Resume Analyzer for Job Portals

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BONAFIDE CERTIFICATE

Certified that this project report **"RESUME ANALYZER FOR JOB PORTALS"**

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INTERNAL EXAMINER   **EXTERNAL EXAMINER**

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ABSTRACT

The **Resume Analyzer for Job Portals** is an automated platform designed to streamline the process of collecting, analyzing, and shortlisting candidate resumes for recruitment purposes. This system facilitates efficient resume parsing, skill extraction, and candidate-job matching for both applicants and recruiters. By integrating resume uploads, natural language processing (NLP), and job criteria matching into a single, user-friendly interface, the system ensures a seamless experience for hiring managers. The platform allows users to easily upload resumes, view match scores, and generate structured candidate profiles, while also providing recruiters with tools for filtering applicants based on customized job requirements and ranking criteria.

Built using PHP, Python (with NLP libraries), and MySQL, the system is both scalable and reliable, catering to the evolving needs of the recruitment industry. Furthermore, the system's secure architecture ensures the privacy and safety of candidate data. This solution not only simplifies the resume screening process but also enhances operational efficiency for HR departments, improving candidate selection quality and reducing hiring timelines. The system offers potential for future enhancements, including integration with third-party job portals, advanced analytics for recruitment trends, and personalized job matching for candidates, positioning it as a comprehensive solution for modern applicant tracking and evaluation.

1.   INTRODUCTION

1.1 <u>OVERVIEW:</u>

The Resume Analyzer for Job Portals is an essential tool for managing the recruitment process, providing a seamless way for employers to collect, evaluate, and shortlist candidate resumes. This system automates the resume screening process, ensuring that the interaction between job applicants and recruiters is efficient and accurate. The system typically allows users to upload resumes based on job applications and automatically matches them to relevant job descriptions using Natural Language Processing (NLP). In addition, it provides important insights, such as skill match percentage, experience level, and qualification relevance, helping recruiters make informed hiring decisions.

A successful Resume Analyzer for Job Portals involves multiple components, including the user interface, backend database, and integration with NLP-based resume parsing tools. The user interface should be designed with user-friendliness in mind, allowing HR personnel to easily view candidate data and filter applicants with minimal effort. The backend database is essential for storing information about applicants, job descriptions, match scores, and screening outcomes. By connecting to advanced text analysis modules in Python, the platform can extract structured data from unstructured resume documents, ensuring recruiters receive accurate and actionable information.

Implementing such a system requires careful attention to security, especially because candidates often submit sensitive personal and professional information. Secure sockets layer (SSL) encryption, access control, and secure data storage are necessary to protect this data. Additionally, complying with regulations like the General Data Protection Regulation (GDPR) is crucial to protect candidate information and ensure that the system remains secure and trustworthy. This involves designing the system to store candidate data responsibly and only retain information that is necessary for recruitment operations.

The core of the system lies in the Python-powered resume parsing and scoring engine. Leveraging libraries such as spaCy, TextBlob, or NLTK, the engine performs tasks like tokenization, entity recognition (e.g., finding names, locations, skills), keyword extraction, and semantic analysis. A scoring algorithm compares this data with job descriptions to assign a compatibility score. More advanced models can include machine learning classifiers trained on historical hiring data to predict the likelihood of a candidate being shortlisted or selected. The system can also identify skill gaps by analyzing the differences between the candidate's profile and the ideal job requirements.

Security and privacy are critical when handling sensitive personal data. The system must implement secure sockets layer (SSL) encryption for all data transmissions, strong user authentication, and role-based access controls to limit sensitive data visibility. Secure storage practices, such as encrypted databases and hashed credentials, are necessary to comply with data protection regulations such as GDPR and CCPA. It is equally important to have a clear data retention policy and allow candidates to request deletion of their personal information.

To streamline and enhance the recruitment process, the resume analyzer can be integrated with Applicant Tracking Systems (ATS), LinkedIn, job boards, and HR management platforms. These integrations enable recruiters to seamlessly pull in job descriptions and candidate resumes from multiple sources and update

applicant statuses across platforms in real-time. Additionally, automated notifications can alert recruiters about highly matched candidates or upcoming interviews, reducing manual follow-up.

Enhancing candidate engagement is also possible by offering feedback reports to applicants. These reports may highlight missing qualifications, recommended skills, or courses to improve their chances of being shortlisted. This not only builds transparency but also improves the applicant experience.

Future enhancements may include:

AI-Powered Recommendations: Suggest job openings to candidates based on their resume content and browsing history.

Multilingual Resume Support: Automatically detect and process resumes in different languages using translation and NLP techniques.

Voice-Based Input: Allow job seekers to submit experience summaries via voice, which the system can transcribe and analyze.

Advanced Visualization: Graphical dashboards showing hiring trends, skill demand, candidate performance metrics, and more.

Chatbot Integration: An AI assistant to guide users through resume submission, profile creation, and common queries.

Testing and maintenance are ongoing requirements to ensure the system operates smoothly and remains accurate. Unit testing, load testing, and regular performance assessments are critical before deployment. Post-launch, continuous updates are needed for both the Python NLP models (to stay current with language use and job trends) and the PHP frontend (to improve user experience and fix bugs). Monitoring and logging tools can be added to track system health and usage statistics, helping developers proactively address issues.

1.2   OBJECTIVES:

The primary objective of developing an Resume Analyzer for Job Portals is to create a streamlined, efficient, and user-friendly platform for booking airline tickets. This system aims to simplify the entire booking process for both customers and airline operators, enhancing accessibility, reducing operational time, and increasing customer satisfaction. By automating the ticketing process, an Resume Analyzer for Job Portals reduces the dependency on manual processes, ensuring seamless service delivery and operational efficiency. This digital solution also enables airlines to manage their resumes and schedules effectively, maintain data accuracy, and improve revenue management.

1. **Enhance User Convenience**: A reservation system should offer an intuitive interface, making it easy for customers to search for interviews, select dates, compare prices, and book tickets without hassle. Ensuring a smooth booking experience encourge customer business.

2. **Real-Time Availability and Pricing**: Enable Providing up-to-date information on seat availability and ticket prices is essential to prevent overbooking and ensure accurate pricing. Real-time updates enhance the reliability and transparency of the system for both customers and airlines.

3. **Streamlined Operational Efficiency**: Automating tasks like booking, cancellations, and payment processing reduces the manual workload for airline staff and minimizes the risk of errors. It also allows the airline to focus on improving other aspects of customer service and operational planning.

4. **Data Security and Privacy**: Since reservation systems handle sensitive customer information, it's crucial to incorporate secure data storage and encryption methods. This helps protect personal and financial data, maintaining trust with customers and complying with data protection regulations

5. **Advanced Reporting and Analytics**: An effective system should include analytical tools that allow airlines to analyze customer preferences, booking trends, and seasonal demands. This data aids in making informed decisions about pricing, marketing, and route optimization, ultimately boosting revenue and customer satisfaction.

1.3 MODULES:

To ensure a comprehensive and efficient Resume Analyzer for Job Portals, the project will be divided into several interconnected modules, each focusing on a specific aspect of the platform. Below is a list of the key modules along with their descriptions.

User Management Module

- **User Registration and Authentication:** Handles user sign-up, login, password recovery, and authentication processes.
- **User Profile Management:** Allows users to view and update their personal information, travel preferences, and payment methods.
- **Role-Based Access Control:** Defines different user roles (e.g., passengers, agents, admins) and manages permissions accordingly.

interview Management Module

- **interview Scheduling:** Allows airlines to add, update, or cancel interview schedules and routes.
- **Seat Configuration:** Configures seat availability, classes (e.g., economy, business), and seating arrangements for interviews.
- **Availability Management:** Tracks available seats in real-time and updates inventory upon booking.

Reservation and Booking Module

- **interview Search:** Enables users to search for interviews based on origin, destination, date, and preferences.
- **Booking Process:** Facilitates booking tickets, selecting seats, and confirming reservations.
- **Booking Confirmation:** Sends booking confirmation emails and tickets to users upon successful payment.

Payment Processing Module

- **Payment Gateway Integration:** Supports secure payment processing through various payment methods, such as credit cards, debit cards, and digital wallets.
- **Currency Support:** Handles multi-currency transactions for international resumes.
- **Refund and Cancellation:** Manages ticket cancellations, refunds, and associated fees.

