

SMART RESUME ANALYZER

UML501 Machine Learning Project Report

End-Semester Evaluation

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Abstract

This project “SRA: Resume Analyzer” is about to analyze the resume of any person, based on resume our smart system will give the smart recommendation to the user. It is very easy to use and smart application, in this application user just need to upload the resume. It will automatically analyze the resume. After that it will give you the recommendations.

Technology is playing a very vital role in changing our life in many ways. There are many sectors which benefited after implementing technology in it. Now it's time for evolution in very field. With the use of Artificial Intelligence every field is growing widely. With this project our aim is to use ML in job sectors. This system can be use by any fresher, graduate or experienced people. Our future aim to create same module for companies oriented also, so with this application companies can directly shortlist the people using ML. We are using the core concepts of Natural Language Processing for analyzing the resume.

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SRA: Smart Resume Analyzer

1. INTRODUCTION

1.1 Purpose: -

The main purpose of building this project is to create a smart technology for corporate hiring world. Nowadays there are thousands of people are unemployed or they are finding the jobs. Our Aim is to provide a smart system that can give the perfect recommendation based on the resume of user, It will give the recommendation of Job working industry, tools & Technology, courses, and resume writing techniques. So with this help user can create a better resume so it will increase the chances of getting a job in good company.

1.2 Tools & Technologies: -

- Python Programming
- NLTK & Pyparser for NLP
- Streamlit for Backend
- PDFMiner for extracting PDF
- Base64 for PDF displaying
- Pillow
- Numpy
- Python 3.6.9
- Pycharm IDE
- BS4 and requests for Web Scraping

2. PROBLEM STATEMENT

The current job market presents a challenge for job seekers to effectively present their skills and experiences in a way that aligns with the expectations of hiring managers. Traditional methods of resume analysis often lack efficiency and fail to provide personalized recommendations for career growth. To address this issue, there is a need for a sophisticated Smart Resume Analyzer (SRA) that leverages Artificial Intelligence and Natural Language Processing (NLP) techniques to automatically analyze resumes, extract relevant information, and offer tailored recommendations for career paths, skills enhancement, and course certifications.

The project aims to tackle the following key problems:

- **Inefficient Resume Analysis:** Conventional methods of manually reviewing resumes are time-consuming and may not provide comprehensive insights into an individual's skills and potential.
- **Lack of Personalization:** Job seekers often struggle to receive personalized career advice and recommendations based on their unique skills and experiences.
- **Limited Use of Technology in Hiring:** Many companies still rely on traditional methods for shortlisting candidates, and there is a gap in utilizing advanced technologies like Machine Learning and NLP for efficient hiring processes.
- **Complexity in Skill Matching:** Identifying the right skills and career paths can be challenging for individuals, especially in the rapidly evolving technology landscape.
- **Absence of Data Analytics for Insights:** There is a lack of systems that provide data analytics for administrators to gain insights into user patterns, preferences, and overall system performance.

The Smart Resume Analyzer (SRA) project aims to address these challenges by implementing a user-friendly system that automates the resume analysis process,

provides personalized recommendations, and offers data analytics features for administrators. The utilization of technologies such as Python, NLTK, Streamlit, and PDFMiner, among others, ensures the development of a robust and efficient solution for both job seekers and hiring entities.

3. DATABASE DICTIONARY

Database Name: - SRA

Table Name: - user_data

Column Name	Data Type	Description
ID	Auto Increment	Unique User ID
User Name	Varchar (50)	Full Name of user
Email ID	Varchar (50)	User Email ID
Resume_score	Varchar (10)	User's auto generated score
Time_stamp	Varchar (50)	Time stamp
Page_no	Varchar (5)	Number of pages
User_Level	Varchar (10)	User Experience
Actual_skills	Varchar (300)	User's actual skills
Recommended_skills	Varchar (300)	User's Recommended skills
Recommended_courses	Varchar (600)	Recommended courses

4. METHODOLOGY

In this chapter we are going to learn about working of Smart Resume Analyzer.

