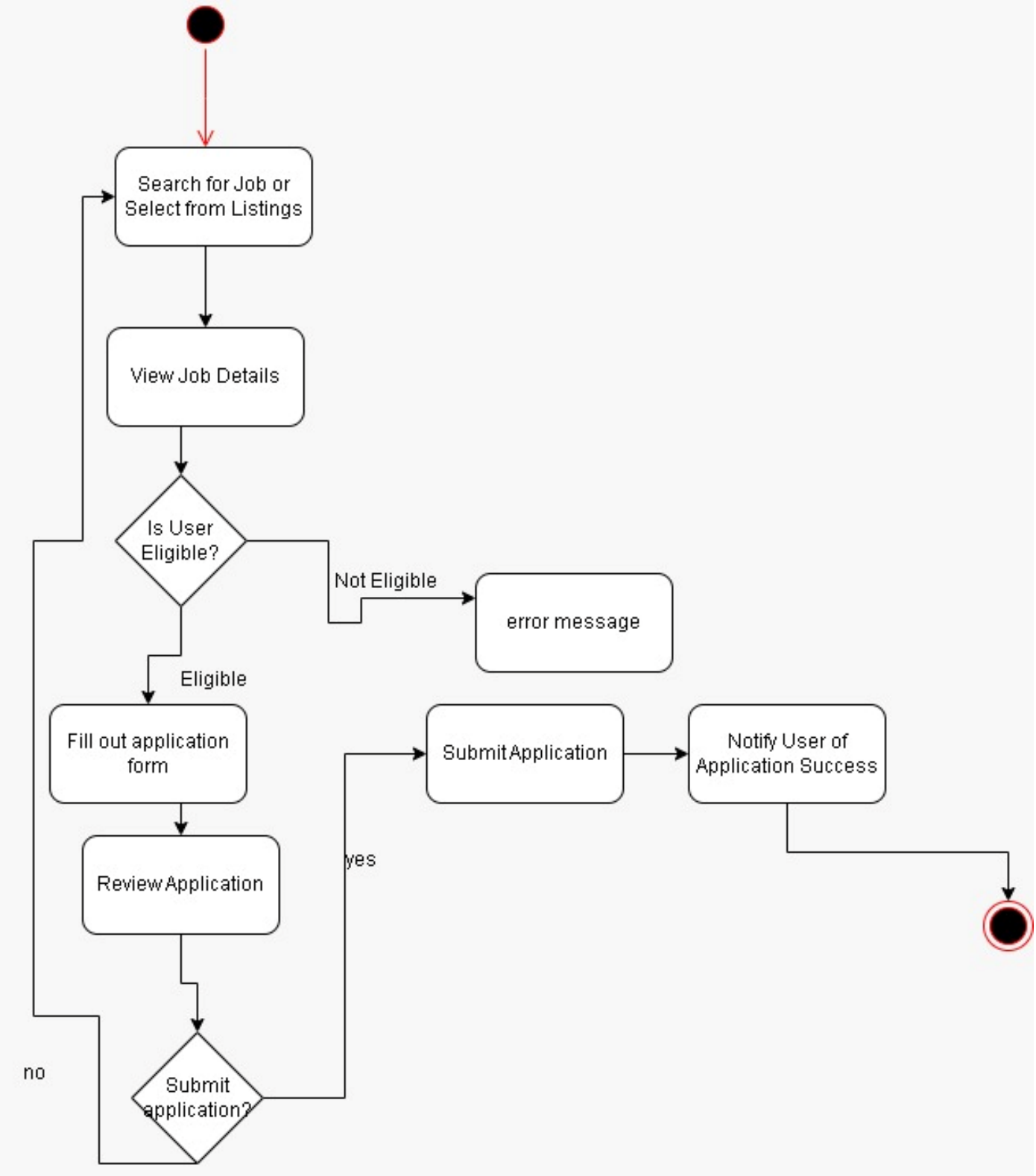
Activity Diagram-8: Browse Courses



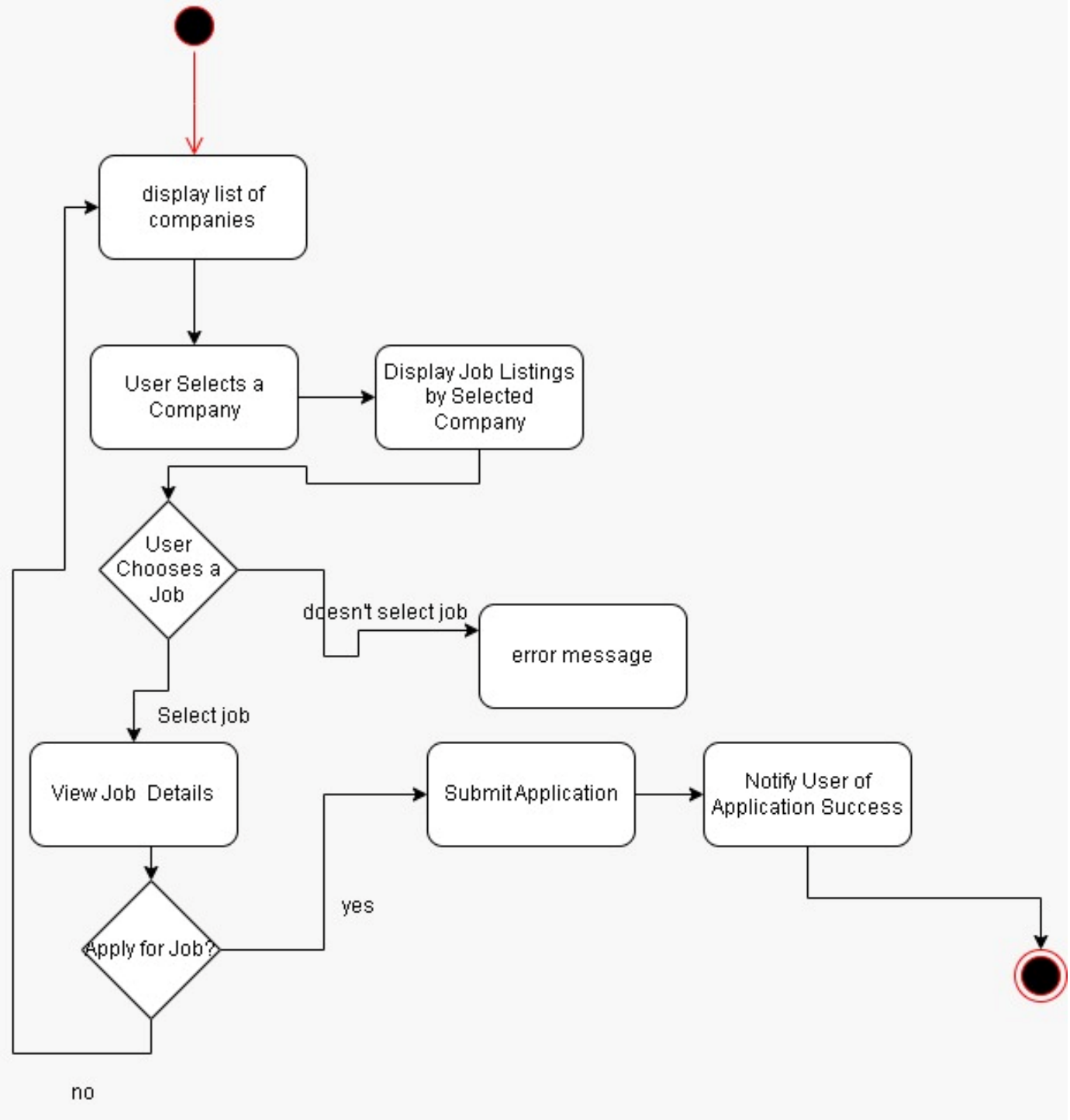