Search and Navigation Module

- **interview Filters:** Implements search filters (e.g., price, airline, departure time, stops) to help users find suitable interviews quickly.

- **Navigation Menus:** Provides intuitive menus and site navigation for seamless user experience.
- **Personalized Suggestions:** Offers interview recommendations based on user search history and preferences.

Review and Feedback Module

- **Customer Feedback:** Allows passengers to provide feedback on interviews, services, and booking experiences.
- **Feedback Moderation:** Enables admins to review and moderate feedback for quality and appropriateness.
- **Review Display:** Displays ratings and reviews for interviews and airlines to help users make informed decisions.

Admin Dashboard Module

- **Analytics and Reporting:** Provides detailed reports and analytics on resumes, user activity, and interview performance.
- **Content Management:** Manages website content, banners, and promotional materials.
- **User and Reservation Management:** Allows admins to view and manage user accounts and reservations.

Marketing and Promotions Module

- **Discounts and Offers:** Enables airlines to create and manage promotional offers and discount codes.
- **Email Marketing:** Integrates with email marketing tools to send newsletters, interview deals, and updates.

- **Loyalty Programs:** Implements frequent flyer programs and reward points to encourage repeat resumes.

Customer Support Module

- **Help Desk:** Provides a ticketing system for customer inquiries and issues.
- **Live Chat:** Integrates real-time chat support for users**.**
- **FAQ and Knowledge Base:** Offers a repository of frequently asked questions and travel guidelines.

Security and Compliance Module

- **Data Encryption:** Ensures sensitive data is encrypted during transmission and storage.
- **User Privacy:** Implements compliance with data protection regulations (e.g., GDPR, CCPA).
- **Fraud Detection:** Monitors transactions for fraudulent activity and implements measures to prevent fraud.

This modular approach ensures scalability, security, and user satisfaction in an Resume Analyzer for Job Portals.

2. SURVEY OF TECHNOLOGIES

2.1 SOFTWARE DESCRIPTION:

Overview

The Resume Analyzer for Job Portals involves creating a platform where users can search, book, and manage interviews with ease. It requires features for real-time seat availability, dynamic pricing, and secure payment processing. The system must support a user-friendly interface for interview searches and booking comparisons. Additionally, robust back-end data processing is essential to update schedules and manage resumes. Security measures ensure data protection, making the platform reliable for global users. The system leverages PHP and MySQL to deliver a scalable, secure, and user-friendly experience, integrating various advanced features to enhance both user and merchant interactions.

System Architecture

The system architecture follows a multi-tier design, ensuring separation of concerns and promoting maintainability. The main components include:

1. **Presentation Layer**: The user interface, developed using HTML, CSS, JavaScript, and frameworks like Bootstrap, ensures an intuitive and responsive design, accessible across various devices and screen sizes.
2. **Application Layer**: Implemented using PHP, this layer handles business logic, processes user requests, manages sessions, and enforces security protocols.
3. **Data Layer**: MySQL serves as the database management system, storing and retrieving data related to users, products, orders, and other entities. The database schema is designed to optimize performance and ensure data integrity.

Key Features

1. **User Management**:
   - Secure user registration and login.
   - Role-based access control for customers, merchants, and administrators.
   - Profile management with options to update personal details and payment methods.

2. **Search interviews**:
   o Allows users to input their travel details (origin, destination, dates, etc.).
   o Provides results based on user preferences, such as filters for price, class, and airlines.
   o Offers suggestions or autofill options for popular destinations..

3. **Booking Management**:
   o Directs users to finalize their selected interview, initiating the booking process.
   o Collects passenger details, payment information, and any add-ons like baggage or seat selection.
   o Provides a confirmation page or booking summary after successful payment

4. **Deals and Offers**:
   o Displays discounted interviews, special promotions, and seasonal offers.
   o Allows users to browse interviews with lower fares based on various conditions or dates.
   o Includes exclusive offers for loyalty members or frequent flyers.

5. **interview Details**:
   o Shows detailed information for specific interviews, including departure times, layovers, and arrival times.
   o Provides essential information such as baggage allowance, seat layout, and in-interview amenities.
   o Allows users to track or check the status of a interview in real time.

Technical Specifications

- **Backend**: PHP
- **Database**: MySQL
- **Frontend**: HTML, CSS, JavaScript, Bootstrap
- **Payment Gateways**: Integration with popular payment processors (e.g., PayPal, Stripe)
- **Hosting**: Compatible with various web hosting services supporting PHP and MySQL
- **APIs**: Integration with third-party services for email marketing, shipping, and analytics

Benefits

- **Streamlined Booking Process**: Simplifies selecting interviews, entering passenger details, and making payments..
- **Personalized Add-ons**: Allows users to customize their experience with options like seat selection and extra baggage.
- **Instant Confirmation**: Provides immediate booking confirmation, giving travelers peace of mind.
- **Efficient Payment Integration:** Ensures secure and convenient payment processing for users.
- **Booking Summary Access**: Offers a detailed summary, making it easy for users to review or print their booking details.

2.2 <u>LANGUAGES:</u>

In the context of the job analayzerreservation website, HTML forms the backbone of the website's user interface, enabling the creation of essential elements such as navigation bars, search forms, interview details, and booking buttons. It ensures that the structure of the website is accessible and easy to understand for both users and search engines.

CSS is used alongside HTML to enhance the visual presentation of the website. It defines the layout, design, colors, fonts, and overall appearance of the web pages. On an job analayzerreservation website, CSS is crucial for making the site visually appealing, responsive across different devices, and user-friendly. By using CSS frameworks like Bootstrap or custom styles, the website can maintain consistency in design while ensuring a seamless experience for users on desktop or mobile devices.

JavaScript is the programming language that adds interactivity and dynamic functionality to the website. It allows users to interact with the site without requiring page reloads, making it a critical part of enhancing the user experience. On an job analayzerreservation website, JavaScript is used for features such as validating user inputs, handling dynamic interview search results, managing drop-down menus, and updating real-time interview availability or prices. Additionally, JavaScript frameworks like React or Angular can be employed to improve performance and scalability.

Node.js is a server-side JavaScript runtime environment that allows developers to build scalable web applications. It is highly efficient for handling numerous concurrent requests, which is essential for a busy job analayzerreservation website that needs to manage many users simultaneously. With Node.js, the server-side logic can handle interview searches, reservations, and payment processing. Its non-blocking nature ensures that users receive quick responses, even during peak traffic periods. Node.js can also integrate seamlessly with other tools and services, such as payment gateways or external interview data APIs.

MySql is a lightweight, serverless database management system used to store and retrieve data on the website. It is well-suited for small to medium-sized applications like an Resume Analyzer for Job Portals, where data such as interview details, customer profiles, and booking information needs to be stored efficiently. MySql provides a simple yet powerful way to handle relational data without the overhead of complex server setups. It is easy to implement and maintain, making it ideal for handling the backend data storage of an job analayzerreservation website.

Front End:-	HTML, CSS, JS
Back End:-	MySql

2.2.1 MySql:

MySql is a lightweight, serverless, self-contained, and open-source relational database management system (RDBMS) that is embedded into the applications that use it. It is designed for simplicity, efficiency, and ease of use, making it suitable for small to medium-sized applications, mobile apps, and embedded systems.

Here are some key characteristics of MySql:

1. **Embedded Database**: MySql operates as an embedded database engine, meaning it runs within the same process as the application that utilizes it. There is no need for a

separate database server, and the entire database is stored in a single disk file, simplifying deployment and management.

2. **Serverless**: Unlike traditional client-server databases, MySql does not operate as a separate server process. Instead, it directly accesses the database file, making it easy to set up and use without the need for server configuration or administration.

3. **Self-Contained**: MySql databases are self-contained, meaning they do not rely on external dependencies or configuration files. Everything needed to access and manage the database is contained within the MySql library, making it highly portable and suitable for deployment on various platforms and operating systems.

4. **Relational Database**: MySql follows the relational database model and supports SQL (Structured Query Language) for querying and manipulating data. It offers features such as transactions, indexes, views, triggers, and more, providing a robust and flexible database solution.

5. **ACID Compliance**: MySql ensures ACID (Atomicity, Consistency, Isolation, Durability) compliance, which guarantees that transactions are processed reliably and consistently, even in the event of system failures or interruptions.

6. **Cross-Platform Compatibility**: MySql databases are cross-platform and can be used on various operating systems, including Windows, macOS, Linux, iOS, and Android. This makes MySql a versatile choice for applications that need to run on multiple platforms.