4.1 Workflow of System: -

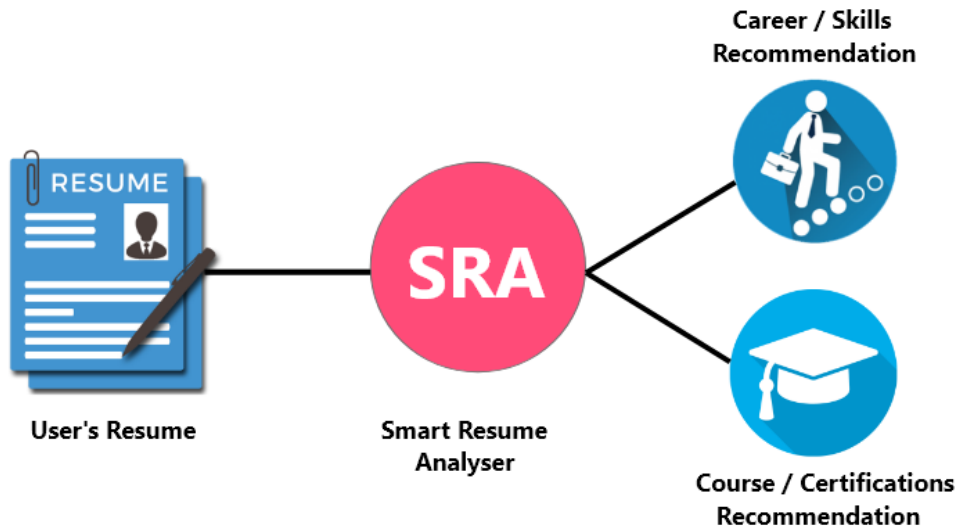


Fig 9. Workflow of System

We are going to see how our SRA system is analyzing the resume, and giving the career, skills, and courses/certifications recommendations.

4.2 Working of Smart Resume Analyzer

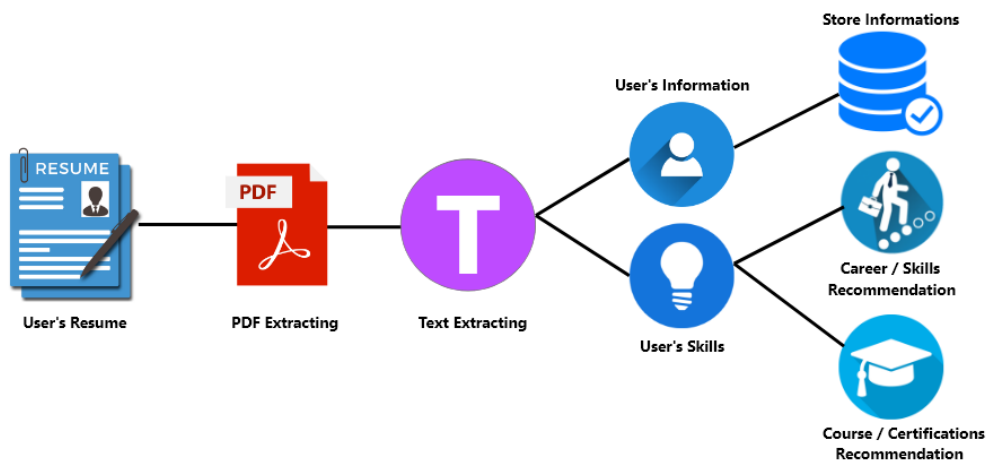


Fig 10. Working of Smart Resume Analyzer

We are going to see how actually our system is working behind, we have divided our work in separate tasks, let's understand each steps of it.

4.2.1 PDF Extracting

PDF Extracting is module in which it will automatically get the resume from the user. The condition is that user's resume should be in PDF format. This module will automatically extract the user's data from the resume.

4.2.2 Text Extracting

Text Extracting is the module in which it will fetch the text information from the resume. This text data will be used as language processing to further tasks like recommendations and fetching the user's personal information.

4.2.3 User's Data

After the text extraction, there is next module is fetching the user information, just like for X person find the full name, contact, email, mobile, and skills from the text extraction data.

4.2.4 Career/Skills Recommendations

Now we have fetched the information of user. Now based on user's current skills we will give the career path & skills recommendations, just like if user have skills of Machine Learning then it will give you the career, tools and technology recommendations.

4.2.5 Course/Certifications Recommendations

Now we have fetched the information of user. Now based on user's current skills we will give the courses & certificate recommendations, just like if user have skills of Machine Learning then it will give you the free and paid type of courses and certificates recommendations.

