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User Registration and Authentication

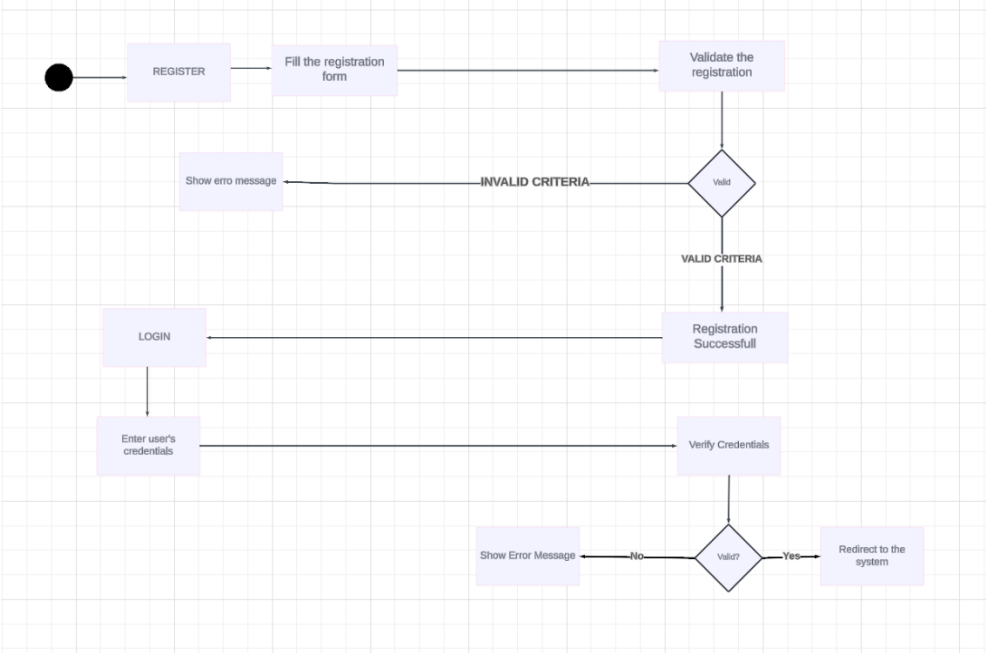
1. SRS

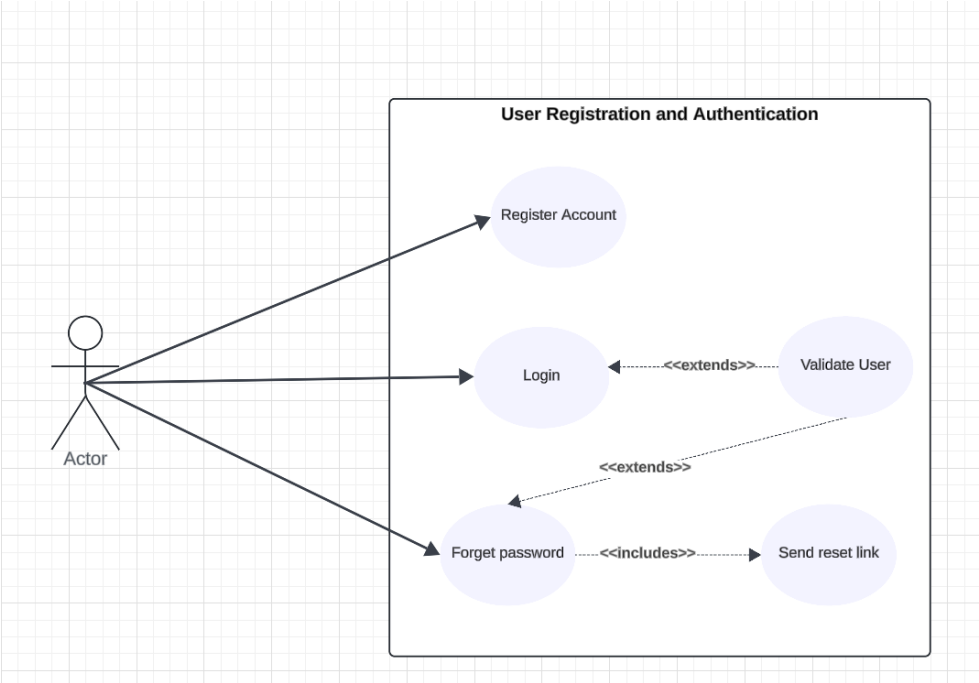
Req. Code	Req. Description	Use Case
URA-F-1.0	The system shall allow new users to register an account.	User Registration
URA-F-1.1	The system shall require a unique email for each user account.	User Registration
URA-F-1.2	The system shall require a password that meets defined complexity criteria (e.g., minimum length, uppercase/lowercase, numbers, special characters).	User Registration
URA-F-1.3	The system shall require password confirmation during registration.	User Registration
URA-F-1.4	The system shall validate all registration fields to ensure required information is provided and is in the correct format.	User Registration
URA-F-1.5	The system shall store user registration information securely in a database.	User Registration
URA-F-1.6	The system shall send an email to the registered email address.	User Registration
URA-UR-1.7	The system shall provide appropriate error messages to the user during registration if validation fails.	User Registration
URA-F-1.8	The system shall allow registered users to log in with their email and password.	User Login