Activity Diagram-9: Jobs By Categories



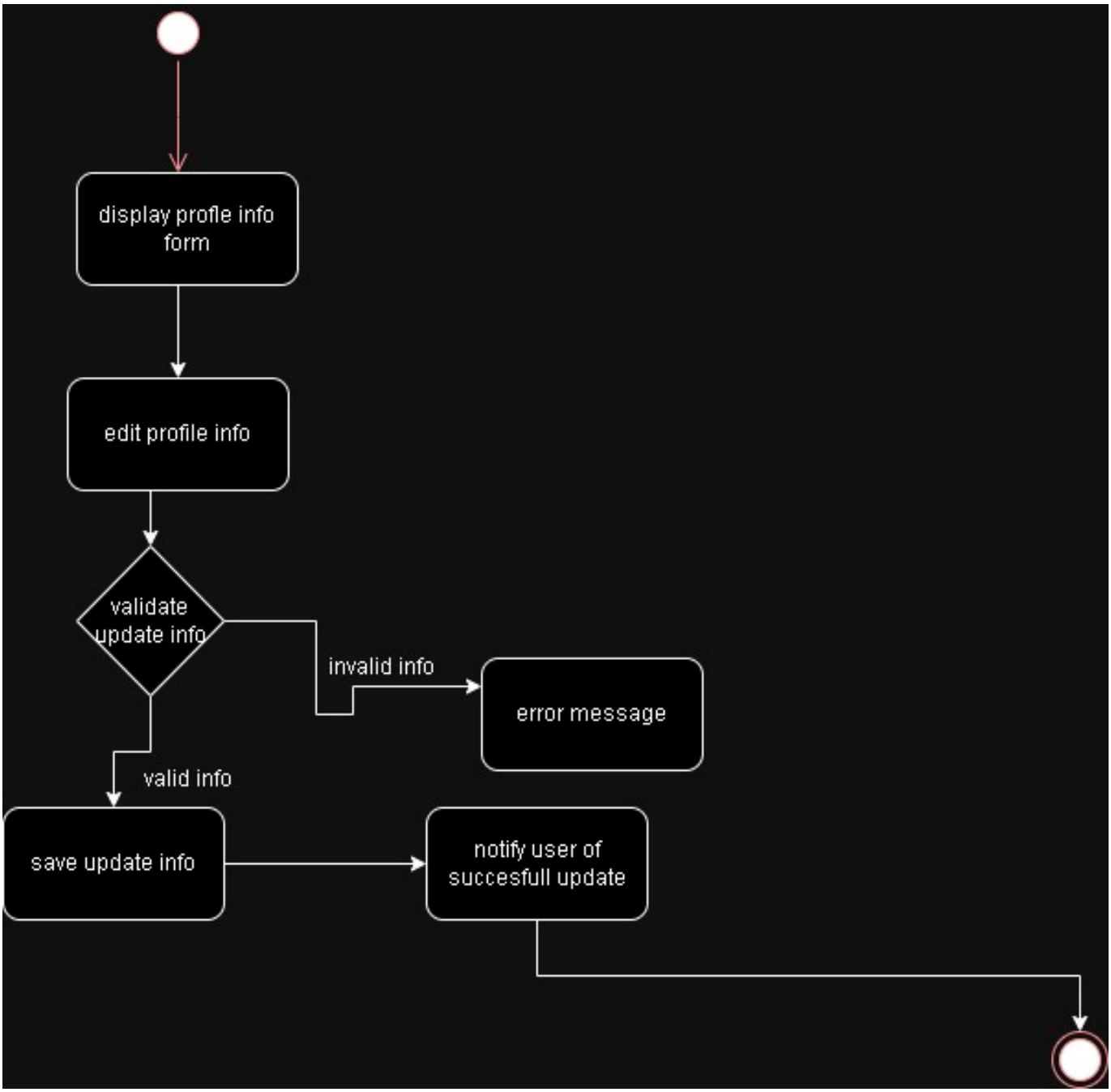