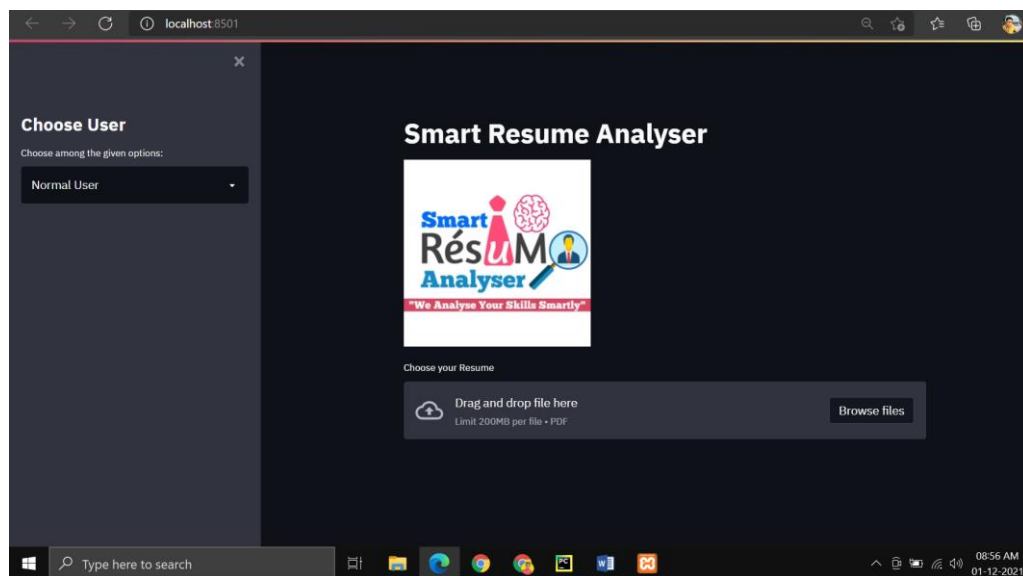
5. SCREENSHOT & USER GUIDE

In this chapter we will see the screenshot & User guide of the System.

5.1 Screenshot with Guide: -

5.1.1 Home page of System: -

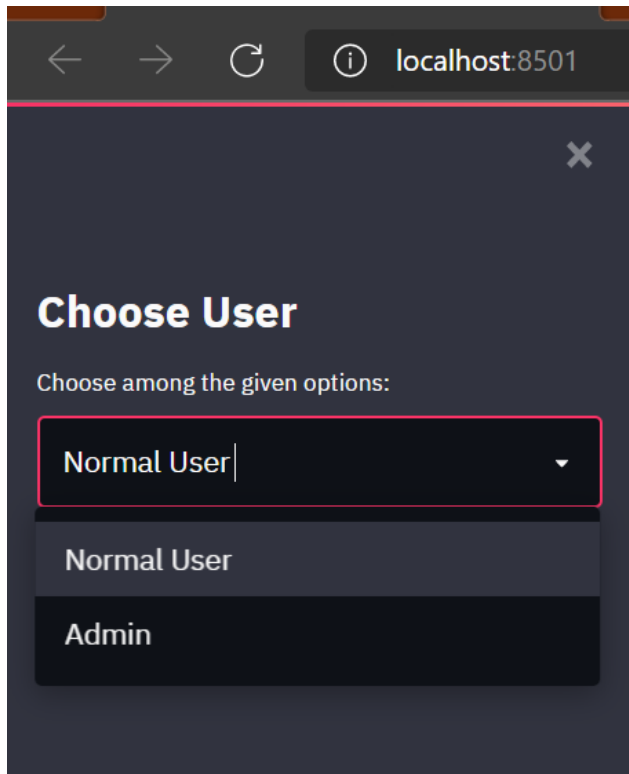
This will be main page of our web application, user just need to visit the URL. It is just one-page application, user doesn't need to do any Registration process. Everyone can use it directly.



