

SKILL/JOB RECOMMENDER

Team ID:PNT2022TMID48197

Submitted by:

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PROBLEM STATEMENT:

- **GOAL:**

A job search has to be very intuitive for the students so that they can find a job suiting their skills, position, industry, role and location by company name.

- The job Skills recommended application is an example of a search where documents are bulky because of the content in candidate resumes.

- The search provided over the candidate database is required to have a huge set of fields to search.

● **PROBLEM:**

The current problem is recruitment done manually, most available jobs in Nigeria can only be applied at the agency and can be done for which job seekers have to go to the agency to check the available jobs at the agency.

● **SOLUTION:**

“The purpose of job oriented application to help both the job seekers and recruiters find the right organization or the employers.”

Empathy Map Canvas:

An empathy map is a simple, easy-to-digest visual that captures knowledge about a user's behaviors and attitudes.

It is a useful tool to help teams better understand their users.

Creating an effective solution requires understanding the true problem and the person who is experiencing it. The exercise of creating the map helps participants consider things from the user's perspective along with his or her goals and challenges.

EMPATHY MAP:



Literature Survey:

College Name:K.L.N College of Information Technology,

Department:Computer Science and Engineering,

Team Leader :Balagi.P

Team Member :DineshKumar.P

Team Member :Selvam.N

Team Member :Rathinavel.P

| S.No | TITLE | PROPOSED WORK | TOOLS USED/ ALGORITHM | TECHNOLOGY | ADVANTAGES/ DISADVANTAGES |
|------|---|---|---|--|--|
| 1 | Job Recommendation based on Job Seeker Skills: An Empirical Study | In this paper, we proposed a framework for job recommendation task. It allows the use of a variety of text processing and recommendation methods according to the preferences of the job recommender system designer. | <ul style="list-style-type: none"> • Collaborative Filtering • Content-based Filtering • Knowledge-Based Approach. • Hybrid Approach. | <ul style="list-style-type: none"> • Machine Learning • Word2vec model | Word2vec is a predictive model which is used for learning vector representations of words. |

| | | | | | |
|---|-------------------------------------|--|--|--|------------------------------------|
| 2 | A survey of job recommender systems | The Internet-based recruiting platforms become a primary recruitment channel in most companies. In order to improve the e-recruiting functionality, many recommender system approaches have been proposed. | <ul style="list-style-type: none"> • Collaborative filtering approach • Model-based CF methods • Content-based filtering approach • Knowledge-based approach | <ul style="list-style-type: none"> • Data mining • Machine learning techniques | They work well for complex objects |
|---|-------------------------------------|--|--|--|------------------------------------|

| S.NO | TITLE | PROPOSED WORK | TOOLS USED/ ALGORITHM | TECHNOLOGY | ADVANTAGES/ DISADVANTAGES |
|------|---|---|---|--|---|
| 3 | Job Recommendation: Leveraging Progression of Job Applications. | In this paper, we introduce a methodology where we leverage the progression of job selection by candidates using machine learning. | <ul style="list-style-type: none"> Machine Learning algorithms Tree-based approaches. Bi-LSTM model. | <ul style="list-style-type: none"> Machine Learning Deep neural networks | Bi-LSTM model can leverage both past as well as future candidate-job interactions to learn some of the latent job preferences of candidates and predict if they will likely interact with given jobs. |
| 4 | Job Recommendation Systems for Enhancing E-recruitment Process. | Recommender system technology aims to help users in finding items that match their preferences and it successfully deals with problems related to information overload efficiently. | <ul style="list-style-type: none"> Collaborative Filtering Content-based Filtering Knowledge-Based Approach. Hybrid Approach. | <ul style="list-style-type: none"> Machine Learning | By combining all these approaches the recommendation systems can perform better and overcome challenges. |

| S.No | TITLE | PROPOSED WORK | TOOLS USED/ ALGORITHM | TECHNOLOGY | ADVANTAGES/ DISADVANTAGES |
|------|--|---|---|---|--|
| 5 | Job Recommendation From Semantic Similarity of LinkedIn Users' Skills | Job recommendation systems have been proposed in order to automate and simplify task, also increasing its effectiveness. Our work aims to find out relationships between jobs and people skills making use of data from LinkedIn users' public profiles | <ul style="list-style-type: none"> Latent Semantic Analysis (LSA) Hierarchical clustering | <ul style="list-style-type: none"> Natural language processing(NLP) | The accuracy grows as the number of recommendations to be returned is raised |
| 6 | Job Recommendation based on Job Profile Clustering and Job Seeker Behavior | job offers are collected from job search websites then they are prepared to extract meaningful attributes such as job titles and technical skills. | <ul style="list-style-type: none"> K-means clustering Content based filtering Collaborative filtering recommendation | <ul style="list-style-type: none"> Data mining Natural language processing(NLP) | Cluster analysis approach helps to identify groups of job offers according to the degree of similarity, or dissimilarity between their features. |