Activity Diagram-10: Apply for a Job



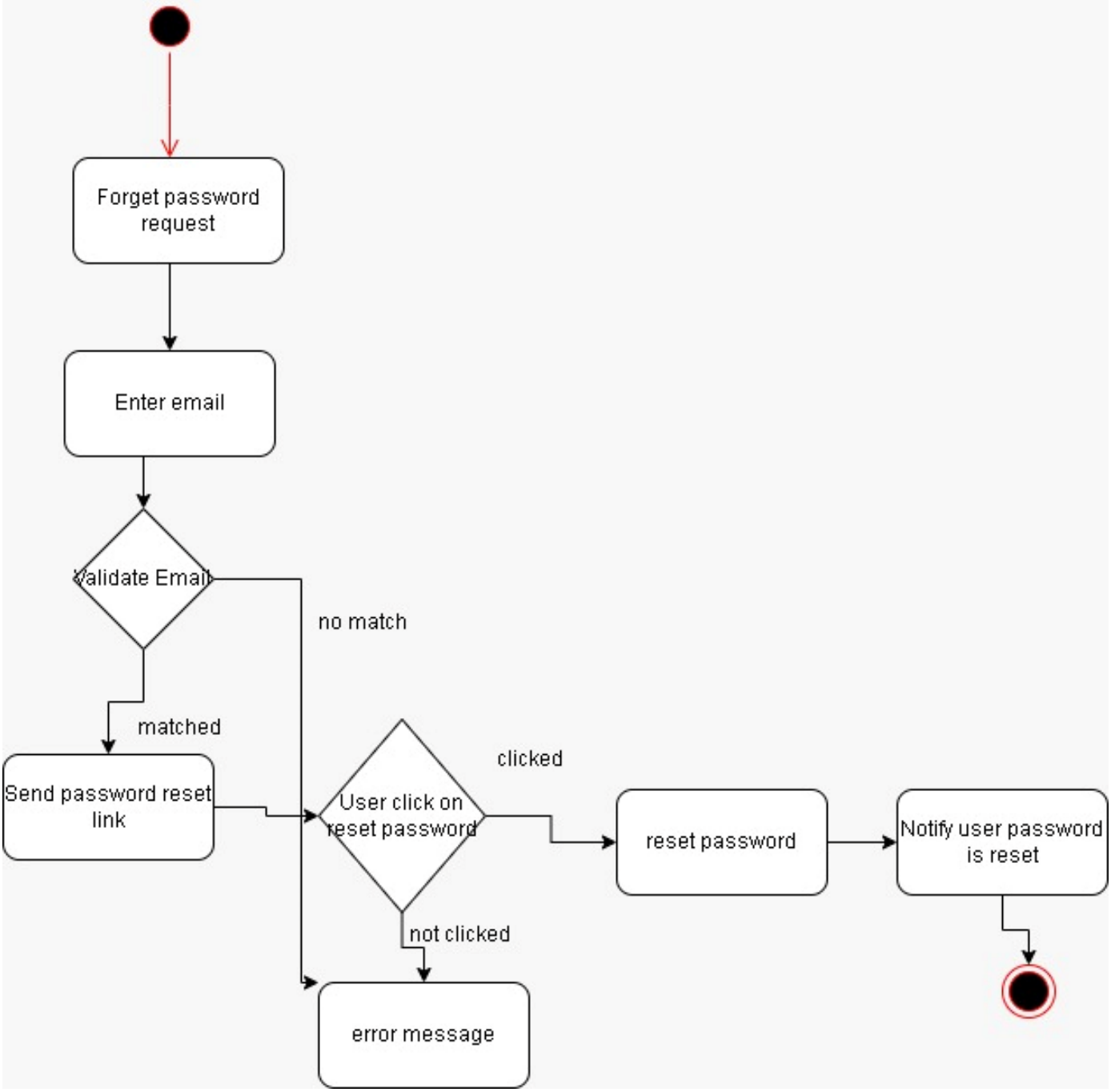
Activity Diagram-11: Jobs