Screenshot: - 1 Homepage

5.1.2 User Role Selection: -

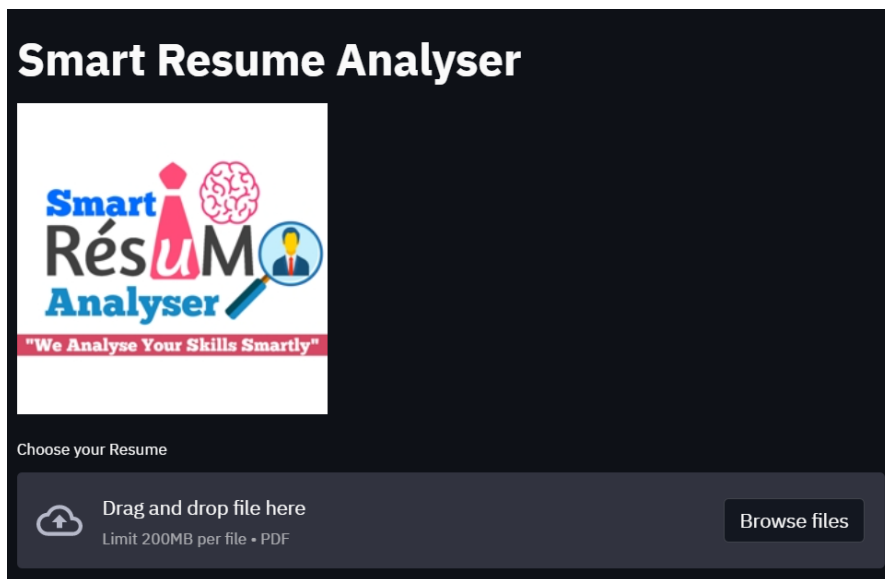
User can select the role from the left panel. There is 2 roles given. One is normal user another one is Admin role. In admin role, credentials are required.



Screenshot: - 2 User role selection

5.1.3 Resume Uploader: -

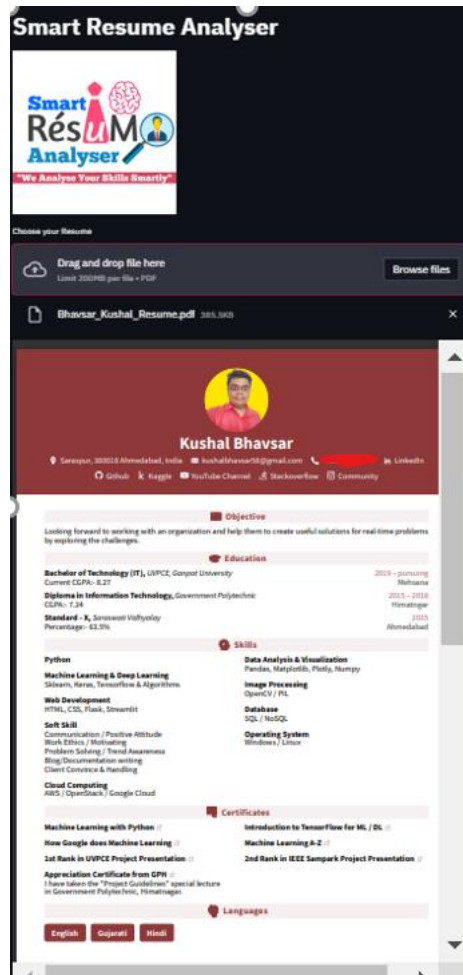
In normal user, it's have the facility to upload the resume. User can upload the PDF by click on browse button or by just drag & drop. Currently PDF format is only supported.



Screenshot: - 3 Resume Uploader

5.1.4 Resume Display: -

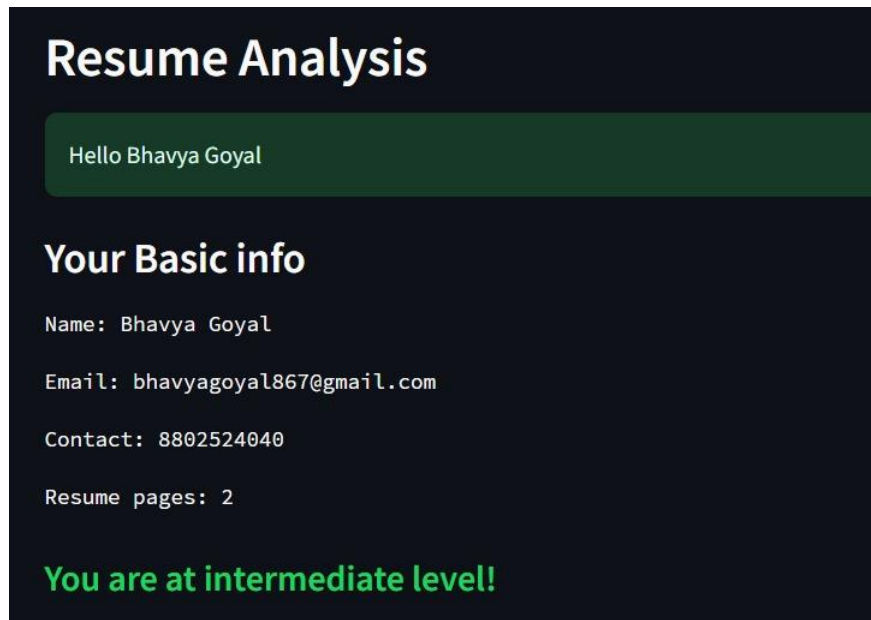
After the uploading the resume, it will take time to upload the resume, after successfully completion it will show the uploaded resume into our application.