7. **Low Resource Consumption**: MySql is known for its low memory and disk space requirements, making it suitable for resource-constrained environments such as mobile devices and embedded systems. Despite its small footprint, MySql offers efficient performance and scalability for many applications.

MySql SERVES AS AN ASSET:

MySql serves as a valuable asset in the Resume Analyzer for Job Portals project, particularly in scenarios where a lightweight, embedded database solution is advantageous. Here's how MySql proves its utility:

1. Development and Testing Efficiency:

- **Quick Setup**: MySql requires minimal configuration, facilitating rapid deployment during development and testing phases.

- **Embedded Database**: Its self-contained nature allows developers to work without the need for external database servers, streamlining the development process.

2. Prototyping and MVP Development:

- **Rapid Prototyping**: MySql enables swift iteration and experimentation, ideal for building prototypes or Minimum Viable Products (MVPs) in the early stages of the project.
- **Cost-Effective Solution**: For startups or projects with budget constraints, MySql's open-source nature eliminates licensing fees, making it a cost-effective choice.

3. Local Development Environment:

- **Local Testing**: Developers can simulate database interactions locally without requiring network connectivity, enhancing efficiency and autonomy.
- **Cross-Platform Compatibility**: MySql databases are platform-independent, facilitating seamless collaboration across diverse development environments.

4. Data Integrity and Reliability:

- **ACID Compliance**: MySql ensures Atomicity, Consistency, Isolation, and Durability, maintaining data integrity and reliability during transactions.
- **Transactional Support**: Developers can implement complex transactional operations with confidence, essential for managing e-commerce transactions securely.

5. Scalability for Small to Medium Applications:

- **Suitable for Moderate Workloads**: While not designed for handling high concurrent loads, MySql is proficient for small to medium-scale applications, providing adequate performance.
- **Flexibility in Deployment**: MySql's lightweight footprint allows for easy deployment in environments where scalability demands are modest.

6. Seamless Integration with PHP:

- **Native Support in PHP**: MySql is integrated into the PHP ecosystem, allowing developers to interact with databases seamlessly using the MySql3 module.

- **ORM Compatibility**: Popular PHP frameworks like Django and Flask support MySql as a backend database, enabling Object-Relational Mapping (ORM) functionality for data management.

7. Backup and Maintenance:

- **Single-File Storage**: The entire database resides in a single file, simplifying backup and restoration processes, essential for data protection and maintenance.

8. Localized Deployments and Small-Scale Deployments:

- **Embedded Deployments**: MySql's embedded nature is well-suited for applications requiring a self-contained database solution, such as point-of-sale systems or single-user applications.

9. Cross-Platform Support:

- **Versatile Compatibility**: MySql databases are cross-platform, allowing seamless deployment across various operating systems and environments, enhancing flexibility.

MySql FOR BACKEND:

MySql can be instrumental in supporting backend operations in several ways:

Data Storage and Management:

- **interview Schedules:** MySql can store information about interviews, including interview numbers, departure and arrival times, routes, airline names, and seat availability. This data can be efficiently queried to provide users with up-to-date interview options.
- **User Profiles:** MySql can store passenger details, including user credentials, contact information, travel preferences, and payment methods. This enables secure user authentication and personalized booking experiences.
- **Reservation Records:** MySql can manage reservation details, such as booking IDs, passenger names, interview details, seat numbers, and payment information. This allows the backend to track resumes, process ticket modifications, and manage seat

inventory effectively.

Transaction Handling:

- **ACID Compliance:** MySql ensures ACID compliance, providing reliable and consistent handling of transactions. This is crucial for securely processing payments, confirming resumes, and updating seat availability.
- **Reservation Processing:** MySql facilitates transactional operations such as seat allocation, payment deductions, and booking confirmations. This ensures a seamless reservation experience while maintaining data integrity.

Backend Logic Implementation:

- **Business Rules Enforcement:** MySql allows the backend to enforce business rules, such as fare calculations, baggage policies, and cancellation fees. This ensures that all resumes adhere to airline policies and regulations.
- **Data Validation:** MySql supports data validation mechanisms to verify that incoming data, such as passenger details or payment information, meets predefined criteria. This helps prevent errors or inconsistencies in the database.

Performance and Scalability:

- **Efficient Query Execution:** MySql's efficient query processing capabilities enable fast and responsive backend operations, such as searching for interviews, managing reservations, and retrieving user profiles.
- **Scalability for Small to Medium Applications:** While MySql may not be suitable for large-scale platforms with heavy traffic, it is ideal for small to medium-sized Resume Analyzer for Job Portalss. It provides adequate performance and scalability for moderate user loads.

MySql serves as a robust and efficient backend database solution for the **Resume Analyzer for Job Portals** project. It supports critical operations, including data storage, transaction handling, business logic enforcement, and performance optimization. Its simplicity, reliability, and seamless integration with PHP make it a valuable tool for developing and maintaining the backend infrastructure of the job analayzerreservation platform

2.2.2 HTML, CSS, JS:

HTML, CSS, and JavaScript are essential building blocks for web development, each playing a vital role in creating modern, interactive websites. HTML (HyperText Markup Language) forms the structure and content of the web page, CSS (Cascading Style Sheets) is used to control the presentation and layout, while JavaScript brings interactivity and dynamic behavior. Together, they allow developers to create visually appealing, responsive, and interactive web applications.

Easy to Learn and Read: PHP's syntax emphasizes readability and clarity, making it accessible for beginners and enjoyable for experienced developers. Its straightforward and concise syntax reduces the learning curve and encourages good coding practices.

1. **HTML Structure**: HTML provides the framework for the content of a webpage, using elements like headings, paragraphs, images, links, forms, and more.
2. **Interpreted and Interactive**: PHP is an interpreted language, which means that code is executed line by line by an interpreter rather than compiled into machine code beforehand. This allows for interactive development and rapid prototyping, as code changes can be immediately tested and executed without the need for compilation.
3. **Dynamic Typing and Strong Typing**: PHP is dynamically typed, meaning variable types are inferred at runtime and can change during execution. However, PHP is also strongly typed, enforcing strict type checking to prevent unintended type errors and ensure code reliability.
4. **Extensive Standard Library**: PHP comes with a comprehensive standard library that provides ready-to-use modules and functions for common tasks such as file I/O,

networking, data manipulation, and more. This extensive library ecosystem simplifies development and reduces the need for external dependencies.

5. **Rich Ecosystem of Third-Party Libraries and Frameworks**: In addition to its standard library, PHP boasts a vibrant ecosystem of third-party libraries and frameworks contributed by the community. These libraries cover a wide range of domains, including web development (Django, Flask), scientific computing (NumPy, SciPy), data analysis (Pandas), machine learning (TensorFlow, PyTorch), and more.

6. **Platform Independence**: PHP is platform-independent, meaning code written in PHP can run on various operating systems, including Windows, macOS, Linux, and more. This portability ensures that PHP applications can be deployed and executed across diverse environments with minimal modifications.

7. **Community and Support**: PHP has a large and active community of developers, enthusiasts, and contributors who contribute to its ongoing development and maintenance. This vibrant community provides ample resources, documentation, tutorials, and forums for learning and support.

PHP is a versatile, user-friendly, and powerful programming language that excels in a wide range of applications. Its simplicity, readability, extensive library ecosystem, and active community make it an ideal choice for beginners and seasoned developers alike.

PHP SERVES AS AN ASSET:

PHP plays a crucial role in the Resume Analyzer for Job Portals project, offering a wide array of functionalities and benefits that contribute to the development and operation of the system:

Backend Development:

PHP is well-suited for backend development due to its simplicity, readability, and extensive library support. Backend components of the Resume Analyzer for Job Portals, such as server-side logic, interview scheduling, and API development, can be efficiently implemented using PHP frameworks like Django or Flask.

Database Interaction:

PHP seamlessly integrates with databases, allowing for easy interaction with backend databases such as MySql or MySQL. PHP's database libraries (e.g., SQLAlchemy) facilitate operations such as querying, insertion, updating, and deletion, enabling efficient management of interview schedules, passenger details, and booking records.

Web Development:

PHP frameworks like Django and Flask are commonly used for web development, providing tools for building robust and scalable web applications. With PHP, developers can create user-friendly interfaces, implement authentication mechanisms, and handle HTTP requests and responses, ensuring seamless integration between the platform's frontend and backend.