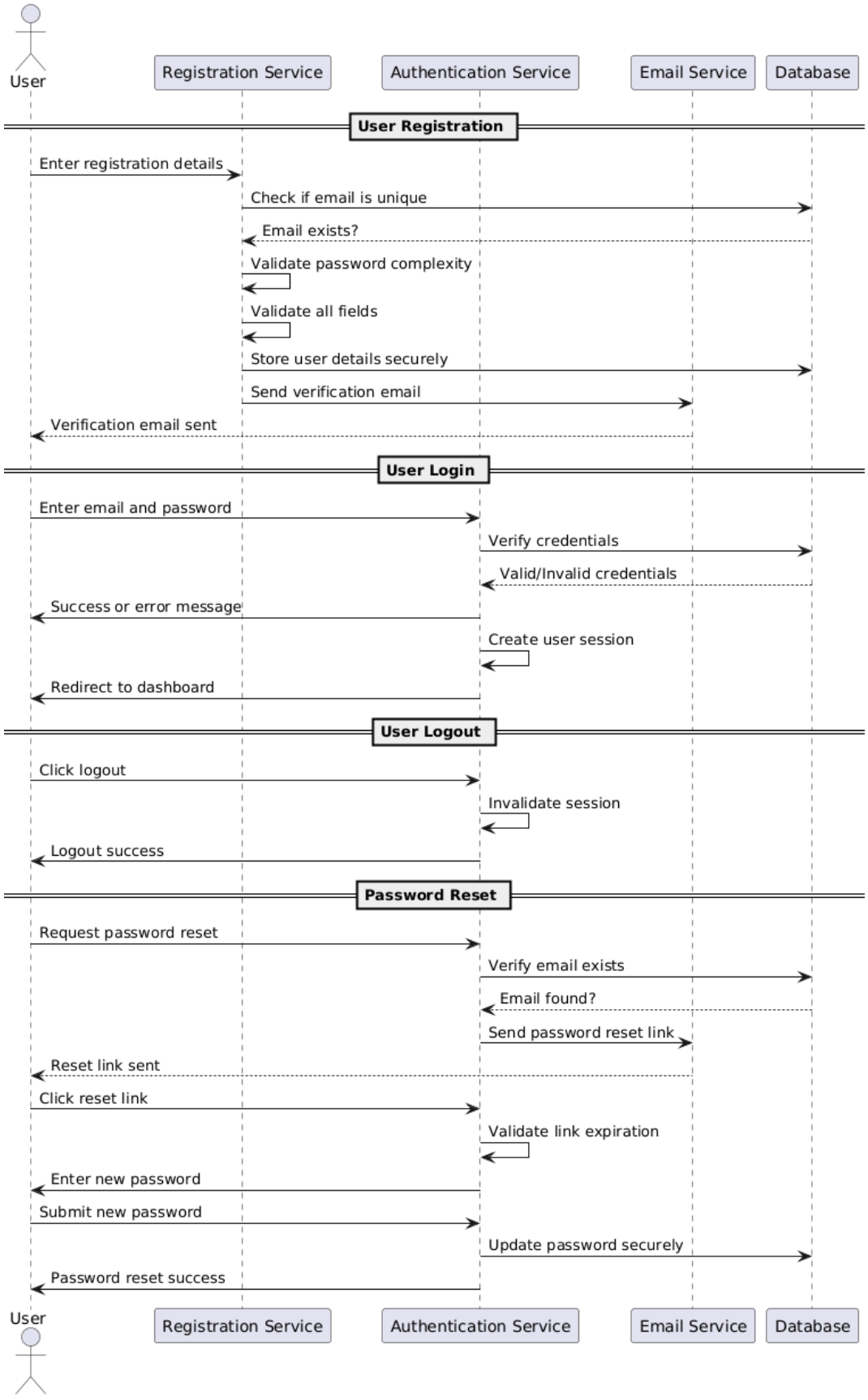
URA-F-1.9	The system shall verify user credentials against stored data.	User Login
URA-F-1.10	The system shall allow users to login using password-based authentication.	User Login
URA-NF-1.11	The system shall implement secure password handling by not storing passwords in plaintext.	User Login
URA-F-1.12	Upon successful login, the system shall create a session for the logged-in user.	User Login
URA-F-1.13	Upon successful login, the system shall redirect the user to the appropriate default page.	User Login
URA-F-1.14	The system shall allow logged-in users to log out securely.	User Logout
URA-F-1.15	The system shall invalidate user session after logging out.	User Logout
URA-UR-1.16	The system shall display an error message to the user if login fails (invalid username/password).	User Login
URA-F-1.17	The system shall provide a "Forgot Password" feature.	Password Reset
URA-F-1.18	The system shall send a password reset link (or code) to the user's registered email address.	Password Reset
URA-F-1.19	The system shall allow users to reset their password using the received link (or code).	Password Reset
URA-F-1.20	The system shall ensure the password reset link is time limited.	Password Reset

URA-NF-1.21	The system shall encrypt sensitive data, like passwords, at rest and in transit.	Security
URA-NF-1.22	The system shall protect against common security vulnerabilities (e.g., SQL injection, cross-site scripting).	Security
URA-NF-1.23	The system shall not store passwords or email reset links in plain text	Security
URA-NF-1.24	The system shall protect access to user accounts through strong authentication and authorization	Security
URA-NF-1.25	The system shall respond to user requests (e.g., login, registration)	General
URA-UR-1.26	The system shall provide clear visual feedback to the user during any processing that takes longer than **1 second**.	General
URA-UR-1.27	The user interface shall adapt to various screen sizes (desktop, tablet, mobile) without loss of functionality or usability.	General