Screenshot: - 4 Resume Display

5.1.5 User Information: -

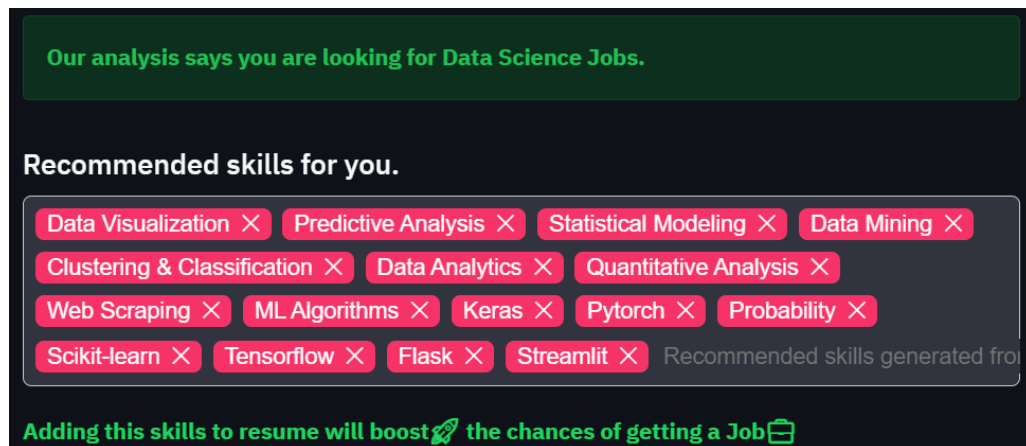
Our system will fetch the user's information from the resume, it will display this information into our application. It will predict the user at intermediate level or fresher or experienced.



Screenshot: - 5 User Information

5.1.6 Skills & Career Recommendations: -

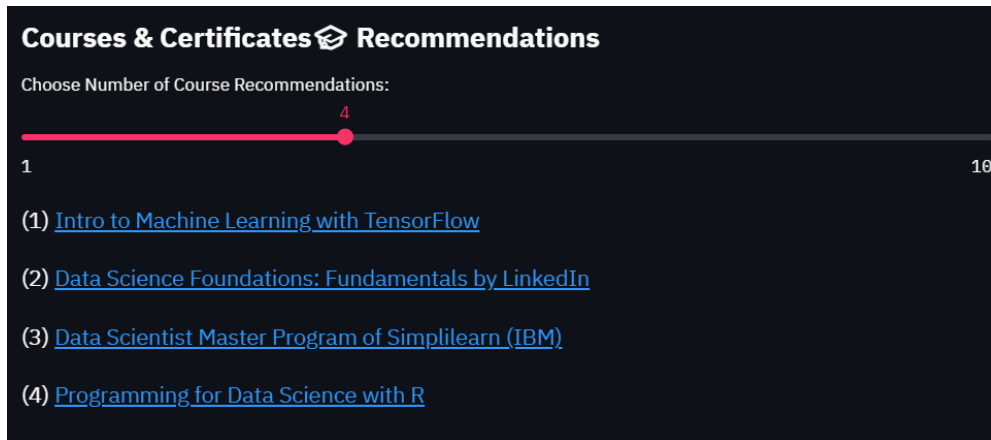
Our system will fetch the user's skills from the resume, and it will give the career recommendations based on the skills that you have.