Automation and Scripting:

PHP's scripting capabilities are valuable for automating repetitive tasks, such as generating interview schedules, sending booking confirmations, and monitoring system health. Automation scripts streamline administrative tasks, enhance productivity, and ensure smooth operations of the Resume Analyzer for Job Portals.

Data Analysis and Insights:

PHP's extensive ecosystem of data analysis libraries (e.g., Pandas, NumPy) enables developers to analyze interview data, booking trends, and passenger preferences. These insights can guide strategic decisions, optimize pricing strategies, and improve the overall efficiency of the reservation platform.

Integration with Third-Party Services:

PHP's flexibility and compatibility with various APIs make it suitable for integrating third-party services into the system. Whether connecting to payment gateways, airline APIs, or interview tracking tools, PHP facilitates seamless communication and integration with external services, enhancing the platform's capabilities and user experience.

Community and Support:

PHP benefits from a large and active community of developers and contributors who provide resources, documentation, and support. Leveraging PHP's community-driven ecosystem, developers can access tutorials, forums, and libraries to address challenges, learn best practices, and accelerate development efforts.

PHP's versatility, ease of use, extensive library ecosystem, and active community support make it an indispensable tool for developing and operating the Resume Analyzer for Job Portals project. From backend development, database interaction, and web development to automation, data analysis, and integration with third-party services, PHP empowers developers to create a reliable, scalable, and feature-rich reservation platform.

PHP FOR FRONTEND:

While PHP is predominantly used for backend development, it can still play a role in frontend development for the Resume Analyzer for Job Portals project through various means:

Template Engines:

PHP web frameworks like Django come equipped with powerful template engines (e.g., Django Template Language) that allow developers to generate dynamic HTML content seamlessly. PHP code embedded within templates can handle logic for rendering interview schedules, booking details, passenger profiles, and other frontend components.

API Integration:

PHP can facilitate communication between the frontend and backend of the reservation system by serving as an intermediary for API requests and responses. PHP-based backend services can expose RESTful APIs that deliver data to the frontend, enabling real-time updates for features like interview availability, booking confirmations, and seat selection without requiring page reloads.

Client-Side Scripting:

Although JavaScript is the standard language for client-side scripting, PHP can still be employed for certain client-side tasks using libraries like Brython (PHP implementation for

the browser). While limited compared to JavaScript, Brython allows developers to write PHP code directly in HTML pages for frontend interactions, such as validating user input or displaying dynamic interview information.

Data Processing:

PHP's data processing capabilities can be leveraged in the frontend to manipulate and transform data before rendering it to users. Libraries like Pandas or NumPy can assist in tasks like calculating ticket prices, filtering interviews based on user preferences, or generating interactive visualizations for interview routes or seat maps, enhancing the user experience with dynamic content.

Build Tools and Task Runners:

PHP-based build tools and task runners (e.g., Fabric, Invoke) can streamline frontend development workflows by automating repetitive tasks such as optimizing assets, compressing images, or managing frontend testing. These tools help maintain productivity and ensure a seamless development experience.

Cross-Platform Development:

PHP frameworks like Kivy or BeeWare allow developers to build cross-platform desktop and mobile applications using PHP. While not traditional web frontend solutions, these frameworks enable the creation of native-like interfaces for interview booking and management applications, ensuring a consistent user experience across platforms.

Hybrid Approaches:

PHP can be used in conjunction with JavaScript frameworks (e.g., React, Vue.js) through hybrid approaches like server-side rendering or isomorphic JavaScript. In this setup, PHP handles initial rendering of interview details and user interfaces on the server, while JavaScript enhances client-side interactions, balancing PHP's backend strengths with JavaScript's frontend capabilites

REQUIREMENT AND ANALYSIS

2.3 REQUIREMENT SPECIFICATION:

1. Introduction

Purpose:

The purpose of the Resume Analyzer for Job Portals is to provide a comprehensive platform for booking interviews, enabling users to search for interviews, make reservations, and manage their resumes efficiently.

Scope:

The system will include features for user registration, interview schedule management, ticket booking, payment processing, and administrative tools for managing interview operations.

Stakeholders:

Passengers, administrators, developers, airline operators, and travel agents.

2. Functional Requirements

User Management:

- Users should be able to register for an account with a unique username and password.
- Users should be able to log in to their accounts securely.
- Users should be able to update their profile information, including contact details and travel preferences.

interview Schedule Management:

- Administrators should be able to add, edit, and delete interview schedules.
- interview listings should include details such as interview number, departure and arrival times, origin and destination, and seat availability.
- interview details should be updated in real time to reflect changes in availability or schedule adjustments.

Ticket Booking:

- Users should be able to search for interviews using criteria such as origin, destination, and travel dates.
- Users should be able to select seats and add optional services (e.g., baggage or meal preferences).
- Users should be able to confirm their resumes and make payments securely.

Order Processing:

- Users should receive booking confirmation emails or SMS upon successful reservation.
- Administrators should be able to view and manage resumes, including changes to interview details or cancellations.
- Ticket cancellations and refunds should be processed according to predefined airline policies.

Search and Filtering:

- Users should be able to search for interviews using keywords and filters (e.g., direct interviews, price range, travel time).
- Results should be sortable by criteria such as price, duration, or departure time.

User Reviews and Ratings:

- Users should be able to rate their travel experience and provide feedback for airline services.
- Ratings and reviews should be displayed on interview details pages to help users make informed decisions.

Admin Dashboard:

- Administrators should have access to a dashboard to monitor resumes, manage interview schedules, and track revenue.
- The dashboard should include features such as sales reports, passenger analytics, and operational tools for managing delays or cancellations.

3. Non-Functional Requirements

Performance:

- The system should handle concurrent user traffic efficiently without significant slowdowns.
- Search results and booking processes should be optimized for quick responses.

Security:

- User data and payment information should be encrypted and stored securely.
- Payment transactions should be processed through a secure payment gateway.
- The system should implement measures to prevent common security threats such as SQL injection and cross-site scripting (XSS).

Scalability:

- The system should be scalable to accommodate increasing numbers of users, interviews, and transactions.
- Scalability should be supported through efficient database design, caching mechanisms, and load balancing techniques.

Usability:

- The user interface should be intuitive, easy to navigate, and accessible across different devices and screen sizes.
- Users should be able to complete resumes and other interactions with minimal steps.

Reliability:

- The system should have high availability, with minimal downtime and robust error handling mechanisms.
- Data integrity should be ensured through regular backups and database maintenance procedures.

4. Constraints

- **Technology Stack:** PHP for backend development, MySQL or MySql for database management.
- **Budget and Time Constraints:** The project must adhere to predefined budget and timeline constraints.

5. Assumptions and Dependencies

- The system will rely on external services such as payment gateways, airline APIs, and third-party ticketing providers.
- Availability of development resources and expertise will impact project timelines and deliverables.

6. Sign-Off

The requirement specification document must be reviewed and approved by all relevant stakeholders before proceeding with development.
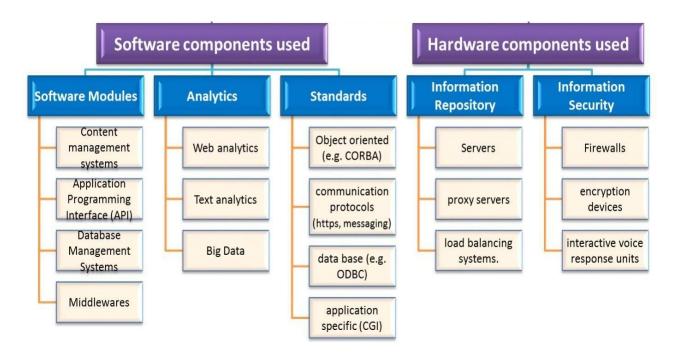
HARDWARE AND SOFTWARE REUIREMENTS:

FIG 3.1.1:Hardware and Software Requirements

2.3.1   HARDWARE

The hardware requirements for the Resume Analyzer for Job Portals project depend on factors such as the anticipated user load, scalability requirements, and specific infrastructure considerations. Here's a general outline of the hardware components needed:

Server Hardware:

1. **Processor (CPU)**:
   o Multi-core processors with sufficient processing power to handle concurrent user requests efficiently.
   o Consideration of CPU cores and clock speed to ensure smooth operation under varying workloads.