PROPOSED SOLUTION TEMPLATE:

| | |
|---------------|-----------------------|
| Date | 31 October 2022 |
| Team ID | PNT2022TMID48197 |
| Project Name | Skill/Job Recommender |
| Maximum Marks | 2 Marks |

Project team shall fill the following information in proposed solution template.




| S.No. | Parameter | Description |
|-------|--|--|
| 1. | Problem Statement (Problem to be solved) | Having lots of skills but wondering which job will best suit you? Don't need to worry! We have come up with a skill recommender solution through which the fresher or the skilled person can log in and find the jobs by using the search option or they can directly interact with the chatbot and get their dream job. |
| 2. | Idea / Solution description | The User will have to input their skills; accordingly, scores will be provided. Depending upon the scores and the skills, the appropriate job will be recommended. |
| 3. | Novelty / Uniqueness | Score based recommendation system. User friendly. Jobs will be more accurate due to scoring system. |
| 4. | Social Impact / Customer Satisfaction | Users will be able to showcase their skills in the company and grow more. Customers will find it easy to interact and use the web application |

| | | |
|----|--------------------------------|--|
| 5. | Business Model (Revenue Model) | <p>Ad revenue</p> <p>Upgrade to premium (Directly interact with the company)</p> |
|----|--------------------------------|--|

Solution Requirements (Functional & Non-functional) :



Functional Requirements:





Following are the functional requirements of the proposed solution.

| FR No. | Functional Requirement (Epic) | Sub Requirement (Story / Sub-Task) |
|--------|---|---|
| FR-1 | User Registration  | The job seeker Register her /him application form through form hardcopy (or) Register through Gmail (or) Register through LinkedIn. |
| FR-2 | User Confirmation  | Job seeker find application Confirmation via Email (or) via OTP. |
| FR-3 | User Status  | Job seeker find their current status through view dashboard (login with ID and Password). |

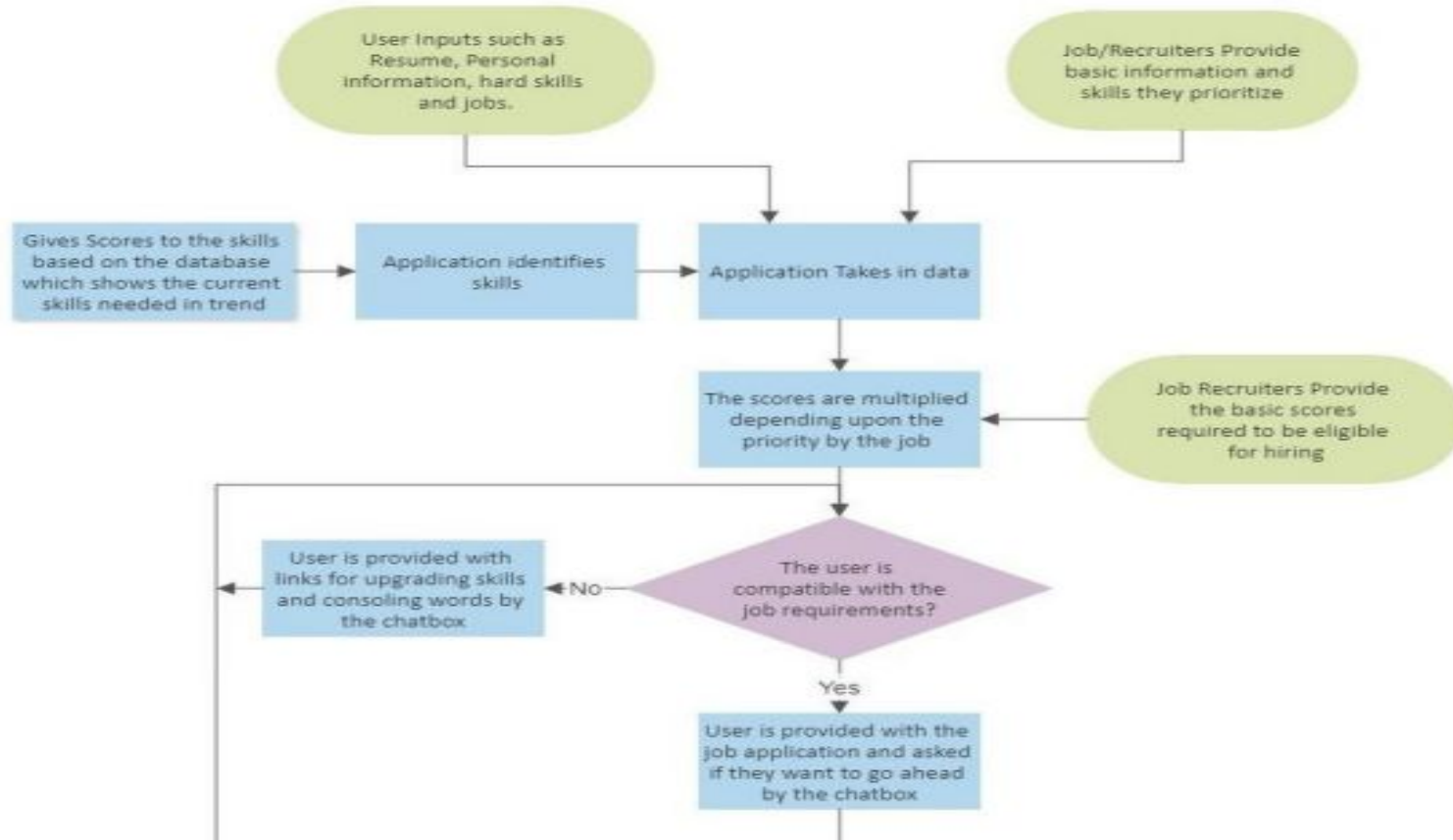
Non-functional Requirements:

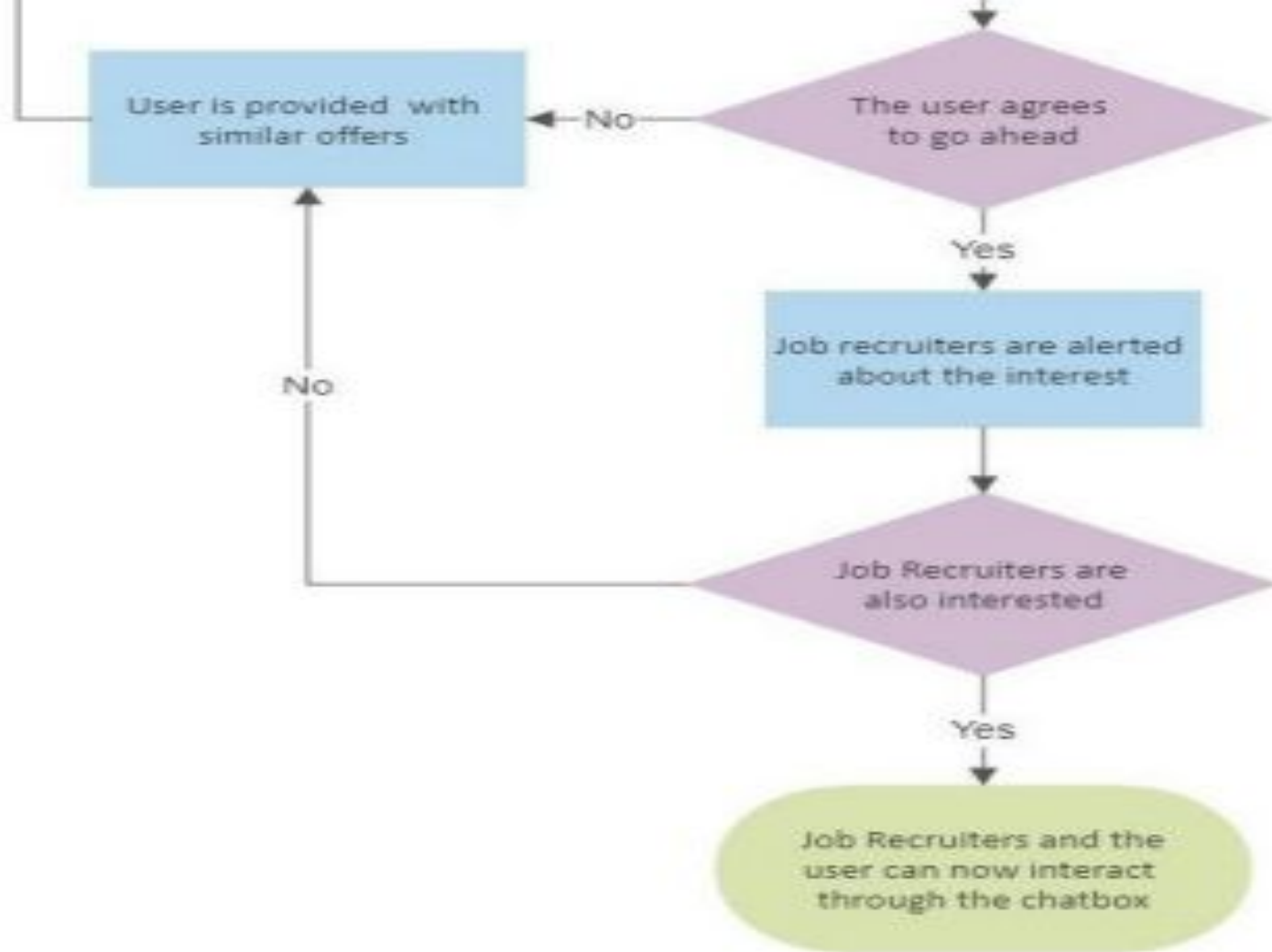
Following are the non-functional requirements of the proposed solution.