by Companies



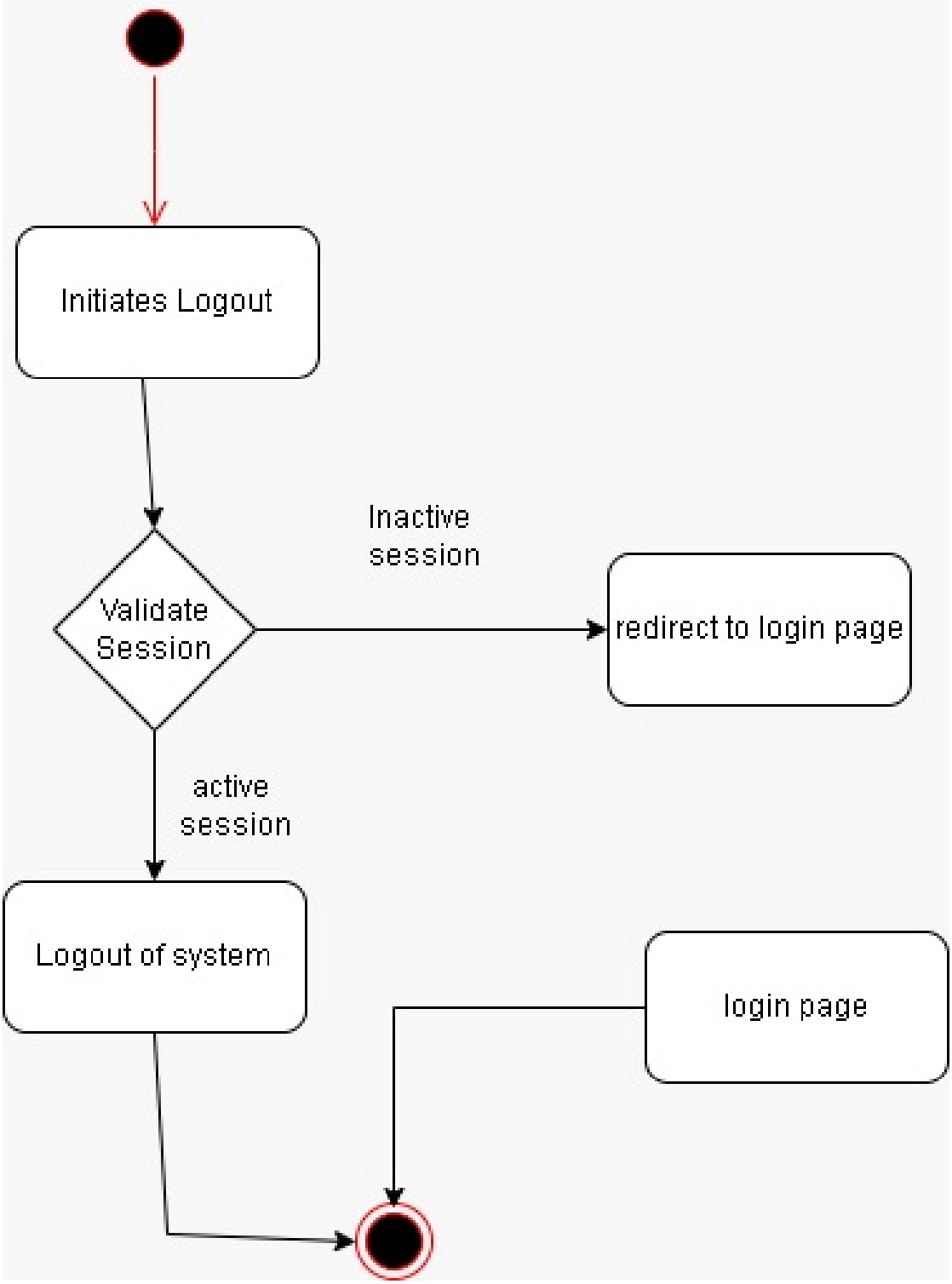
Activity Diagram-12: Update Profile Info