2. **Memory (RAM)**:
   o Adequate RAM capacity to support the application's memory requirements and database operations.
   o Minimum of 8GB RAM recommended for basic deployments, with additional RAM for scalability.

3. **Storage (SSD)**:
   o Solid-state drives (SSDs) are preferable over traditional hard disk drives (HDDs) for improved read/write speeds.
   o Storage capacity should accommodate the operating system, application code, database files, and any associated media assets (images, videos).

4. **Network Interface**:
   o Gigabit Ethernet interface for fast and reliable network connectivity.
   o Consideration of network bandwidth to handle incoming and outgoing data traffic, especially during peak usage periods.

Additional Considerations:

1. **Redundancy and Fault Tolerance**:
   o Implementation of redundancy mechanisms such as RAID (Redundant Array of Independent Disks) for data protection and fault tolerance.
   o Backup power supply (e.g., uninterruptible power supply or UPS) to mitigate the risk of data loss due to power outages.

2. **Scalability and Load Balancing**:
   o Provisioning for horizontal scalability through load balancing across multiple server instances.
   o Consideration of cloud-based solutions for elastic scalability and resource optimization based on fluctuating demand.

3. **Monitoring and Management**:
   o Installation of monitoring tools to track server performance metrics (CPU usage, memory utilization, disk I/O).
   o Remote management capabilities for system administration tasks and troubleshooting.

4. **Security Measures**:
   - o Implementation of security measures such as firewalls, intrusion detection/prevention systems, and regular software updates to protect against cyber threats.
   - o Secure physical location for server deployment to prevent unauthorized access and ensure data integrity.

5. **Compliance and Regulations**:
   - o Compliance with industry standards and regulations regarding data privacy, security, and confidentiality (e.g., GDPR, PCI DSS).

6. **Budget and Resource Allocation**:
   - o Consideration of budget constraints and resource allocation for hardware procurement, maintenance, and ongoing operational expenses.

2.3.2   SOFTWARE

The software requirements for the Resume Analyzer for Job Portals project encompass various components for both development and deployment. Here's an overview of the essential software needed:

Development Environment:

1. **PHP 3.x**:
   - o Core programming language for backend development.
   - o Ensure compatibility with required PHP packages and frameworks.

2. **Integrated Development Environment (IDE)**:
   - o Recommended IDEs include PyCharm, Visual Studio Code, or Sublime Text.
   - o Provides features such as code editing, debugging, and version control integration.

3. **PHP Packages**:
   - o Django or Flask: Web frameworks for backend development.
   - o Additional packages for database interaction (e.g., psycopg2 for PostgreSQL, mysql-connector-PHP for MySQL).

4. **Version Control**:
   o Git: Version control system for managing codebase changes.
   o Platforms like GitHub, GitLab, or Bitbucket for hosting repositories and collaboration.

Database Management:

1. **MySQL or MySql**:
   o MySQL: Robust relational database management system (RDBMS) for production deployments.
   o MySql: Lightweight, embedded database for development and testing environments.
2. **Database Administration Tools**:
   o MySQL Workbench: GUI tool for MySQL database administration.
   o phpMyAdmin: Web-based interface for managing MySQL databases.

Frontend Technologies:

1. **HTML5, CSS3, JavaScript**:
   o Fundamental web technologies for building user interfaces and interactive features.
   o JavaScript libraries or frameworks (e.g., React, Vue.js) for enhanced frontend functionality (optional).
2. **Frontend Frameworks** (optional):
   o Bootstrap, Materialize CSS, or Foundation for responsive design and UI components.
   o jQuery or other JavaScript libraries for DOM manipulation and event handling.

Web Server:

1. **Nginx or Apache**:
   - Web server software for serving HTTP requests and hosting web applications.
   - Configuration settings for proxying requests to backend application servers (e.g., Django, Flask).

Deployment and Infrastructure:

1. **Operating System**:
   - Linux-based distributions (e.g., Ubuntu, CentOS) preferred for server deployments.
   - Windows Server as an alternative for specific environments.
2. **Containerization Tools** (optional):
   - Docker: Containerization platform for packaging and deploying applications.
   - Docker Compose: Tool for defining and running multi-container Docker applications.
3. **Cloud Platform** (optional):
   - AWS, Google Cloud Platform, Microsoft Azure: Cloud services for scalable and reliable hosting.
   - Services such as EC2 (Elastic Compute Cloud), RDS (Relational Database Service), and S3 (Simple Storage Service) for infrastructure components.
4. **Monitoring and Logging**:
   - Prometheus, ELK Stack (Elasticsearch, Logstash, Kibana): Tools for monitoring system performance and analyzing logs.
5. **Security Measures**:
   - SSL/TLS certificates for securing web traffic (HTTPS).
   - Firewall configurations and security policies to protect against cyber threats.
6. **Development and Deployment Tools**:
   - Package manager (e.g., Pip) for installing PHP dependencies.
   - Build automation tools (e.g., Fabric, Ansible) for automating deployment tasks.

- o Continuous integration/continuous deployment (CI/CD) pipelines for automated testing and deployment.

Additional Software:

1. **Task Runners**:
   - o npm: Node.js package manager for frontend build automation (if using JavaScript-based frontend frameworks).
2. **Testing Frameworks**:
   - o pytest or unittest: Testing frameworks for writing and executing automated tests for backend code.
   - o Selenium WebDriver: Tool for automated browser testing (frontend).
3. **Documentation Tools**:
   - o Sphinx, MkDocs: Documentation generators for creating project documentation and user guides.
4. **Collaboration Tools**:
   - o Communication platforms (e.g., Slack, Microsoft Teams) for team collaboration and coordination.
   - o Project management tools (e.g., Jira, Trello) for task tracking and project planning.

3. ARCHITECTURE DIAGRAM
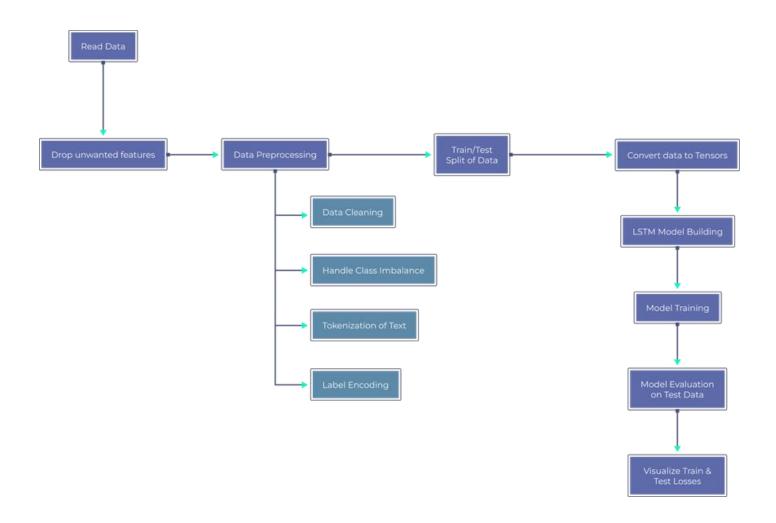
CONTEXT LEVEL DATA FLOW DIAGRAM

FIG 4.1: Data Flow Diagram for Resume Analyzer for Job Portals

ENTITY RELATIONSHIP DIAGRAM

The Entity-Relationship (ER) diagram for our Resume Analyzer for Job Portals illustrates the entities involved, detailing their attributes and the connections between them. These entities encompass elements such as interviews, Passengers, Administrators, Tickets, resumes, and Payments, with relationships denoted by terms like Schedules, Books, Manages, and Processes
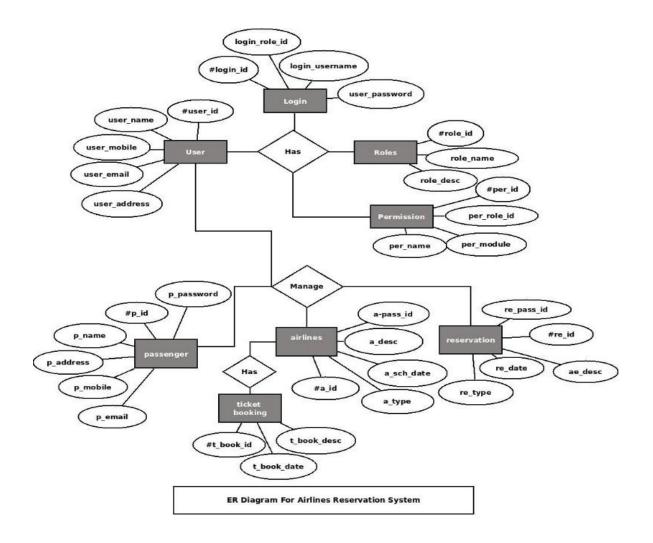
FIG 4.2:ER Diagram for Resume Analyzer for Job Portals

ENTITY RELATIONSHIP MAPPING RULES

The ER Mapping diagram showcases the conversion of the ER diagram into relational schemas tailored for the Resume Analyzer for Job Portals. Each entity and relationship depicted in the ER diagram is transformed into a corresponding table within the relational model. Below, you'll find a comprehensive breakdown of this mapping process.