2. UMLS


REGISTER
Fill the registration form
Validate the registration
Valid
INVALID CRITERIA
Show erro message
VALID CRITERIA
Registration Successfull
LOGIN
Enter user's credentials
Verify Credentials
Valid?
No
Yes
Show Error Message
Redirect to the system


User Registration and Authentication
Register Account
Login
<<extends>>
Validate User
<<extends>>
Forget password
<<includes>>
Send reset link
Actor


User
Registration Service
Authentication Service
Email Service
Database
User Registration
Enter registration details
Check if email is unique
Email exists?
Validate password complexity
Validate all fields
Store user details securely
Send verification email
Verification email sent
User Login
Enter email and password
Verify credentials
Valid/Invalid credentials
Success or error message
Create user session
Redirect to dashboard
User Logout
Click logout
Invalidate session
Logout success
Password Reset
Request password reset
Verify email exists
Email found?
Send password reset link
Reset link sent
Click reset link
Validate link expiration
Enter new password
Submit new password
Update password securely
Password reset success
User
Registration Service
Authentication Service
Email Service
Database

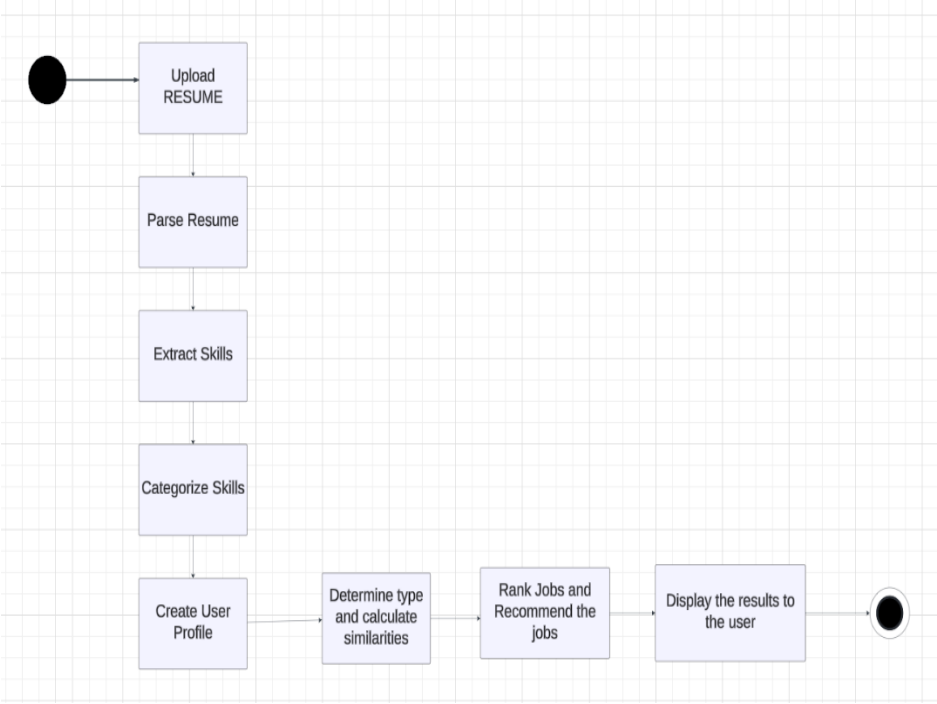
Resume-Based Job Recommendation System

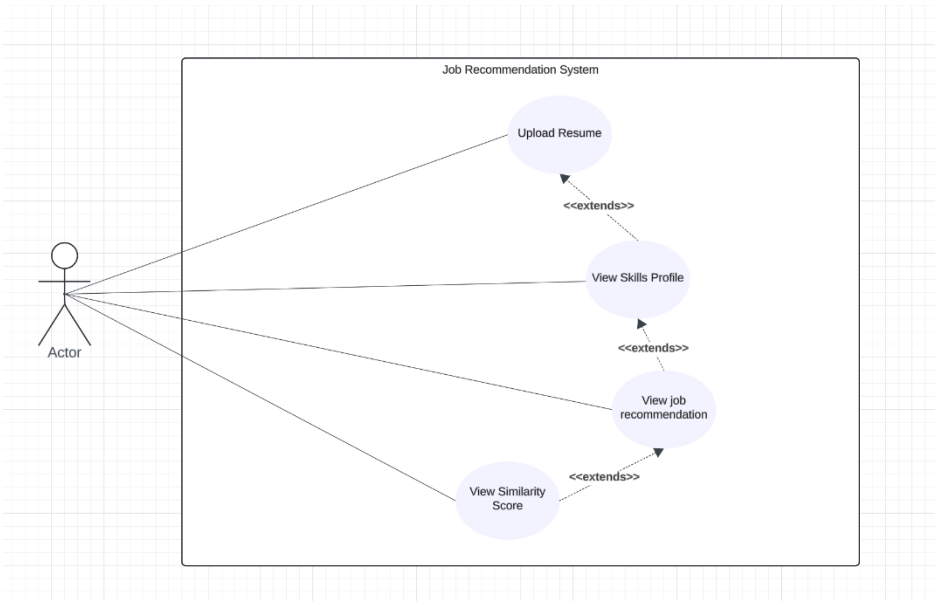
1. SRS

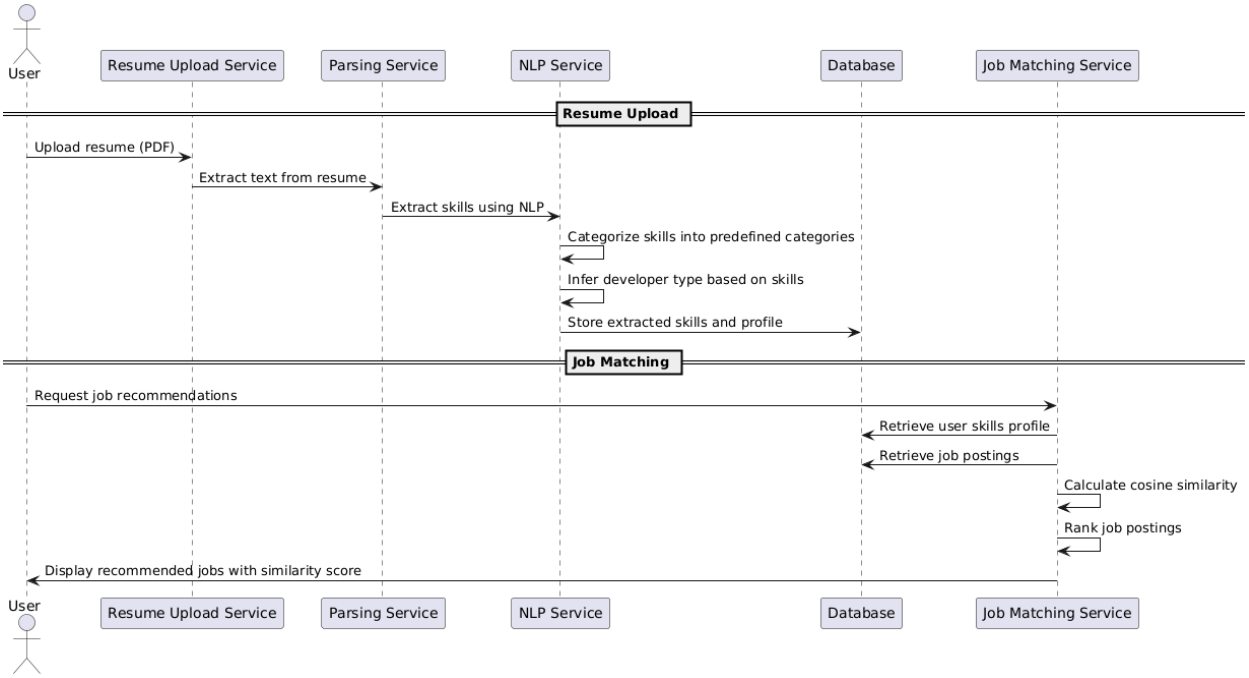
Req. Code	Req. Description	Use Case
JRS-F-1.0	The system shall allow users to upload their resume in a common format (e.g., PDF).	Resume Upload
JRS-F-1.1	The system shall parse the uploaded resume to extract text content.	Resume Parsing
JRS-F-1.2	The system shall identify and extract relevant skills mentioned in the resume using Natural Language Processing (NLP) techniques (e.g., Named Entity Recognition, keyword extraction).	Skills Extraction
JRS-F-1.3	The system shall categorize skills into predefined categories (e.g., Programming Languages, Databases, Frameworks, Cloud Technologies, etc.).	Skills Categorization