| FR No. | Non-Functional Requirement | Description |
|--------|---|---|
| NFR-1 | Usability  | The error rate of users submitting their payment details at the checkout page mustn't exceed 10 percent. |
| NFR-2 | Security  | If your security relies on specific standards and encryption methods, these standards don't directly describe the behavior of a system, but rather help engineers with implementation guides. |

| | | |
|-------|---|---|
| NFR-3 | Reliability  | The system must perform without failure in 95 percent of use cases during a month. |
| NFR-4 | Performance  | The landing page supporting 5,000 users per hour must provide 6 second or less response time in a Chrome desktop browser, including the rendering of text and images and over an LTE connection |
| NFR-5 | Availability  | The web dashboard must be available to US users 99.98 percent of the time every month during business hours EST. |
| NFR-6 | Scalability  | The system must be scalable enough to support 1,000,000 visits at the same time while maintaining optimal performance. |

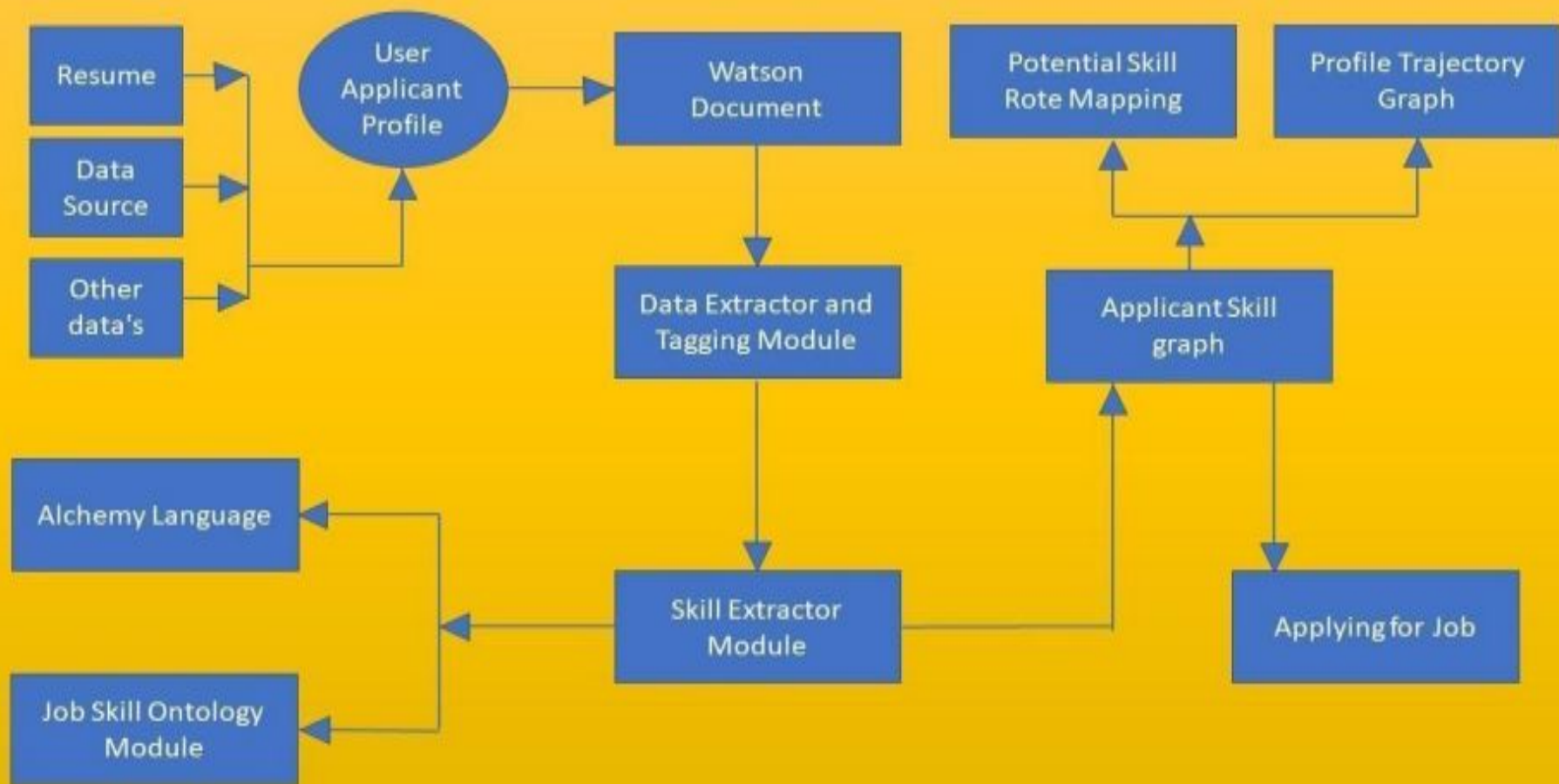
SOLUTION ARCHITECTURE:(JOB AND SKILL RECOMMENDER)





DATA FLOW DIAGRAM:

A Data Flow Diagram (DFD) is a traditional visual representation of the information flows within a system. A neat and clear DFD can depict the right amount of the system requirement graphically. It shows how data enters and leaves the system, what changes the information, and where data is stored.