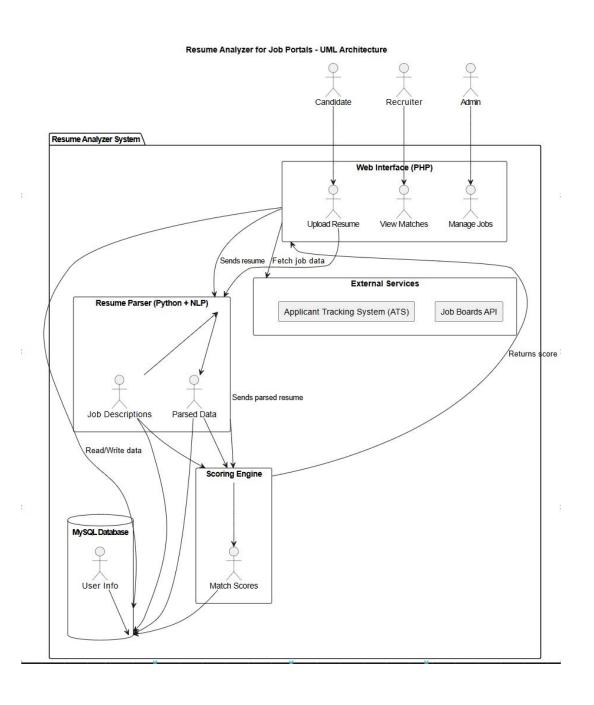# 4. UML CLASS DIAGRAM & USECASE DIAGRAM

Resume Analyzer for Job Portals - UML Architecture

Fig 5.1:Class diagram for Resume Analyzer for Job Portals

5. TESTING SOFTWARE

Unit Testing

Objective:

Test individual functions to ensure they work as expected.

Tools:

`unittest` or `pytest` in PHP.

Examples:

Testing Database Connections (`create_connection` function):

A unit test for `create_connection` would ensure the function successfully creates a connection to the database.

- **Mock Database Connection:** The connection can be mocked in tests to avoid requiring an actual database.
- **Test Example:** Confirm that `create_connection` returns a valid MySql connection object.

Testing Table Creation (`create_tables` function):

This function initializes the database by creating the required tables if they don't already exist.

- **Validation:** Verify that tables like `Users`, `interviews`, `Tickets`, `resumes`, and `Payments` are created correctly and accessible without errors.
- **Test Example:** After running `create_tables`, check that each table exists and has the correct columns.

Testing Initial interview Data Insertion (`add_initial_interviews` function):

This function populates the `interviews` table with predefined interviews.

- **Validation:** Ensure interviews are inserted correctly, with fields such as `interviewNumber`, `Origin`, `Destination`, `Price`, and `Schedule` matching the intended values.

- **Test Example:** Verify that `add_initial_interviews` inserts the expected rows, with no missing or extra entries.

Setup and Teardown (`setup_database` function):

- **Setup:** Before each test, `setup_database` can be called to reset the database and create a fresh, predictable environment.
- **Teardown:** After each test, the test framework deletes or resets the database, ensuring each test starts with a clean slate.
- **Test Example:** In the test framework, set up a fresh database and verify that the `Users`, `interviews`, `Tickets`, `resumes`, and `Payments` tables are empty or only contain initial data.

Example Unit Tests Using PHP's `unittest` Framework:

PHP Copy

code

```
import unittest

import MySql3

from air_ticket_system import create_connection,
create_tables, add_initial_interviews


class TestAirTicketReservationSystem(unittest.TestCase):

    def setUp(self):

        self.conn = create_connection()

        create_tables(self.conn)


    def tearDown(self):

        self.conn.close()


    def test_create_connection(self):

        self.assertIsInstance(self.conn, MySql3.Connection)
```

```python
    def test_create_tables(self):

        cursor = self.conn.cursor()

        cursor.execute("SELECT name FROM MySql_master WHERE
type='table';")

        tables = [table[0] for table in cursor.fetchall()]

        expected_tables = ['Users', 'interviews', 'Tickets',
'resumes', 'Payments']


self.assertTrue(set(expected_tables).issubset(set(tables)))


    def

        test_add_initial_interviews(self)

        :

        add_initial_interviews(self.conn)

        cursor = self.conn.cursor()

        cursor.execute("SELECT * FROM interviews;")

        interviews = cursor.fetchall()

        self.assertEqual(len(interviews), 5) # Expect 5 initial
interviews


if __name__ == '__main__':

    unittest.main()
```

Example Output:

Objective:

Test individual functions to ensure they work as expected.

Tools:

`unittest` or `pytest` in PHP.

FIG 6.1:Unit Testing

FIG 6.2:Functional Testing

Examples of Tested Functions:

1. Test `create_connection` to confirm a database connection is established.
2. Test `create_tables` to verify all tables (`Users`, `interviews`, `Tickets`, `resumes`, `Payments`) are created successfully.
3. Test `add_initial_interviews` to ensure that initial interviews are inserted with correct data.

Explanation of Output:

- **Each test case (e.g., `test_create_connection`, `test_create_tables`, `test_add_initial_interviews`) passes:**
  - `ok` indicates the test passed without issues.
  - `Ran 3 tests` means all three test functions were executed.
  - `OK` at the end indicates that all tests were successful, and no errors or failures occurred.
  -

Handling Failures:

If a test fails, the output will include detailed information about the failure, such as:

1. The test that failed.
2. A traceback explaining the failure (e.g., incorrect database structure or missing data).

How These Unit Tests Work with the job analayzerReservation Code:

1. **Isolation of Functions:**
   Each test focuses on a specific function to ensure it works independently, such as
   creating connections, tables, or inserting initial data.
2. **Setup and Teardown:**
   The `setUp` and `tearDown` methods guarantee that each test interacts with a fresh,
   isolated database environment.
3. **Feedback for Debugging:**
   Failing tests pinpoint exactly which part of the code needs attention, making
   debugging efficient.

Unit tests provide clear, reliable validation that each part of the Resume Analyzer for Job
Portals functions as intended, ensuring robust development without affecting production data
or requiring a live environment.

5.   SOFTWARE DEVELOPMENT MODEL

Implementing Agile for an Resume Analyzer for Job Portals

The Agile software development model for the Resume Analyzer for Job Portals emphasizes dividing the work into short, iterative sprints. Each sprint delivers a part of the system, fostering flexibility, feedback, and continuous improvement. Below is a breakdown of how Agile would be applied to this project:

1. Define Requirements and Initial Backlog

Initial Planning:

Identify core features such as user management, interview search and booking, payment integration, and ticket management.

Backlog Creation:

Create a prioritized product backlog of tasks or user stories (e.g., *"As a user, I want to search for interviews so that I can find the best travel options."*).

User Stories Examples:

- *"As an admin, I want to manage interview schedules so that users have accurate options."*
- *"As a user, I want to register and log in so that I can book tickets and view my reservations."*

2. Sprint Planning and Task Breakdown

Define Sprints:

Divide the project into 1-2 week sprints.

Select Tasks for Each Sprint:

Prioritize high-impact features or user stories for each sprint, depending on team capacity.

Task Assignment:

Break down features into manageable tasks (e.g., creating tables for `Users` and `interviews`, implementing search functionality, processing payments) and assign them to team members.

3. Develop and Test in Short Cycles

Development:

Focus on coding and unit testing for assigned tasks. For example, a sprint might focus on implementing and testing `create_tables` and `add_initial_interviews`.

Frequent Testing:

Each feature (e.g., database connections, booking functionality) is developed and unit-tested immediately to ensure reliability as the system scales.

4. Daily Standups

Daily Sync:

Hold short daily meetings to discuss progress, roadblocks, and next steps.