JRS-F-1.4	The system shall analyze the extracted skills and job titles/descriptions in the resume to determine the developer type (e.g., Frontend, Backend, Full-Stack, Mobile, DevOps, etc.).	Developer Type Inference
JRS-F-1.5	The system shall create a skills profile for each user based on the extracted and categorized skills.	User Profile Generation
JRS-F-1.6	The system shall calculate the cosine similarity between the user's skills profile and job profile for all job postings in the system.	Similarity Calculation
JRS-F-1.7	The system shall rank job postings based on their cosine similarity score to a user's skill profile.	Job Ranking

JRS-F-1.8	The system shall recommend the top N job postings with highest cosine similarity score to the user. (where N is configurable)	Job Recommendation
JRS-F-1.9	The system shall display recommended job postings to the user in an understandable format, including job title, company, short description, and a link to the full posting.	Job Display
JRS-F-1.10	The system shall allow user to see the similarity score between his profile and the job recommended.	Job Display

2. UMLS




Job Recommendation System
Upload Resume
<<extends>>
View Skills Profile
<<extends>>
View job recommendation
<<extends>>
View Similarity Score
Actor


User
Resume Upload Service
Parsing Service
NLP Service
Database
Job Matching Service
Resume Upload
Upload resume (PDF)
Extract text from resume
Extract skills using NLP
Categorize skills into predefined categories
Infer developer type based on skills
Store extracted skills and profile
Job Matching
Request job recommendations
Retrieve user skills profile
Retrieve job postings
Calculate cosine similarity
Rank job postings
Display recommended jobs with similarity score
User
Resume Upload Service
Parsing Service
NLP Service
Database
Job Matching Service