Activity Diagram-13: Forget Password

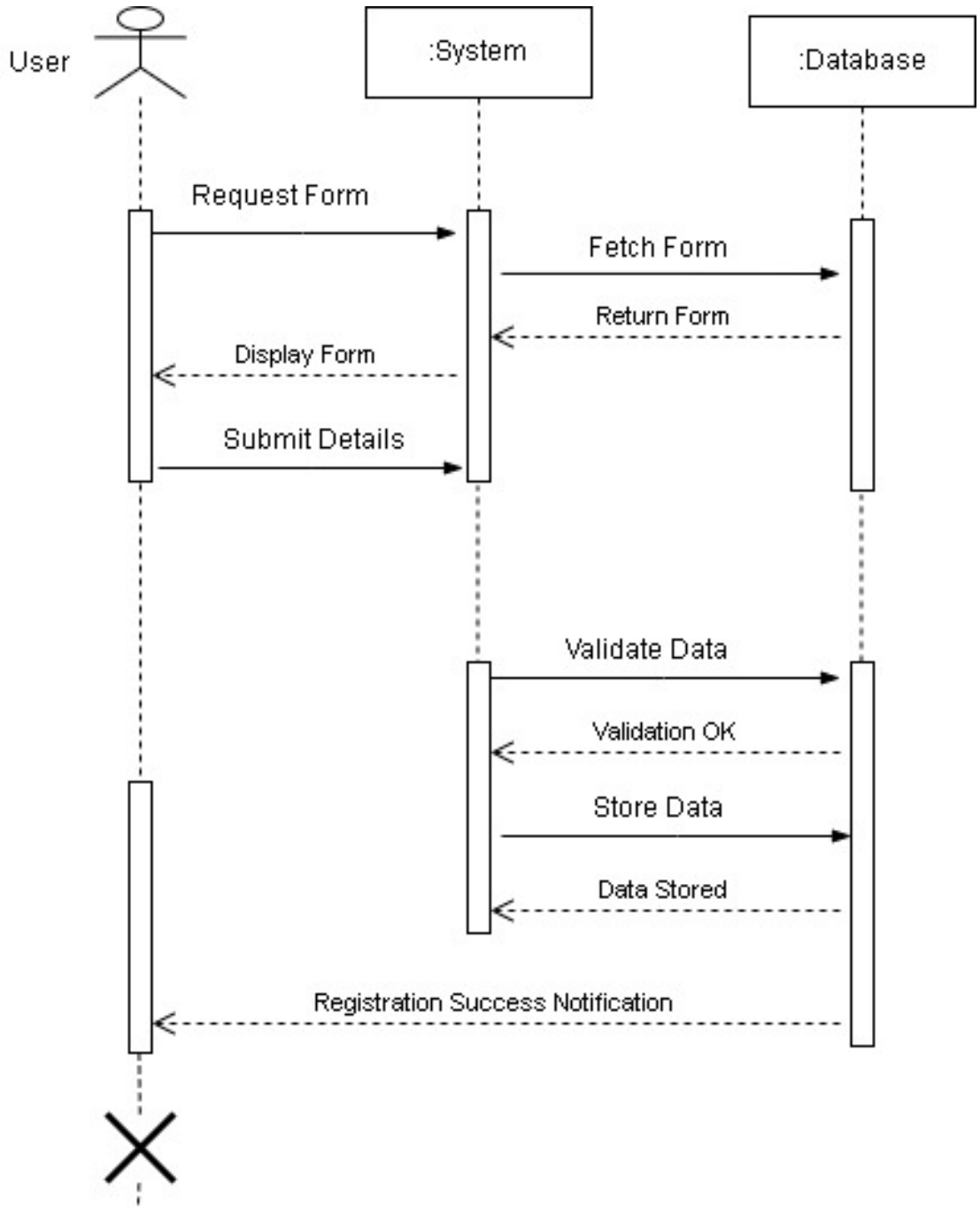


Activity Diagram-14: Logout

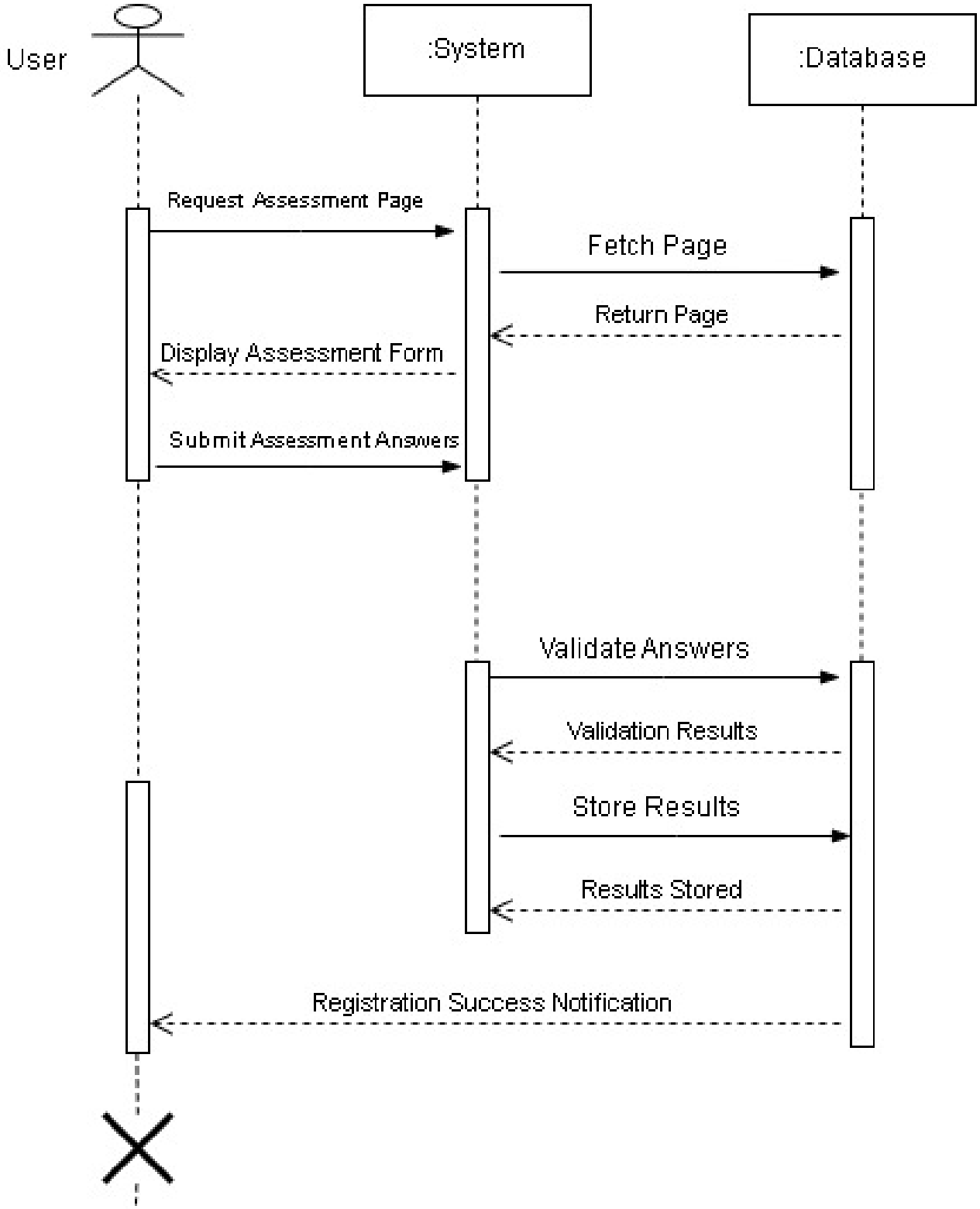


Sequence Diagram

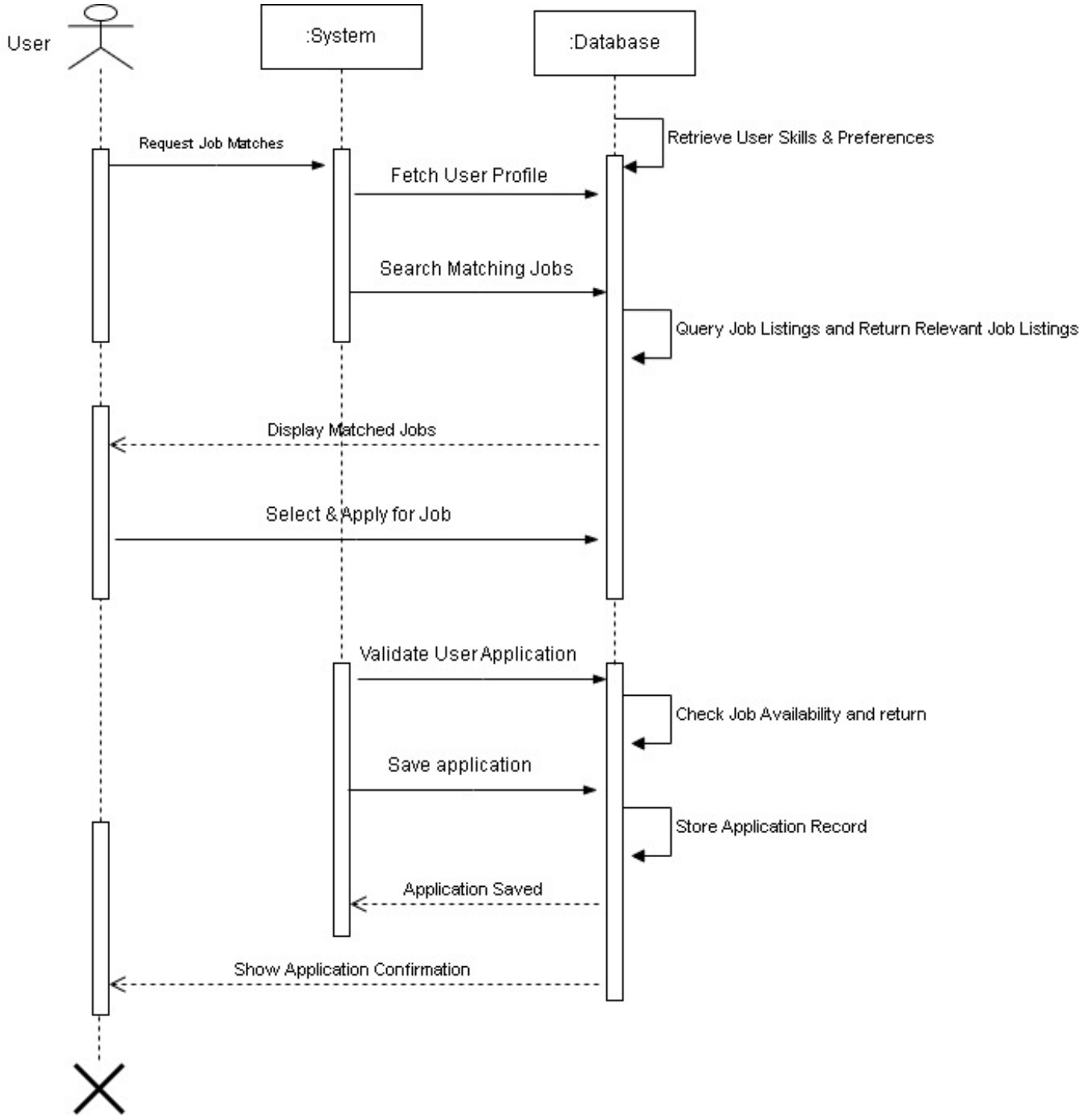
Sequence Diagram-1: User Registration