- Example: A developer might report an issue with `FOREIGN KEY` constraints when linking resumes to users, allowing others to assist in troubleshooting.

5. End of Sprint Review and Retrospective

Review:

At the end of each sprint, present completed features to stakeholders and gather feedback.

Retrospective:

Evaluate what went well, what didn't, and how to improve in the next sprint.

- Example: If integrating the payment gateway took longer than expected, refine the approach for future integrations.

6. Incorporating Feedback and Iterating

Continuous Feedback Loop:

Adjust the backlog and refine tasks based on stakeholder input.

- Example: Feedback might indicate users need additional filtering options in the interview search.

Adjust Priorities:

New tasks are added, and priorities are updated as required.

● Example: If users request real-time seat availability, it might be prioritized earlier.

7. Deliver Incremental Releases

Regular Releases:

At the end of each sprint, deploy completed features to a testing or staging environment. Each sprint results in a potentially shippable product increment.

User Testing and Feedback:

Stakeholders or users test the system, ensuring alignment with expectations.

8. Final Release and Maintenance

Final Sprint:

Focus on bug fixes, feature polishing, and ensuring the system is ready for production.

Maintenance:

Post-launch sprints address new requirements, user feedback, or feature enhancements to keep the system up-to-date.

Example Agile Sprint Breakdown for Resume Analyzer for Job Portals

Sprint 1: Set Up Database and Basic User Authentication

● Set up `airticket.db` and implement `create_connection`.
● Implement `create_tables` to initialize tables for `Users`, `interviews`, `resumes`, `Tickets`, and `Payments`.
● Develop and test basic user registration and login functionality.

Sprint 2: interview Search and Booking Management

● Implement and test `add_initial_interviews` for inserting sample interview data.
● Develop interview search functionality (search by destination, date, price, etc.).
● Allow users to view interview details and select preferred options.

Sprint 3: Booking and Payment Integration

● Implement booking functionality (create a booking, link to user and interview).

- Integrate a secure payment gateway for ticket purchases.
- Generate booking confirmation and ticket details after successful payment.

Sprint 4: Advanced Features and Reporting

- Implement seat selection and real-time availability updates.
- Add a interview rescheduling or cancellation module.
- Develop admin reporting tools for monitoring resumes, revenue, and user activity.

Sprint 5: Testing, Refinement, and Documentation

- Conduct thorough testing across all modules.
- Refine features based on stakeholder and user feedback.
- Document the system for end users and developers.

Benefits of Agile in this Project

- **Incremental Progress:** Regular, shippable increments ensure faster delivery of core features.
- **Flexibility:** Adaptability to changing requirements and stakeholder feedback.
- **Collaborative Development:** Daily standups and reviews foster teamwork and continuous improvement.

The Agile approach ensures a structured yet flexible development process, resulting in a robust and user-friendly Resume Analyzer for Job Portals.

6. PROGRAM CODE

HTML:

```html
<!DOCTYPE html>
<html lang="en">
<head>
 <meta charset="UTF-8">
 <meta name="viewport" content="width=device-width, initial-scale=1.0">
 <title>Job Resume Analyzer</title>
 <style>
  body {
   font-family: Arial, sans-serif;
   background-color: #f4f4f4;
   padding: 20px;
  }
  .container {
   background: white;
   padding: 20px;
   border-radius: 8px;
   width: 400px;
   margin: auto;
   box-shadow: 0 0 10px rgba(0,0,0,0.1);
  }
  h1 {
   text-align: center;
   color: #333;
  }
```

```css
    label {
      display: block;
      margin-top: 10px;
    }
    input[type="file"] {
      width: 100%;
      padding: 10px;
      border: 1px solid #ccc;
      border-radius: 5px;
    }
    input[type="submit"] {
      background-color: #28a745;
      color: white;
      border: none;
      padding: 10px 20px;
      border-radius: 5px;
      cursor: pointer;
      width: 100%;
      margin-top: 10px;
    }
    input[type="submit"]:hover {
      background-color: #218838;
    }
  </style>
</head>
<body>
```

```html
<div class="container">
  <h1>Resume Analyzer</h1>
  <form action="upload.php" method="POST" enctype="multipart/form-data">
    <label for="resume">Upload Your Resume (PDF/DOCX)</label>
    <input type="file" name="resume" id="resume" accept=".pdf,.docx" required>
    <input type="submit" value="Upload Resume">
  </form>
</div>


</body>
</html>
```

CSS:

```css
{
  margin: 0;
  padding: 0;
  box-sizing: border-box;
  font-family: "poppins", sans-serif;
}
:root {
  --primary-color: #c6c3c3;
  --second-color: #ffffff;}
```

```css
body {
    background-image: url("register.jpg");
    background-repeat: no-repeat;
    background-size: cover;
    background-position: center;
    background-attachment: fixed;
}
a {
    text-decoration: none;
    color: var(--second-color);
}
a:hover {
    text-decoration: underline;
}
.wrapper
    { width:
    100%; display:
    flex;
    justify-content: center;
    align-items: center;
    min-height: 100vh;
    background-color: rgba(0, 0, 0, 0.2);
}
.login-box {
```

```css
    position: relative;

    width: 450px;

    backdrop-filter: blur(25px);

    border: 2px solid var(--primary-color);

    box-shadow: 0px 0px 10px 2px rgba(0, 0, 0, 0.2);

    border-radius: 15px;

    padding: 7.5em 2.5em 4em 2.5em;

    color: var(--second-color);
}
.login-header

    { position:
    absolute; top: 0;

    left: 50%;

    transform: translateX(-50%);

    display: flex;

    align-items: center;

    justify-content: center;

    background-color: var(--primary-color);

    width: 140px;

    height: 70px;

    border-radius: 0 0 20px 20px;
}
.login-header span

    { font-size: 30px;

    color: var(--black-color);
```

```css
}
.login-header::before
    { content: "";
    position: absolute;
    top: 0;
    left: -30px;
    width: 30px;
    height: 30px;
    border-top-right-radius: 50%;
    background: transparent;
    box-shadow: 15px 0 0 0 var(--primary-color);
}
.login-header::after
    { content: "";
    position: absolute;
    top: 0;
    right:  -30px;
    width:  30px;
    height: 30px;
    border-top-left-radius: 50%;
    background: transparent;
    box-shadow: -15px 0 0 0 var(--primary-color);
}
.input-box
    { position:
    relative;
```

```css
    display: flex;

    flex-direction: column;

    margin: 20px 0;

}

.input-field

    { width: 100%;

    height: 55px;

    font-size: 16px;

    background: transparent;

    color: var(--second-color);

    padding-inline: 20px 50px;

    border: 2px solid var(--primary-color);

    border-radius: 30px;

    outline: none;

}

#user {

    margin-bottom: 10px;

}

.label {

    position: absolute;

    top: -28px;

    left: 20px;

    transition: 0.2s;

}

.input-field:focus~.label,
```

```css
.input-field:valid .label
    { position: absolute;
    top: -10px;
    left: 20px;
    font-size: 14px;
    background-color: var(--primary-color);
    border-radius: 30px;
    color: var(--black-color);
    padding: 0 10px;
}
.icon {
    position: absolute;
    top: 18px;
    right: 25px;
    font-size: 20px;
}
.remember-forgot
    { display: flex;
    justify-content: space-between;
    font-size: 15px;
}
.input-submit
    { width: 100%;
    height: 50px;
    background: #c6c3c3;
```

```css
    font-size: 16px;

    font-weight: 500;

    border: none;

    border-radius: 30px;

    cursor: pointer;

    transition: 0.3s;

}

.input-submit:hover {

    background: var(--second-color);

}

.register {

    text-align: center;

}

.register a {

    font-weight: 500;

}

@media only screen and (max-width: 564px) {

    .wrapper

        { padding: 20px;

    }

    .login_box {

        padding: 7.5em 1.5em 4em 1.5em;

    }

}

@keyframes blink {
```

```css
    0% {
      opacity: 1;
    }
    50% {
      opacity: 0;
    }
    100% {
      opacity: 1;
    }
}


.icon.blinking {
  animation: blink 1s infinite;
}


  #source-link
    { top: 60px;
   }

    backdrop-filter: blur(3px);
    background-color: rgba(255, 255, 255, 0.05);
    border: 1px solid rgba(255, 255, 255, 0.1);
    border-radius: 6px;
    box-shadow: 2px 2px 2px rgba(0, 0, 0, 0.1);
    cursor: pointer;
```

```css
#source-link>i {
  color: rgb(94, 106, 210);
}


#yt-link
  { top: 10px;
}


#yt-link>i {
  color: rgb(219, 31, 106);


}


.meta-link {
  align-items: center;
  backdrop-filter: blur(3px);
  background-color: rgba(255, 255, 255, 0.05);
  border: 1px solid rgba(255, 255, 255, 0.1);
  border-radius: 6px;
  box-shadow: 2px 2px 2px rgba(0, 0, 0, 0.1);
  cursor: pointer;
  display: inline-flex;
  gap: 5px;
  left: 10px;
```

```css
  padding: 10px 20px;

  position: fixed;

  text-decoration: none;

  transition: background-color 600ms, border-color 600ms;

  z-index: 10000;

}


.meta-link:hover {

  background-color: rgba(255, 255, 255, 0.1);

  border: 1px solid rgba(255, 255, 255, 0.2);

}


.meta-link>i,

.meta-link>span

  { height: 20px;

  line-height: 20px;

}


.meta-link>span

  { color: black;

  font-family: "Rubik", sans-serif;

  transition: color 600ms;

}
```

