



COMSATS University Islamabad (CUI)

SkillSync pro

Version 1.0

By

Abdullah Shabir CIIT/SP21-BSE-004/ISB

Hassan Mohiuddin CIIT/SP21-BSE-032/ISB

Supervisor

Ms. Humaira Waqas

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Application Evaluation History

Comments (by committee)	Action Taken
Modules are not set according to the flow	Modules are now set according to the flow
Add more major modules and justify it as 2 student fyp	Profile management and Resume management module are added and now instead of working on a rule-based-chatbot we will be working on a RAG chatbot
It is the same project in this session	This project differentiate itself from others in terms of modules such as a RAG chatbot , Applicant Tracking System , Resume Management . None of the other projects provides these features that we are providing.

1.1. Modules

Module 1: User Profiling (Admin, Recruiter, Job Seeker, Employer)

Our System will have four types of users which are admin, Job Seekers, Recruiters and Employers. The User Profiling module will support personalization in maintaining the user profile for each user type. For this module, major functionalities are listed below.

- FE-1:** Sign-up (Select User Type (Recruiter, Job Seeker, and Employer)).
- FE-2:** Sign-in.
- FE-3:** Manage Profile (Edit, View, Deactivate Account, Change Password).
- FE-4:** Recover Account.
- FE-5:** Social Sign In (i.e., Gmail Account).

Module 2: Skills Analysis

In this module Employer can write questions for skill assessment or select questions from available question bank. Similarly, jobseeker can demonstrate his skills by completing these assessments.

- FE-1:** Employers can create, edit, delete, and view skill assessments.
- FE-2:** Employers can generate questions based on the selected category.
- FE-3:** Employers can set window, number of attempts for each assessment.
- FE-4:** Jobseekers can take skill assessment.
- FE-5:** Jobseekers can view previous assessments.
- FE-6:** Recruiters can set the Test Bank.

Module 3: Resume management

In this module job seeker can upload resume and recruiter can view resumes of candidates and system can parse resumes to extract the meaningful information.

- FE-1:** Job seeker can upload resumes.
- FE-2:** Job seeker can delete resume.
- FE-3:** Recruiter can view resume.
- FE-4:** Recruiter can download resume.
- FE-5:** Recruiter can delete resumes.
- FE-6:** The system should automatically parse and extract relevant information from uploaded resumes using NLP, word parsing, chunking and regex parser.
- FE-7:** Extract information from resume (name, email, mobile numbers, skills, total experience, college name, degree, designation, company names)

FE-8: Recruiters can share resumes with other team members or colleagues within the system.

Module 4: Interview Management

This module will conduct and analyze the interviews of candidates and provide them ratings by converting their feedback to text and analyzing it then suggesting ranked candidates to the interviewer in a sorted way.

- ✓ **FE-1:** Schedule interview and send invitation of interview to candidate.
- ✓ **FE-2:** Recruiter can enter interview questions and can give more weightage to important questions.
- ✓ **FE-3:** Record candidate's interview.
- ✓ **FE-4:** Set interview questions.
- ✓ **FE-5:** Analyze candidate's interview video, extract answers and compute score through model.
- ✓ **FE-6:** Use regression models to predict interview ratings and the likelihood of hiring using automatically extracted features. [1]
- ✓ **FE-7:** Predict high-level personality traits such as engagement, friendliness, and excitement.
- FE-8:** Give rating to candidates according to skill assessment and information extracted from interview.
- FE-9:** Suggest ranked candidates to the recruiter.

Module 5: Job Listing and Description

In this module Employer can create job listings and job description. Similarly, jobseekers can apply on the job listings.

- ✓ **FE-1:** Allow recruiters to create job listings and job description.
- ✓ **FE-2:** Candidates can apply for jobs through the job listings.
- FE-3:** Candidates can search for jobs according to their preference.
- FE-4:** Candidates will receive notification if a new job is posted.
- ✓ **FE-5:** Candidates can save jobs and check statuses.

Module 6: Recommendation Engine

This module recommends candidates to the Employer. Employer can apply filters and search for specific candidates. Following are the key features of this module.

FE-1: Suggest Recruiter the best candidates according to the specified skill set and confidence.

FE-2: Rank candidates based on skill set and confidence level.


FE-3: Suggest candidate personalized job recommendations based on skills and user preferences.

FE-4: Continuous refinement of algorithm based on user feedback for improved suggestions.


Module 7: Applicant Tracking System (ATS)


In this module Employer can track and monitor the progress of the candidates

FE-1: Track the applicant's progress throughout the hiring process.[2]

 **FE-2:** Recruiters can monitor candidate status, communications, and interactions through a centralized dashboard.


FE-3: Recruiters and candidates can get real-time updates and notifications through automated communication features.

 **FE-4:** Allow recruiter to track success rates of candidates.

 **FE-5:** Provide summary to the recruiters regarding candidates hiring status.

Module 8: Candidate Relationship Management (CRM)

In this module Recruiters can connect with the candidates and send them messages and automated emails once the candidate clears any specific stage.

 **FE-1:** Allow recruiters to connect with candidates throughout the hiring process.

FE-2: Send automated email to candidates, providing relevant information and updates.

FE-3: Recruiters can manage candidate interactions, feedback, and engagement through a user- friendly interface.

Module 9: Skill Development Resources

In this module Users will be provided resources and roadmaps to upgrade their skills.

FE-1: Allow users to access skill development resources, tutorials, and training materials.

FE-2: Recommend courses based on user goals and aspirations.

FE-3: Integration with external learning platforms for continuous skill development opportunities.

FE-4: Solve Coding challenges to improve skills.

Module 10: Chatbot

In this module users can interact with a RAG chatbot that will use the LLM model to generate an accurate answer to user queries based on an updated knowledge base. Recruiters can utilize the chatbot to get information about candidates instead of manually screening resumes.

FE-1: Answer all the queries of Users related to skillSync pro.

FE-2: Chatbot will provide the new user understanding of the functionalities of skillSync pro.

FE-3: Chatbot will assist user to navigate the system.

FE-4: Job seekers can interact with the chatbot to inquire about available job openings matching their skills and preferences.

FE-5: Recruiters can interact with the chatbot to know about the skills of the candidates.

FE-6: Recruiters can utilize the chatbot to get educational information of the candidates.

FE-7: Recruiter can use chatbot to schedule interview with candidates.

FE-8: The chatbot can provide insights into metrics such as number and status of applicants.

FE-9: Recruiters can send email through chatbot.

Module 11: Feedback and Ratings

In this module recruiters and job seekers can provide the feedback and ratings to each other after the interviewing process:



FE-1: Provide rating to the user based on the performance in interview and challenges.

FE-2: Allow employers to give remarks on candidates.

FE-3: Allow employees to give feedback to the employer.

1.2. User classes and characteristics

Table 1 Textual Description of User Classes.

User Class	Description
Admin	Admin in our system can verify or delete any Employer. It also manages the skill assessments and skill development resources.
Job Seeker	Job seekers are the main target of the proposed system. For job seekers, the system can provide a portal for them to apply for jobs in different Employers, Create and update profiles
Employer	For Employers, our system can automate the process of scheduling interviews, applicants tracking, communication and candidate recommendations thus reducing the manual effort required. It can also provide an assessment platform for employers to test job-related skills, improving the quality of hires and reducing bias
Recruiter	Recruiter is a person that is working for the Employer and he/she will manage the recruitment process of the Employer i.e. conducting interviews, Analyzing skills etc.