

## CareerPrep Hub- A One-Step Career Preparation Platform

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**Abstract-** In today's competitive job market, students and job seekers rely on multiple online platforms for resume creation, interview preparation, and job-related practice tests. This fragmented approach increases complexity, time consumption, and inefficiency in career preparation. To address this challenge, this paper presents **CareerPrep Hub**, a unified web-based platform that integrates essential career preparation tools into a single system.

CareerPrep Hub provides an all-in-one solution that includes a **Resume Builder**, **Mock Interview Portal**, **Job Preparation Q&A system**, and a **centralized user dashboard**. The Resume Builder enables users to create professional resumes through structured forms with live preview and PDF download functionality. The Mock Interview Portal simulates HR and technical interviews using a chat-based question-answer model, providing feedback and performance scores. The Job Preparation module offers MCQs for aptitude, technical, and HR rounds, allowing users to practice and evaluate their performance. The dashboard allows users to monitor progress, view scores, and access all modules from a single interface.

The system is developed using **HTML**, **CSS**, **Bootstrap**, and **JavaScript** for the frontend, **Python (Flask framework)** for the backend, and **MySQL/SQLite** for data management. Additional tools such as **PDFKit** enhance document generation and data visualization.

CareerPrep Hub aims to simplify career preparation by providing a centralized, scalable, and user-friendly platform that improves accessibility, efficiency, and structured learning for students and job seekers. The proposed system demonstrates how integrating multiple career-support services into a single platform can significantly enhance digital career readiness and employability.

**Key words-** Career Preparation, Resume Builder, Mock Interview, Job Preparation Platform, Web Application, Student Employability

### 1. INTRODUCTION

Career preparation has become an essential and challenging process for students and job seekers in the modern digital era. With increasing competition in the job market, individuals are required to prepare resumes, practice interviews, and develop technical, aptitude, and communication skills to meet industry expectations. Currently, students depend on multiple online platforms—one for resume building, another for interview preparation, and others for MCQ practice and assessments. This scattered approach leads to confusion, inefficiency, lack of structured learning, and increased time consumption.

Moreover, the absence of a centralized system makes it difficult for students to track their progress, analyze their performance, and follow a structured career development path. Colleges and placement cells also face challenges in providing integrated digital support systems for students' career preparation.

To address these issues, CareerPrep Hub is proposed as a unified digital platform that integrates multiple career preparation services into a single web-based system. The platform combines resume creation, mock interview simulation, job preparation assessments, and performance tracking within one environment. This integrated approach simplifies the preparation process, enhances user experience, and ensures structured career development.

The system is designed to support students, job seekers, and educational institutions by offering a centralized, scalable, and user-friendly solution. By providing resume automation, interview practice, assessment tools, and progress visualization in one platform, CareerPrep Hub contributes to improved employability, digital readiness, and career preparedness in a systematic and efficient manner.

## 2. LITERATURE SURVEY

### *1.T. V. Yadalam, V. M. Gowda, V. S. Kumar, D. Girish, N.Namratha, "Career Recommendation Systems using Content-Based Filtering"*

This paper proposes a career recommendation system based on content-based filtering techniques. The system analyzes user profiles, skills, interests, and academic background to generate personalized career recommendations. By matching user attributes with predefined career domain features, the model provides accurate and relevant career suggestions. The proposed system focuses on personalization and user-centric recommendation, which improves the effectiveness of career guidance platforms. The research demonstrates that content-based filtering can play a significant role in intelligent career recommendation systems by supporting structured decision-making for students and job seekers.[1]

### *2.Burke.R, "Hybrid Recommender Systems: Survey and Experiments"*

This study presents a detailed survey of recommender system models, including content-based filtering, collaborative filtering, and hybrid recommendation techniques. The author explains the limitations of individual recommendation approaches and highlights how hybrid systems overcome challenges such as cold-start problems, data sparsity, and accuracy issues. The research provides a strong theoretical foundation for intelligent recommendation platforms and supports the integration of multiple algorithms to improve recommendation quality. This work contributes significantly to the design of personalized digital systems for user-centric applications.[2]

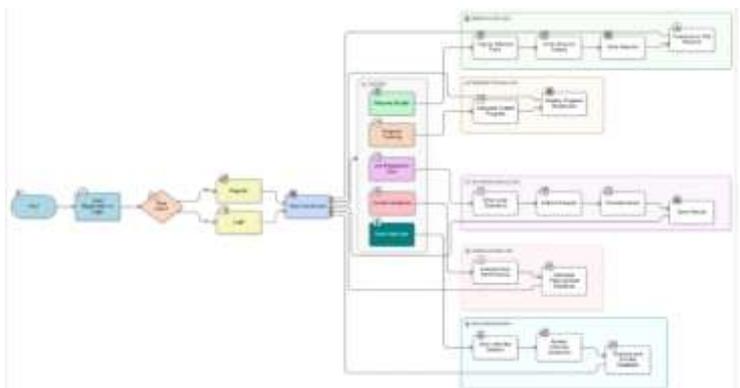
### *3.A. Mishra, S. Singh, R. C. Jisha, "AI-Powered Model for Intelligent Resume Recommendation and Feedback"*

This paper proposes an AI-based model for intelligent resume analysis, recommendation, and feedback generation. The system uses machine learning techniques to evaluate resume structure, content quality, and skill relevance. Based on analysis, the model provides automated suggestions and improvements to enhance resume quality. The research demonstrates the role of artificial intelligence in digital career guidance and highlights how automated feedback systems can support students and job seekers in improving employability and career readiness.[3]

## 2. METHODOLOGY

The project “**CareerPrep Hub – A Unified Platform for Resume Building, Mock Interviews & Job Preparation**” is designed to provide an integrated and reliable digital solution for career preparation. It addresses the problem of using multiple separate platforms for resume creation, interview practice, and job preparation by combining all essential services into a single unified web-based system.