Screenshot: - 6 Skills & Career Recommendations

5.1.7 Courses Recommendations: -

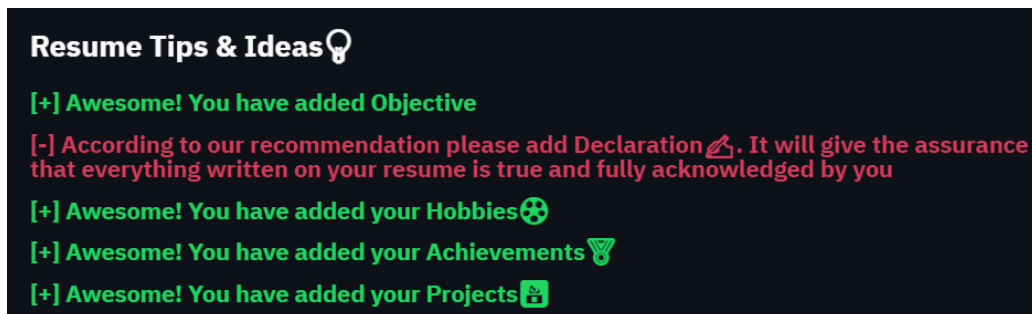
Our System will show the courses recommendations based on the user's skills. All the courses & certifications are combinations of free and paid. User can see 1-10 courses from the recommendations. User can scale the courses and they can navigate to course by just clicking on them.



Screenshot: - 7 Courses Recommendations

5.1.8 Resume writing Tips & Tricks: -

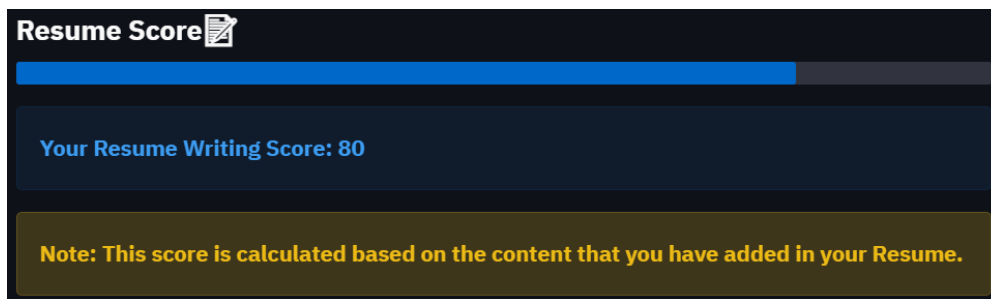
Our system will give you the topics recommendations which you can add into the resume, like declarations, hobbies, achievements or objective, it will suggest to you add if you haven't added then



Screenshot: - 8 Resume writing Tips & Tricks

5.1.9 Resume Score: -

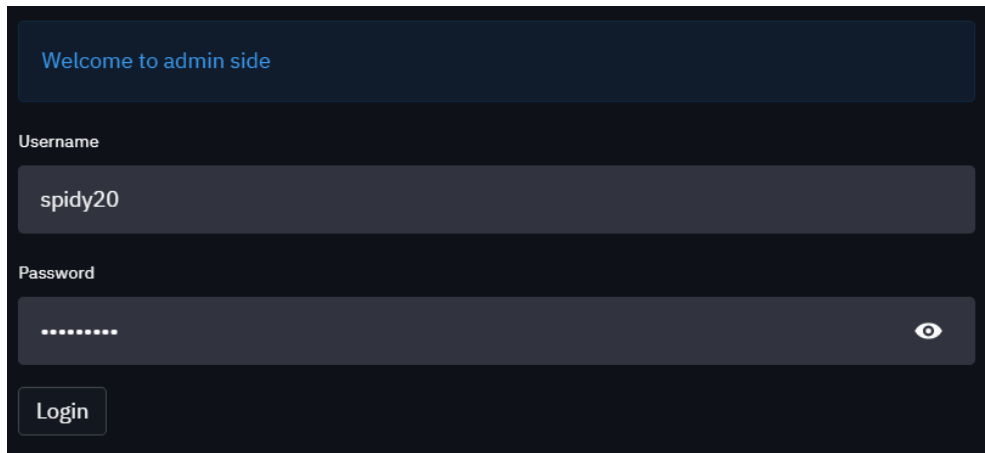
Our system will generate the score of the user from the uploaded resume.