| User Type | Functional Requirement (Epic) | User Story Number | User Story / Task | Acceptance criteria | Priority | Release |
|-------------------------|-------------------------------|-------------------|--|---|----------|----------|
| Customer (Mobile user) | Registration | USN-1 | As a user, I can register for the application by entering my email, password, and confirming my password. | I can access my account / dashboard | High | Sprint-1 |
| | | USN-2 | As a user, I will receive confirmation email once I have registered for the application | I can receive confirmation email & click confirm | High | Sprint-1 |
| | | USN-3 | As a user, I can register for the application through Facebook | I can register & access the dashboard with Facebook Login | Low | Sprint-2 |
| | | USN-4 | As a user, I can register for the application through Gmail | I can receive confirmation email & click confirm | Medium | Sprint-1 |
| | Login | USN-5 | As a user, I can log into the application by entering email & password | I can access my account / dashboard | High | Sprint-1 |
| | Dashboard | USN-6 | Create a model set that contains those models, then assign it to a role. | Assign that group to the appropriate roles on the Roles page. | High | Sprint-1 |
| Customer (Web user) | Identity-Aware | USN-7 | Open, public access, User-authenticated access, Employee-restricted access. | Company public website. App running on the company intranet. App with access to customer private information. | High | Sprint-1 |
| Customer Care Executive | Communication | USN-8 | A customer care executive is a professional responsible for communicating the how's and why's regarding service expectations within a company. | For how to tackle customer queries. | Medium | Sprint-1 |
| Administrator | Device management | USN-9 | You can Delete/Disable/Enable devices in Azure Active Directory but you cannot Add/Remove Users in the directory | Ease of use. | Medium | Sprint-1 |

CUSTOMER JOURNEY MAP:

Journey mapping helps you visualize how customers experience your skill and job and how?

Phases of journey

Actions

What does the customer do ?

Touch point

What part of the service do they interact with?

Customer Thoughts

What is the customer thinking?

Customer feeling

What is the customer feeling ?

Process of the ownership

Who is the lead on this ?

Opportunities

Registration

Choose a Company

Register full detail to the company account

Traditional media
website
social

Recommended to the office staff to company

Find the good job related to her skills

Which is the best job in her surrounding



Suggested training the additional job

She gave a two more appointment

Onboarding

Graduate skill acquired

Company skill needed

Training the job and skill recommend

Helps to the recommend team in jobseeker

Get the complete knowledge

Educational material easy to follow



Make a training shorter

Review the Over all work

First session

Show Recommended course for leader

Candidate profile explicit feedback

Updating your new profile our company

Sharing your experience developmet

Creating a really document is a simple

Adding a team members very brisk



Easy to learn in company

Fully covered in observe

TECHNOLOGY ARCHITECTURE:

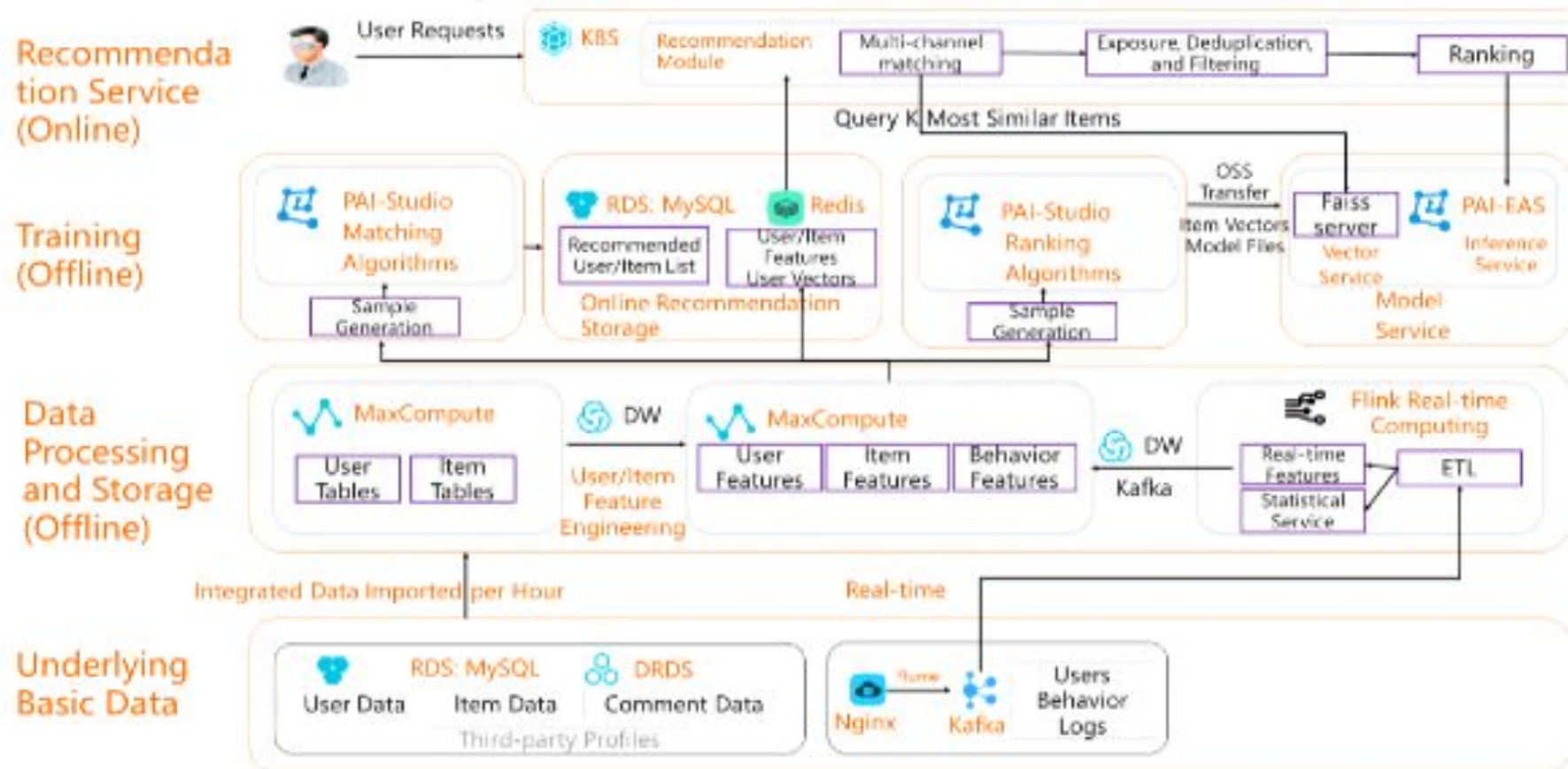


Table-1 : Components & Technologies:

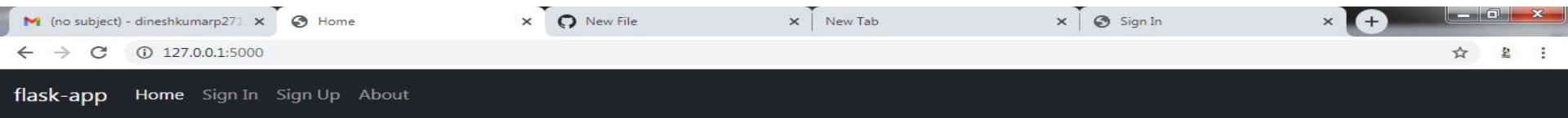
| S.No | Component | Description | Technology |
|------|------------------------|---|----------------------------|
| 1 | User Interface | Web UI, Mobile App, Chatbot. | HTML, CSS, Java. |
| 2 | Application Logic-1 | Using Flask to create a application format. | Python,HTML. |
| 3 | Application Logic-2 | Using Sendgrid application. | IBM Watson STT service |
| 4 | Application Logic-3 | Using Cloud , Docker CLI , Kubernity. | IBM Watson Assistant |
| 5 | Database | Data Type (Primitive & Non-Primitive) | MySQL. |
| 6 | Cloud Database | Database Service on Cloud | IBM DB2, IBM Cloudant etc. |
| 7 | File Storage | Files are stored in Local file system. | Local File system. |
| 8 | External API-1 | Used to Store a Data. | IBM Weather API. |
| 9 | External API-2 | Verification ID of applicant. | Aadhar API. |
| 10 | Machine Learning Model | Using to share a data and stored. | NLP. |
| 11 | Infrastructure (Cloud) | Application Deployment on Local System. | Cloud Foundry ,Kubernetes. |

Table-2: Application Characteristics:

| S.No | Characteristics | Description | Technology |
|------|--------------------------|--|---------------------|
| 1. | Open-Source Frameworks | To design a frame. | Lenskit. |
| 2 | Security Implementations | access controls implemented, use of firewalls. | Encryptions, OWASP. |
| 3 | Scalable Architecture | Potential to implement more advance features of the application. | Cloud. |
| 4 | Availability | use of distributed servers etc. | Twilio sendgrid. |
| 5 | Performance | Design consideration for the performance of the application number of requests per sec, use of Cache, use of CDN's . | PTP. |

ASSIGNMENTS

Assignment 2:(Flask FrameWork)