Job Management System

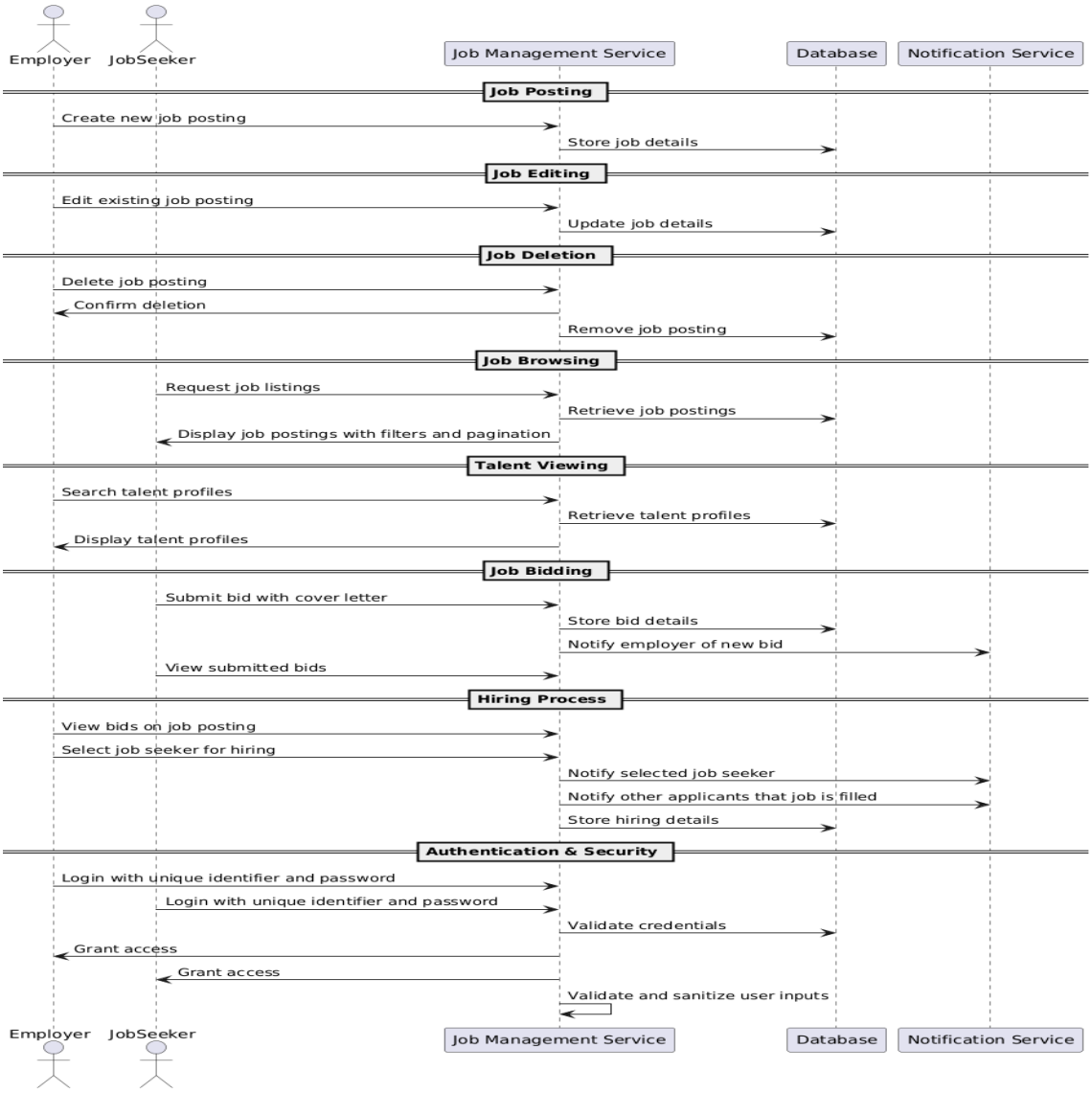
1. SRS

Req. Code	Req. Description	Use Case
JMS-F-1.0	The system shall allow registered clients to post new job openings.	Job Posting
JMS-F-1.1	Job postings shall include a job title, description, required skills, salary range.	Job Posting
JMS-F-1.2	The system shall allow employers to edit existing job postings.	Job Editing
JMS-F-1.3	Clients shall be able to modify all fields of a job posting.	Job Editing
JMS-F-1.4	The system shall allow clients to delete job postings.	Job Deletion
JMS-F-1.5	The system shall provide confirmation before permanently deleting a job posting.	Job Deletion
JMS-F-1.6	The system shall store job postings in a database.	Job Management
JMS-UR-1.7	The system shall display job postings in a user-friendly format to job seekers.	Job Browsing
JMS-F-1.8	Job seekers should be able to filter job listings based on various criteria.	Job Browsing
JMS-F-1.9	The system shall support pagination for long lists of job postings.	Job Browsing

JMS-F-1.10	The system shall allow employers to browse talent profiles.	Talent Viewing
JMS-F-1.11	The system shall allow employers to search talent profiles based on criteria.	Talent Viewing
JMS-F-1.12	Employers shall be able to see talent profiles which includes all information	Talent Viewing
JMS-F-1.13	The system shall allow job seekers to bid on job postings.	Job Bidding
JMS-F-1.14	Job seekers shall be able to submit a bid with a personalized message (cover letter).	Job Bidding
JMS-F-1.15	The system shall notify employers of new bids on their job postings.	Job Bidding
JMS-F-1.16	Job seekers shall be able to view all the jobs on which they bid.	Job Bidding
JMS-F-1.17	The system shall allow employers to view bids on their job postings.	Hiring Process
JMS-F-1.18	Employers shall be able to view job seeker profiles associated with bids.	Hiring Process
JMS-F-1.18	The system shall allow employers to select a job seeker for hiring.	Hiring Process
JMS-F-1.19	The system shall notify job seekers if they have been selected for a job.	Hiring Process
JMS-F-1.20	The system shall notify other job seekers of the job being filled.	Hiring Process

JMS-F-1.21	The system shall store information about the hiring process.	Hiring Process
JMS-F-1.22	The system shall implement authentication for employers and job seekers using a unique identifier and password.	Authentication
JMS-NF-1.23	The system shall implement data validation and sanitization for all user inputs.	Security