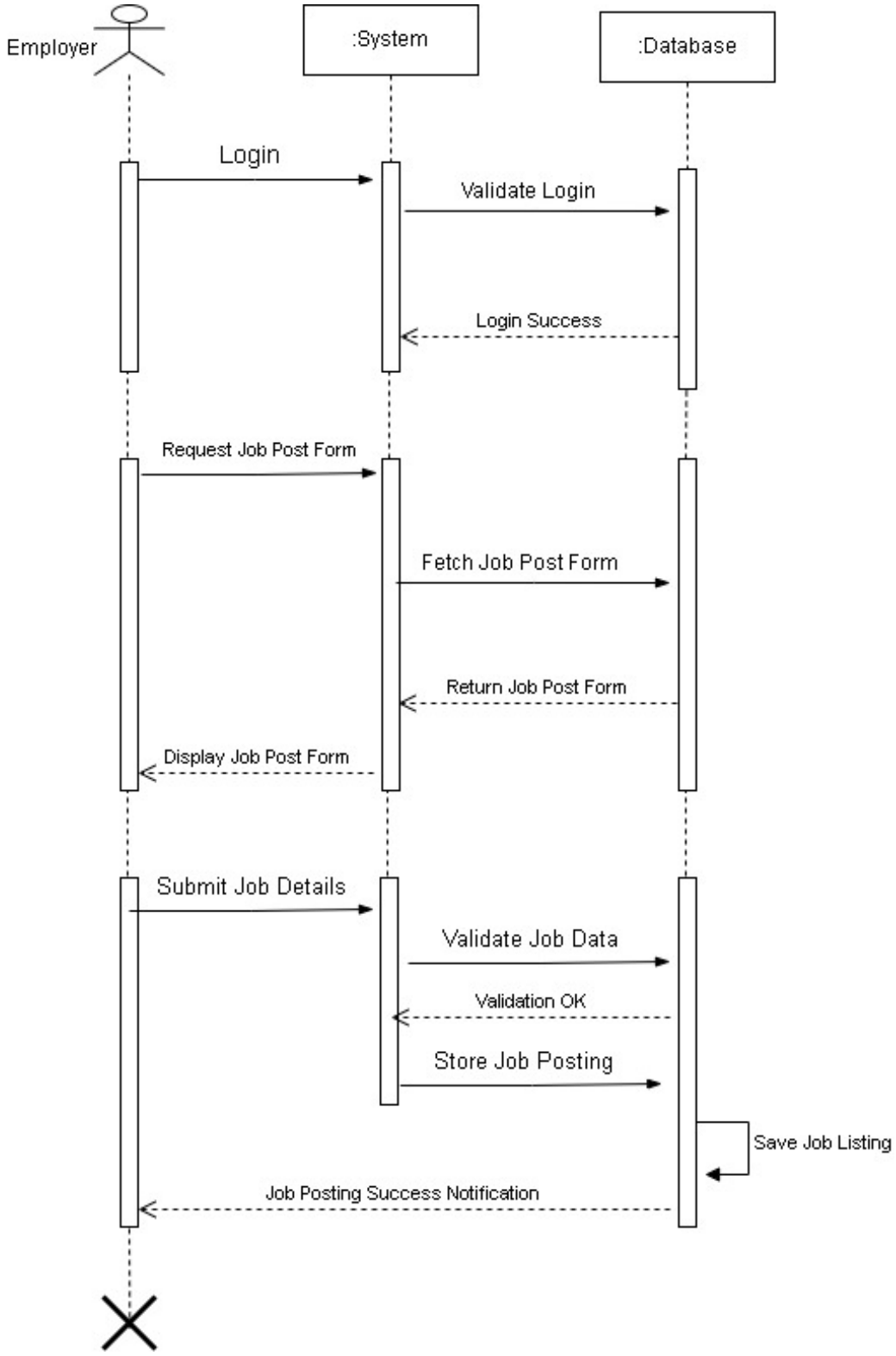
Sequence Diagram-2: Skill Assessment



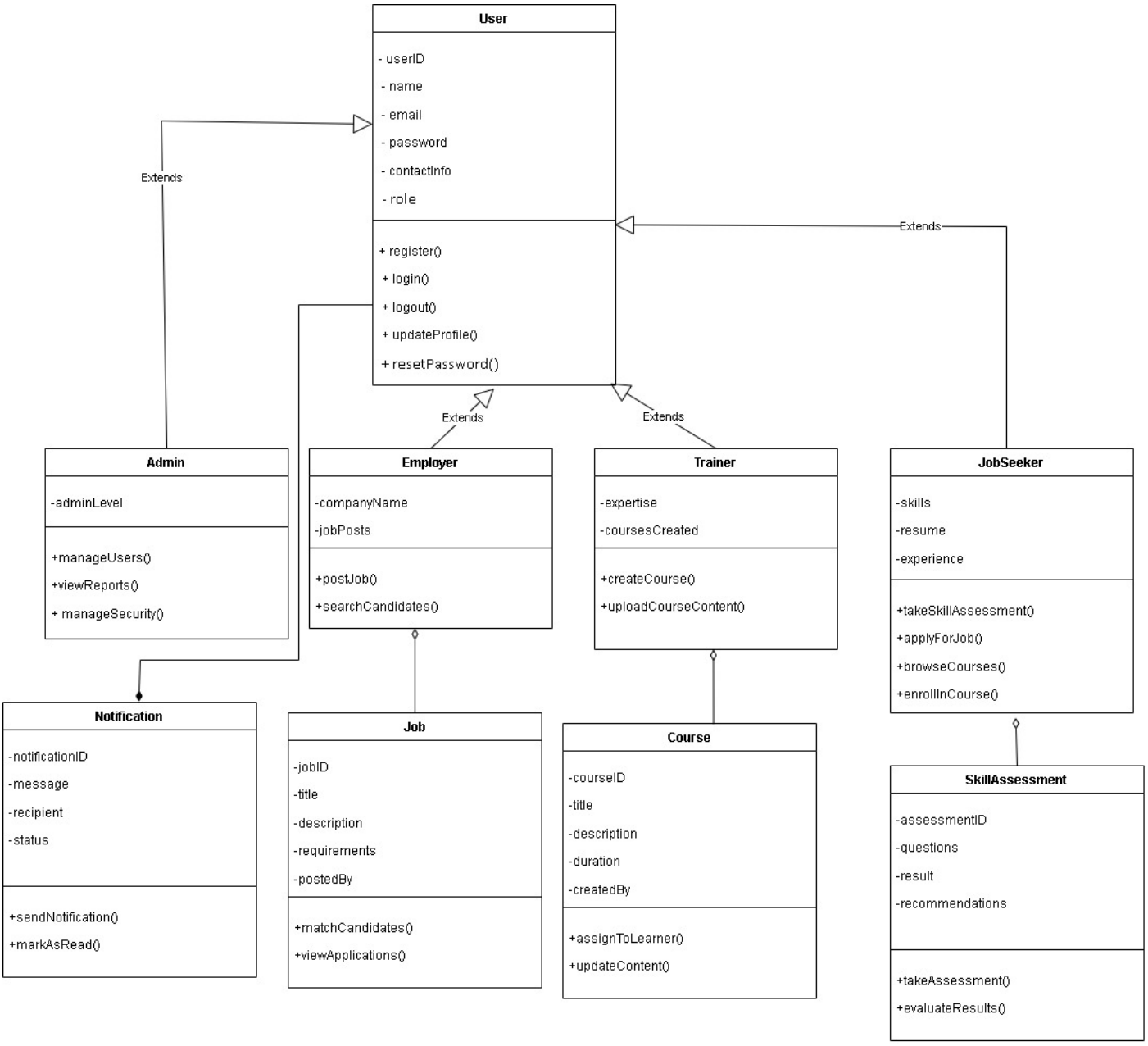
Sequence Diagram-3: Job Matching



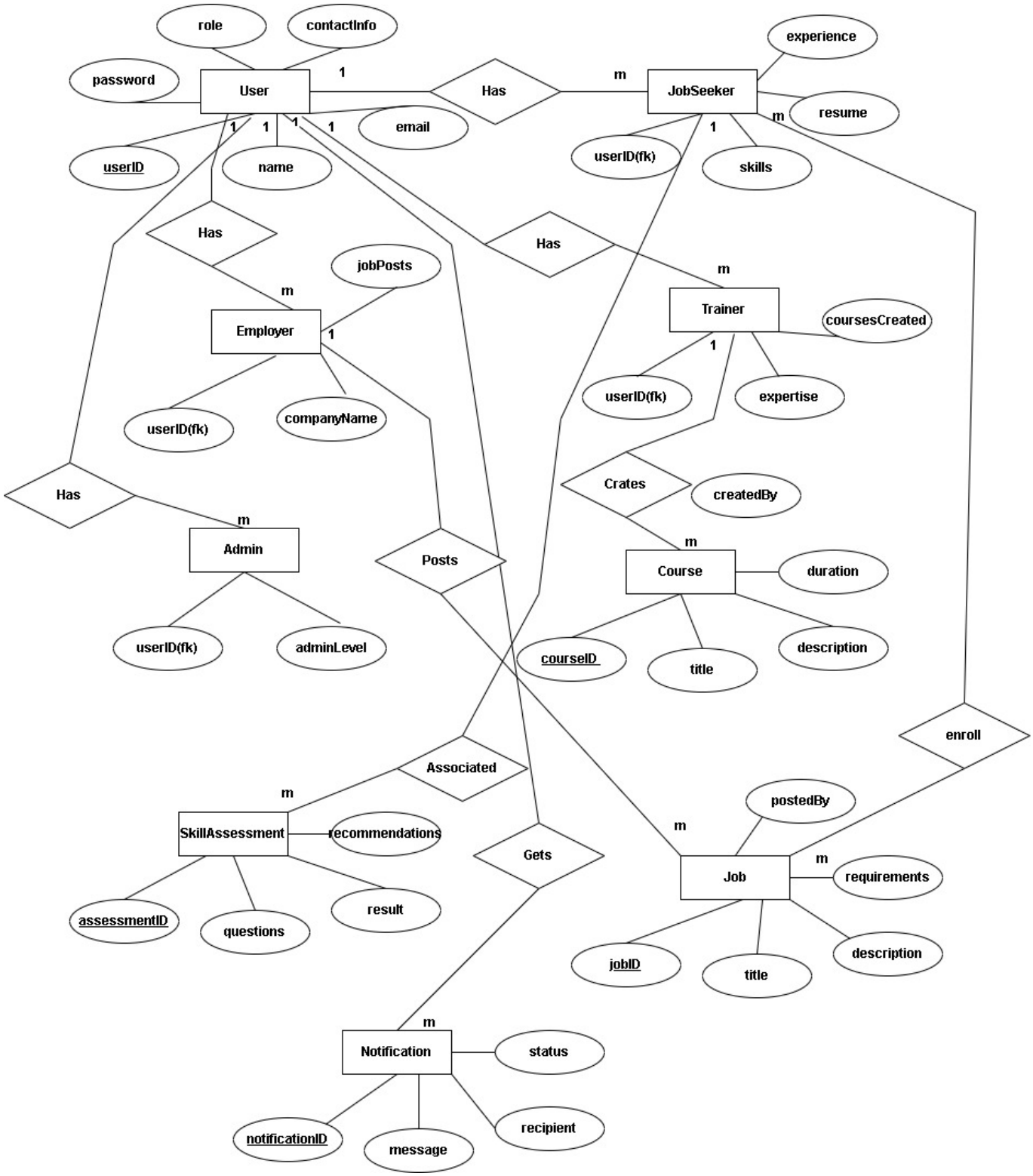
Sequence Diagram-4: Employer Job Posting



Class Diagram



ER Diagram


role
contactInfo
password
User
1
Has
m
JobSeeker
experience
resume
email
userID
name
userID(fk)
skills
Has
Has
jobPosts
m
Trainer
coursesCreated
Employer
1
userID(fk)
companyName
userID(fk)
expertise
Has
Crates
createdBy
m
Admin
Posts
m
Course
duration
userID(fk)
adminLevel
courseID
title
description
enroll
Associated
m
postedBy
SkillAssessment
recommendations
Gets
m
Job
m
requirements
assessmentID
questions
result
jobID
title
description
m
Notification
status
notificationID
message
recipient