BACKEND:

```php
<?php
$servername = "localhost";
$username = "root"; // Change as needed
$password = ""; // Change as needed
$dbname = "job_portal"; // Make sure this database exists

// Create connection
$conn = new mysqli($servername, $username, $password, $dbname);

// Check connection
if ($conn->connect_error) {
    die("Connection failed: " . $conn->connect_error);
}

if ($_SERVER['REQUEST_METHOD'] == 'POST' && isset($_FILES['resume'])) {
    $file_name = $_FILES['resume']['name'];
    $file_tmp = $_FILES['resume']['tmp_name'];
    $file_size = $_FILES['resume']['size'];
    $file_error = $_FILES['resume']['error'];

    if ($file_error === 0) {
        $file_ext = pathinfo($file_name, PATHINFO_EXTENSION);
        $allowed_extensions = ['pdf', 'docx'];

        if (in_array($file_ext, $allowed_extensions)) {
            // Create a unique file name
            $new_file_name = uniqid('resume_', true) . '.' . $file_ext;
            $upload_path = 'uploads/' . $new_file_name;

            // Move uploaded file to the 'uploads' directory
            if (move_uploaded_file($file_tmp, $upload_path)) {
                // Save resume info to the database
                $sql = "INSERT INTO resumes (file_name, file_path, upload_date) VALUES ('$new_file_name',
'$upload_path', NOW())";

                if ($conn->query($sql) === TRUE) {
                    echo "Resume uploaded successfully. <a href='index.html'>Go back</a>";
                } else {
                    echo "Error: " . $sql . "<br>" . $conn->error;
                }
            } else {
                echo "Error uploading the file.";
            }
        } else {
            echo "Invalid file type. Only PDF and DOCX files are allowed.";
        }
    } else {
        echo "Error uploading the file.";
    }
```

```php
} else {
   echo "No file uploaded.";
}

$conn->close();
?>
```

DATABASE SETUP:

```sql
CREATE DATABASE job_portal;


USE job_portal;


CREATE TABLE resumes (
   id INT(11) AUTO_INCREMENT PRIMARY KEY,
   file_name VARCHAR(255) NOT NULL,
   file_path VARCHAR(255) NOT NULL,
   upload_date TIMESTAMP DEFAULT CURRENT_TIMESTAMP
);
```

7.   RESULTS AND DISCUSSIONS

7.1 DATABASE DESIGN

Database design is a critical component of the system architecture for the Resume Analyzer for Job Portals. At the analysis stage, the essential data elements and structures required for the system's functionality are identified and organized. These components are structured and integrated to form the backbone of the data storage and retrieval system.

A database serves as a repository for storing and organizing interrelated data with minimal redundancy, enabling efficient access by multiple users. The primary goal is to provide users with easy, quick, cost-effective, and flexible access to the data. Relationships between data elements are established, and redundancies are eliminated to optimize storage and improve system performance.

Normalization is a key aspect of database design, ensuring internal consistency, minimizing redundancy, and maintaining data stability. By organizing data into well-structured tables and defining relationships between them, normalization reduces storage requirements, minimizes the risk of data inconsistencies, and improves the efficiency of data updates.
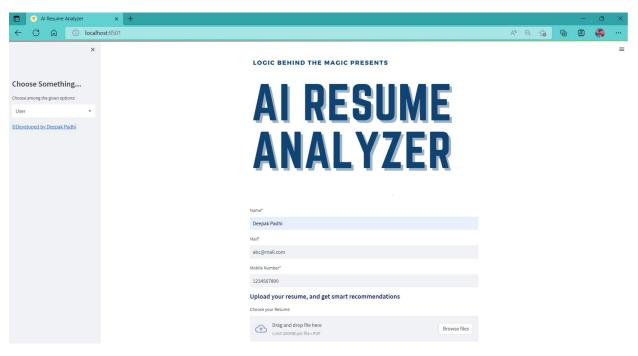
In the Resume Analyzer for Job Portals, database design is central to its functionality. The system relies on various MySQL tables to store critical data related to interviews, passengers, resumes, payments, and other entities. Each table is meticulously designed to facilitate efficient data storage and retrieval, ensuring smooth operation and scalability of the reservation platform.

FIG 9.1.1:Customer Home page

FIG 9.1.2:Customer Login Page

8.   CONCLUSION

The AI Job Analyzer project represents a dedicated effort to develop a robust, user-friendly, and feature-rich platform for streamlining the process of analyzing and evaluating resumes for job portals. Throughout the development process, we prioritized functionality, usability, and scalability to ensure the system meets the diverse needs of employers and job seekers in the competitive job market.

Addressing Market Needs

In today's fast-paced digital world, the demand for efficient and reliable AI-powered job analysis tools is greater than ever. Recognizing this need, our project set out to create a comprehensive solution that empowers employers to streamline the hiring process and enhances the job seeker experience. By leveraging the power of Python, AI/ML algorithms, and advanced data processing, the system was designed to simplify resume evaluation while maintaining accuracy, security, and performance.

Core Features and Functionality

The AI Job Analyzer offers a wide array of features to serve the needs of both employers and job seekers. From intuitive resume screening and candidate ranking tools to personalized job recommendations and seamless application tracking, every feature has been carefully designed to enhance efficiency and convenience. Robust security measures and a user-friendly interface ensure a smooth experience for all users.

Key functionalities include:

Resume parsing and keyword matching based on job descriptions.

Candidate ranking and suitability scoring using AI algorithms.

Personalized job recommendations for job seekers

Integration with job portals and applicant tracking systems (ATS).

Administrative tools for managing job postings, candidate applications, and interview scheduling

Development Process and Methodology

The development process followed a systematic and iterative approach, starting with comprehensive requirements analysis and design planning. Industry best practices, including modular design, AI model training, and rigorous testing, were employed to ensure the system's reliability, scalability, and performance. By utilizing Python for backend development, machine learning models for AI-based analysis, and secure cloud storage for

data management, we created an integrated solution that meets high standards of quality and performance.

Impact and Benefits

The AI Job Analyzer provides significant value to both employers and job seekers. For employers, the system offers an efficient platform to analyze resumes, identify top candidates, and streamline the hiring process. For job seekers, it delivers personalized job recommendations, better job matches, and insights into their resumes' strengths and weaknesses. By simplifying the recruitment process and enhancing decision-making, the system fosters trust and satisfaction among its users.

Future Enhancements and Growth Opportunities

While the current implementation fulfills the core requirements of a job analyzer platform, there are numerous opportunities for future enhancements and expansion. Potential areas for growth include:

Integration with third-party services like LinkedIn, job boards, and recruitment agencies.

Implementation of advanced analytics tools to predict hiring trends and optimize job matching.

Expansion into multi-language support for global recruitment.

Adopting emerging technologies like deep learning for improved resume parsing and sentiment analysis.

Conclusion

In conclusion, the AI Job Analyzer project represents a significant step toward creating a more efficient, inclusive, and accessible recruitment experience. By leveraging the capabilities of Python, AI/ML algorithms, and secure cloud services, we have built a scalable and versatile platform that meets the demands of modern recruitment. Looking ahead, we remain committed to continuous improvement and innovation, ensuring that our system evolves alongside technological advancements to remain a leader in the field of AI-powered recruitment technology.y.

9.   REFERENCES

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