2. UMLS

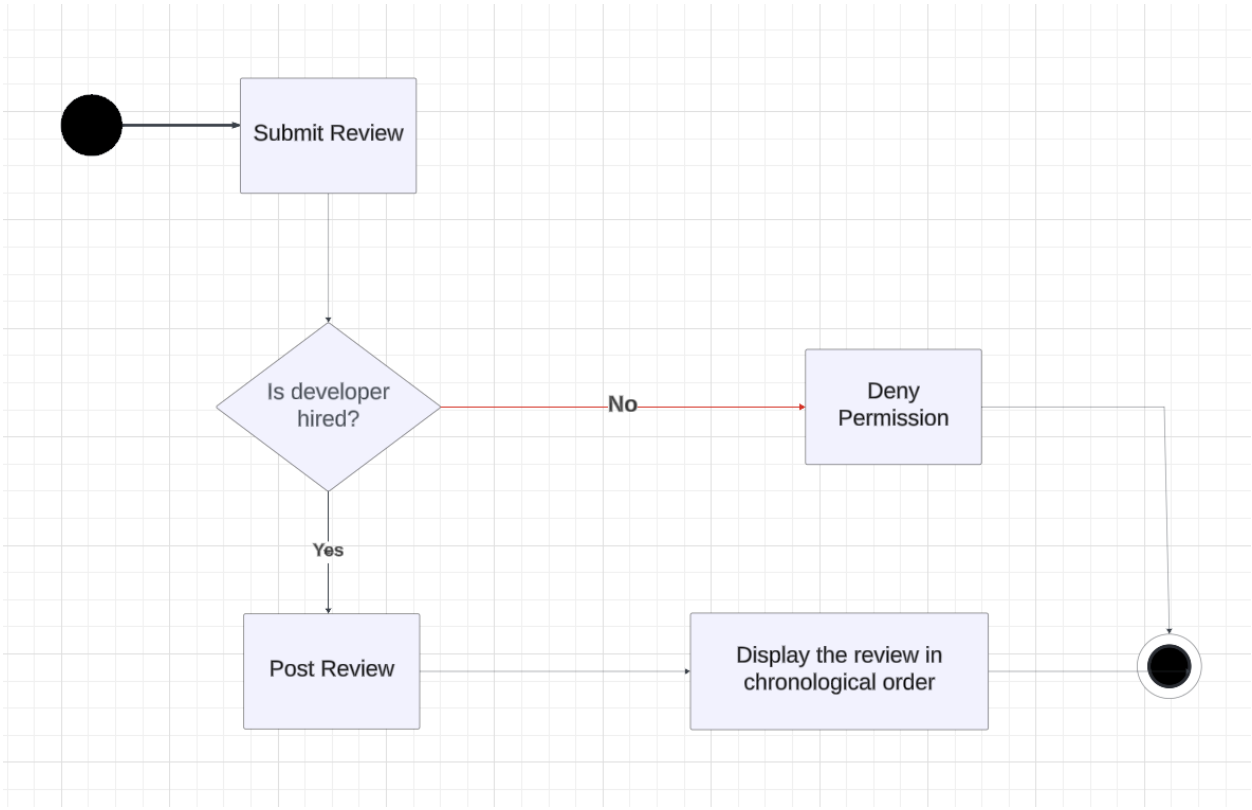


Review Management System

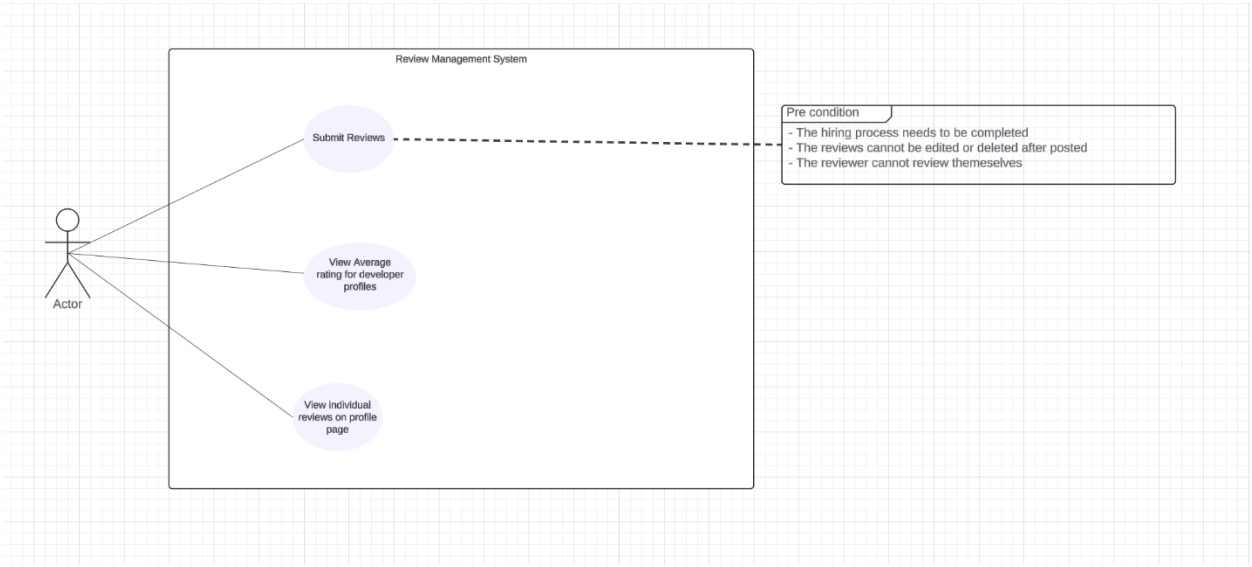
1. SRS

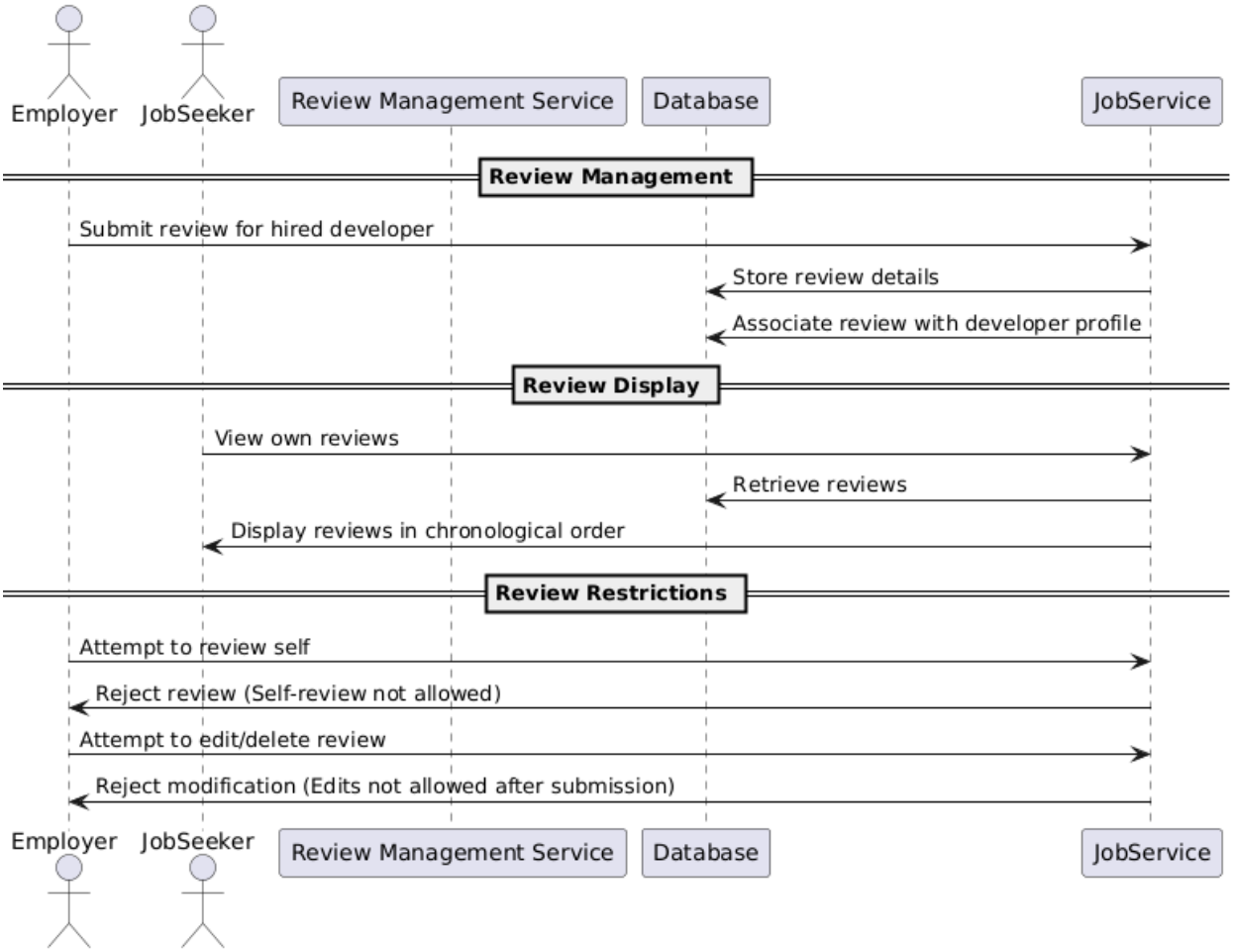
Req. Code	Req. Description	Use Case
RMS-F-1.0	The system shall allow employers to submit reviews for developers they have hired.	Review Creation
RMS-F-1.1	Reviews shall include a rating (e.g., on a scale of 1-5 stars) and an optional text-based comment.	Review Creation
RMS-F-1.2	Reviews shall be associated with the specific developer profile they were given for.	Review Association
RMS-F-1.3	The system shall not allow users to review themselves.	Review Restriction
RMS-F-1.4	Employers shall only be able to review a developer after completing a hiring process with them.	Review Restriction
RMS-F-1.5	The system shall display the average rating for each developer profile.	Review Display
RMS-F-1.6	The system shall display all individual reviews on the developer profile page.	Review Display
RMS-F-1.7	The system shall display the reviewer's name or alias with each review.	Review Display
RMS-F-1.8	Reviews shall be displayed in chronological order (most recent first).	Review Display
RMS-F-1.9	The system shall not allow employers to edit or delete reviews they have submitted after they have been posted.	Review Restriction

2. UMLS


Submit Review
Is developer hired?
No
Deny Permission
Yes
Post Review
Display the review in chronological order

3.