WELCOME TO YOUR WEBSITE

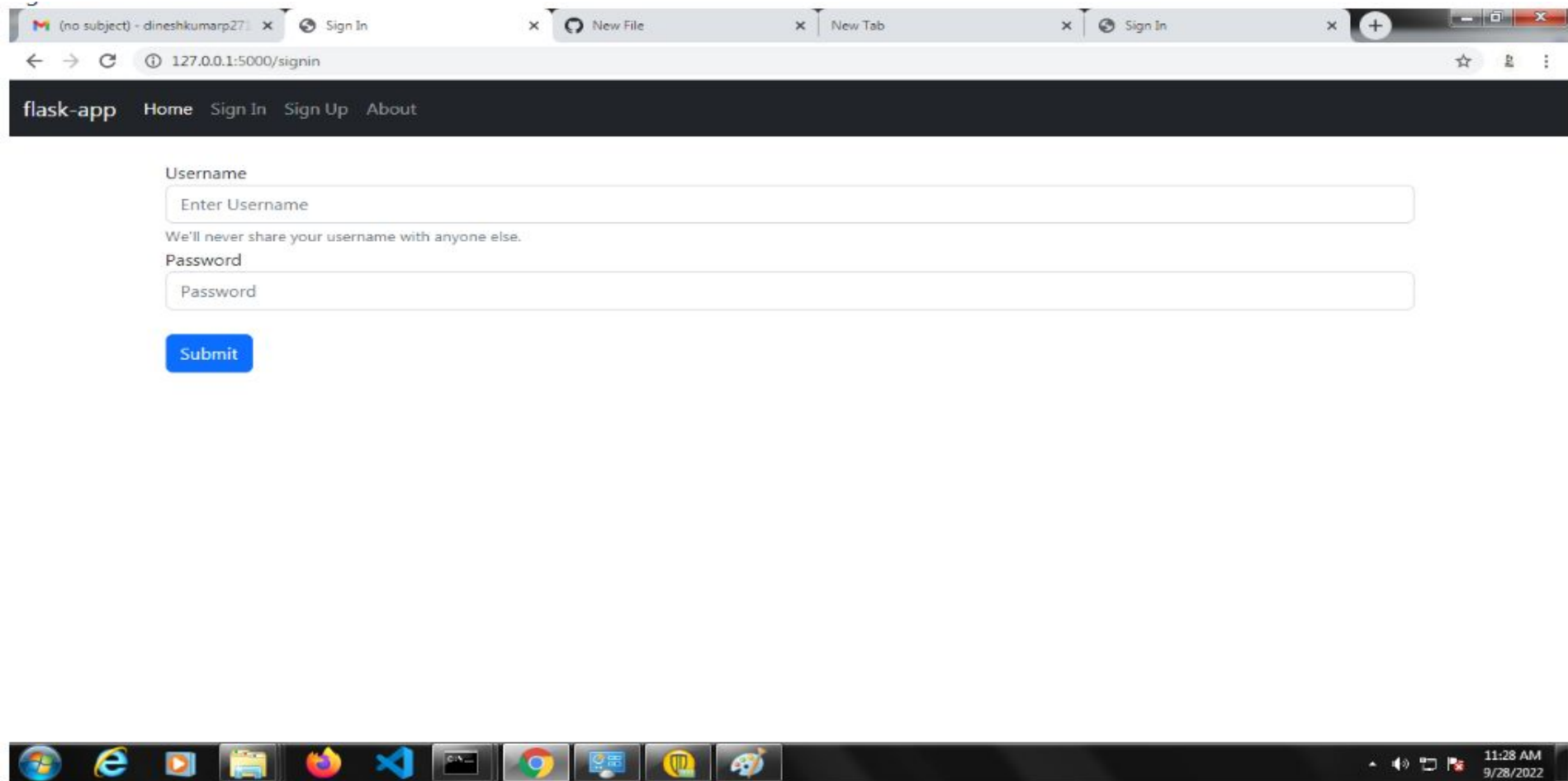
Feel free to browse through the site.

This is a **flask-app** assignment.

was written by

DINESHKUMAR P

SignIn Page:



The screenshot shows a web browser window with the following elements:

- Browser Tabs:** Four tabs are open: "(no subject) - dineshkumarp27...", "Sign In", "New File", and "New Tab".
- Address Bar:** The URL is "127.0.0.1:5000/signin".
- Navigation Bar:** A dark bar at the top contains the text "flask-app" followed by links: "Home", "Sign In", "Sign Up", and "About".
- Form Fields:**
 - Username:** A label "Username" is above a text input field containing the placeholder text "Enter Username".
 - Password:** A label "Password" is above a text input field containing the placeholder text "Password".
- Submit Button:** A blue button with the text "Submit" is located below the password field.
- Footer:** A message "We'll never share your username with anyone else." is positioned between the username and password fields.
- Taskbar:** The Windows taskbar at the bottom shows icons for various applications including the Start menu, Edge, File Explorer, Firefox, VS Code, and several instances of the application being developed.
- System Clock:** The bottom right corner of the taskbar shows the time "11:28 AM" and the date "9/28/2022".

SignUp Page

The screenshot shows a web browser with multiple tabs. The active tab is titled 'Sign Up' and the address bar shows the URL '127.0.0.1:5000/signup'. The page has a dark navigation bar with the text 'flask-app' and links for 'Home', 'Sign In', 'Sign Up', and 'About'. The main content area contains four form fields: 'Name' (placeholder: 'please enter your name'), 'Username' (placeholder: 'Your Username.'), 'Email' (placeholder: 'abc@mail.com'), and 'Password' (placeholder: 'Password'). Each field has a descriptive label above it and a hint below it. A blue 'Sign Up' button is located at the bottom of the form. The Windows taskbar is visible at the bottom of the screen.

(no subject) - dineshkumarp273 x Sign Up x New File x New Tab x Sign In x +

← → ↻ ⓘ 127.0.0.1:5000/signup ☆ ⓘ ⋮

flask-app Home Sign In Sign Up About

Name

please enter your name

Enter your name.