Screenshot: - 9 Resume Score

5.1.10 Admin side: -

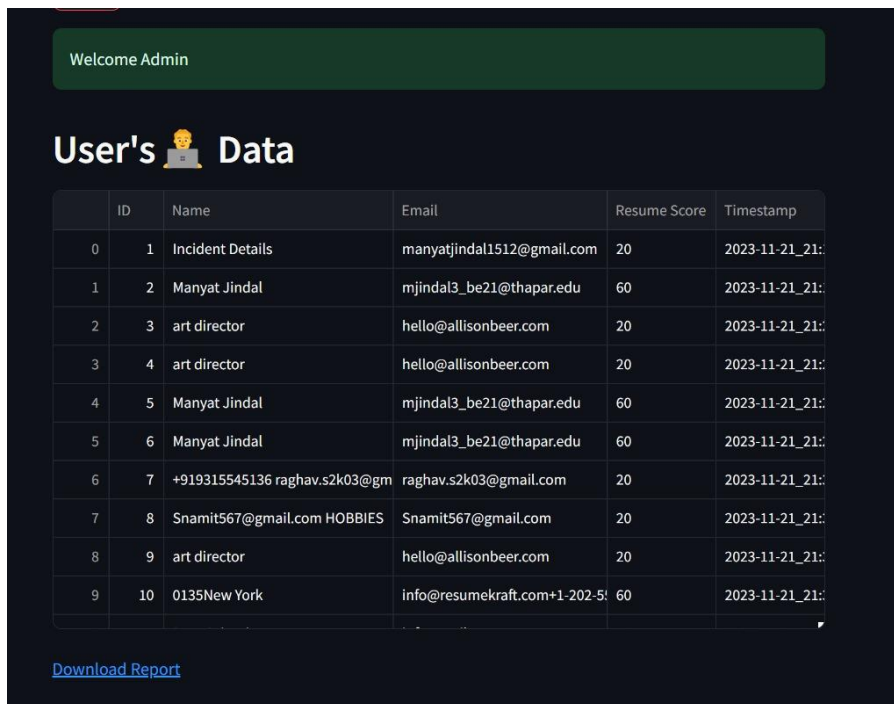
In selection panel, if you will select admin side, then it will show you the Admin Login panel. With default credentials admin login.



Screenshot: - 12 Admin's side

5.1.11 Admin Side User report: -

Admin can see the user's data which is collected from the user's resume.



	ID	Name	Email	Resume Score	Timestamp
0	1	Incident Details	manyatjindal1512@gmail.com	20	2023-11-21_21:
1	2	Manyat Jindal	mjindal3_be21@thapar.edu	60	2023-11-21_21:
2	3	art director	hello@allisonbeer.com	20	2023-11-21_21:
3	4	art director	hello@allisonbeer.com	20	2023-11-21_21:
4	5	Manyat Jindal	mjindal3_be21@thapar.edu	60	2023-11-21_21:
5	6	Manyat Jindal	mjindal3_be21@thapar.edu	60	2023-11-21_21:
6	7	+919315545136 raghav.s2k03@gm	raghav.s2k03@gmail.com	20	2023-11-21_21:
7	8	Snamit567@gmail.com HOBBIES	Snamit567@gmail.com	20	2023-11-21_21:
8	9	art director	hello@allisonbeer.com	20	2023-11-21_21:
9	10	0135New York	info@resumekraft.com+1-202-5!	60	2023-11-21_21:

Screenshot: - 13 Admin Side User report

6. CONCLUSION

The purpose of this project is to learn the Natural Language Processing. We have research too many skills, tools and technologies for different types of IT jobs. Then we have done NLP processing that can recommend the Skills, Courses and career field. We learn to create one-page application development using Streamlit python. We have gathered the knowledge of Plotly for the visualization and Data analytics which is created in Admin Side. We have covered this project according to scheduled time. In this project we learn time management, Non-technical skills like documentations, diagrams drawing, Technical skills like NLP, Database handling, Visualization, Web scraping, Web development and many more things from this project.

7. GITHUB LINK

1. https://github.com/Namitsharma07/Smart_Resume_Analyser
2. https://github.com/raghavs12/Smart_Resume_Analyser