Review Management System
Submit Reviews
View Average rating for developer profiles
View individual reviews on profile page
Actor
Pre condition
- The hiring process needs to be completed
- The reviews cannot be edited or deleted after posted
- The reviewer cannot review themeselves

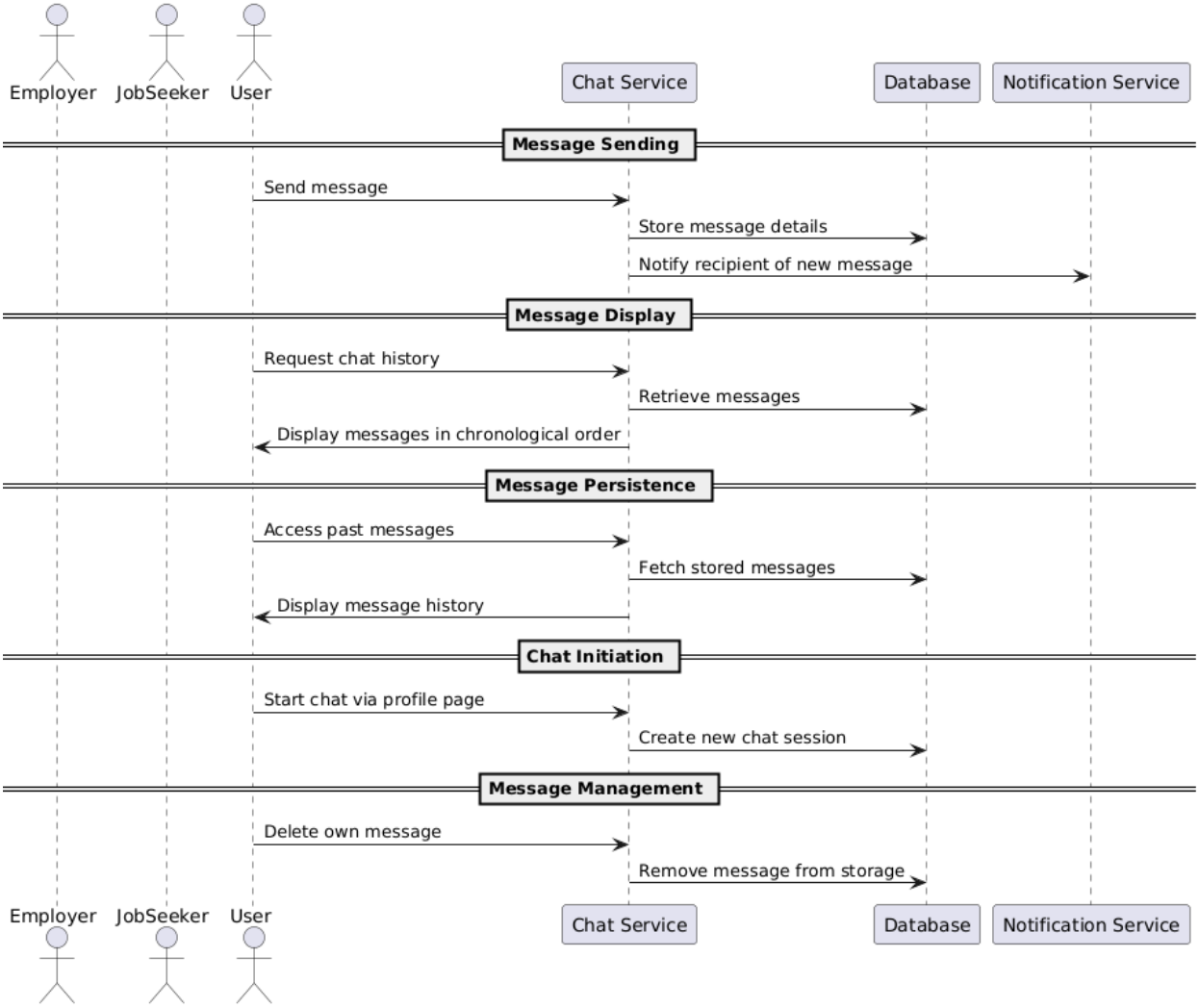

Employer
JobSeeker
Review Management Service
Database
JobService
Review Management
Submit review for hired developer
Store review details
Associate review with developer profile
Review Display
View own reviews
Retrieve reviews
Display reviews in chronological order
Review Restrictions
Attempt to review self
Reject review (Self-review not allowed)
Attempt to edit/delete review
Reject modification (Edits not allowed after submission)
Employer
JobSeeker
Review Management Service
Database
JobService

Chat System

1. SRS

Req. Code	Req. Description	Use Case
CHAT-F-1.0	The system shall allow users to send messages to other users.	Message Sending
CHAT-F-1.1	Users shall be able to send text-based messages.	Message Sending
CHAT-F-1.2	The system shall display the sender's name or alias with each message.	Message Display
CHAT-F-1.3	The system shall display messages in chronological order (earliest first).	Message Display
CHAT-F-1.4	The system shall provide visual notifications when new messages are received.	Message Notification
CHAT-F-1.5	The system shall persist messages for future access.	Message Persistence
CHAT-F-1.6	Users shall be able to search through their message history.	Message Retrieval
CHAT-F-1.7	Users shall be able to initiate a chat with another user through their profile page.	Chat Initiation
CHAT-F-1.8	Users shall be able to delete their own messages after sending.	Message Management

1. UMLS


Employer
JobSeeker
User
Chat Service
Database
Notification Service
Message Sending
Send message
Store message details
Notify recipient of new message
Message Display
Request chat history
Retrieve messages
Display messages in chronological order
Message Persistence
Access past messages
Fetch stored messages
Display message history
Chat Initiation
Start chat via profile page
Create new chat session
Message Management
Delete own message
Remove message from storage
Employer
JobSeeker
User
Chat Service
Database
Notification Service

Schema Design Diagram

Testing

Testing.xlsx