Username

Your Username.

We'll never share your username with anyone else.

Email

abc@mail.com

Enter your email. Your data is secure!

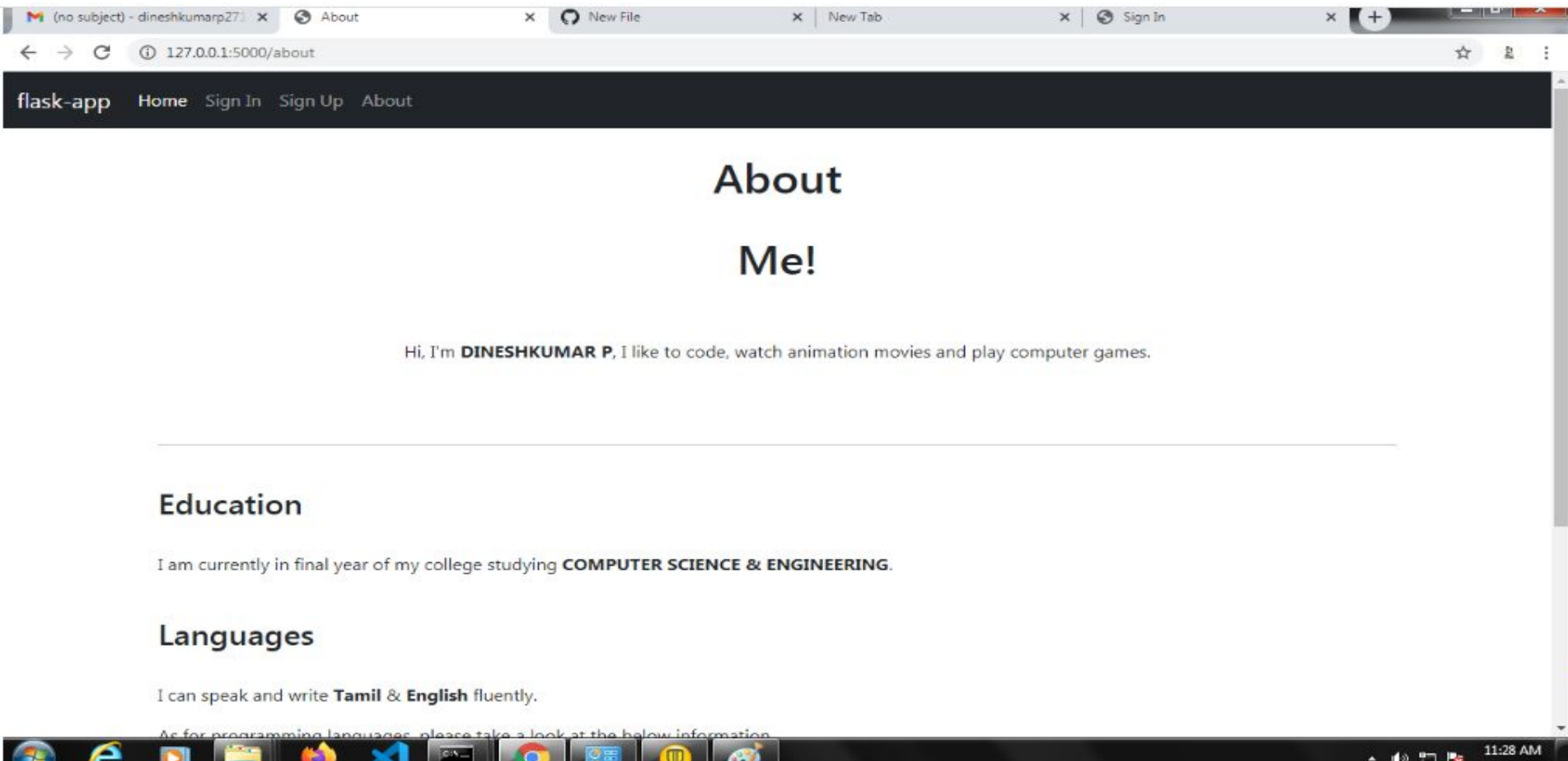
Password

Password

Sign Up

Windows taskbar: Windows logo, Edge, File Explorer, Firefox, VS Code, Task Manager, Chrome, Mail, Photos, Settings. System tray: 11:28 AM, 9/28/2022.

AboutMe Page




Assignment 3:

IBM Watson Service Page x IBM Watson Assistant x Welcome to Project Delight x IBM x Document x

File | /home/dineshkumar/Desktop/Assignment/index.html

HARBOURS



Watson Assistant

Which is biggest port in India?

None of the above

Which is the oldest port in India?

Syama Prasad Mookerjee Port Trust of Kolkata is the oldest port among the 13 major ports of India. It was Commissioned in 1870.

which is biggest port in india

Mumbai Port is India's largest port by size and shipping traffic. Located in west Mumbai on the western coast of India, the Mumbai Port is situated in a natural harbor

Type something...

Built with IBM Watson®

19:35

THANK YOU