The system follows a web-based client-server architecture with secure user authentication and a centralized dashboard. It integrates modules such as Resume Builder, Mock Interview System, Job Preparation Q&A, and Career Guidance. User inputs are processed through the backend and stored in a centralized database for evaluation, progress tracking, and future access.



**Figure 1: System Architecture**

The proposed system, **CareerPrep Hub**, is designed as a centralized web-based platform that integrates multiple career preparation services into a single digital environment. The system follows a modular architecture where users access the platform through a secure registration and login mechanism. After authentication, users are redirected to a unified dashboard that acts as the central control point for accessing all functional modules. This design ensures structured navigation, secure access, and a consistent user experience.

The architecture consists of interconnected functional modules including **Resume Builder**, **Interview Preparation**, **Q&A Preparation**, **Career Guidance**, and a **Mock Interview System**. Each module operates independently while being integrated through the central dashboard and backend system. The Resume Builder enables structured resume

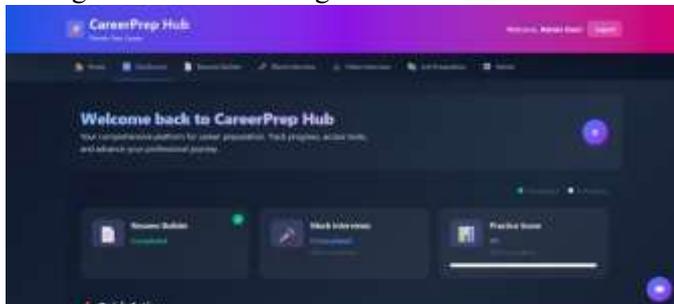
creation and PDF generation, the Q&A module supports assessment and evaluation, the Mock Interview module provides interview simulation and feedback, and the Career Guidance module supports structured career development based on user performance.

All system operations are managed through a centralized backend that handles data processing, evaluation, and database management. User data, performance records, and system outputs are stored in a centralized database, ensuring data consistency and reliability. This integrated architecture provides scalability, modularity, and seamless interaction between system components, making CareerPrep Hub an efficient and unified digital platform for career preparation and student employability enhancement.

### 3. WORKING MODULE

#### 1. User Authentication Module

This module handles user registration, login, and session management. New users register with email and password, which are encrypted using bcrypt hashing before storage. Returning users authenticate securely, with session tokens maintaining login state. Role-based access control distinguishes between regular users and administrator.

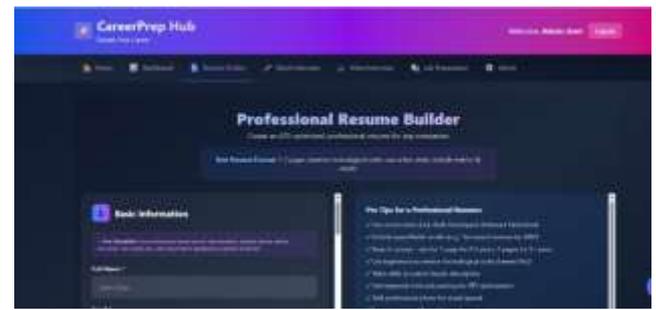


**Fig.1. User Authentication Module**

#### 2. Resume Builder Module

Users can create professional resumes through structured forms capturing personal information, educational qualifications, work experience, skills, and projects. The module provides live preview functionality, allowing users to see formatting changes in real-time. Upon completion, resumes can be exported as PDF files using PDFKit integration, with proper formatting maintained across all

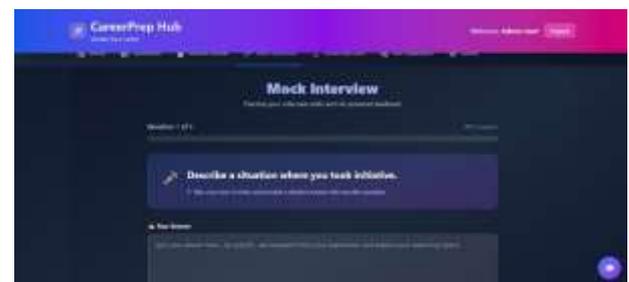
sections.



**Fig2. Resume Builder Module**

#### 3. Mock Interview Module

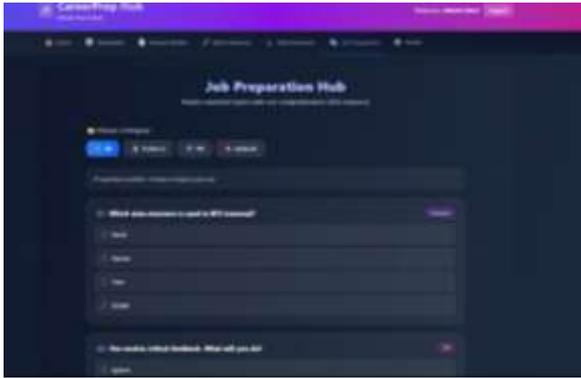
This module simulates interview experiences across two categories: HR interviews and technical interviews. Questions are displayed sequentially, with users providing responses through text input or multiple-choice selection. The system evaluates responses based on predefined answer keys and rubrics, generating feedback scores and improvement suggestions. For technical interviews, code snippets and problem-solving scenarios are included where applicable.



**Fig 3. Mock Interview Module**

#### 4. Job Preparation Q&A Module

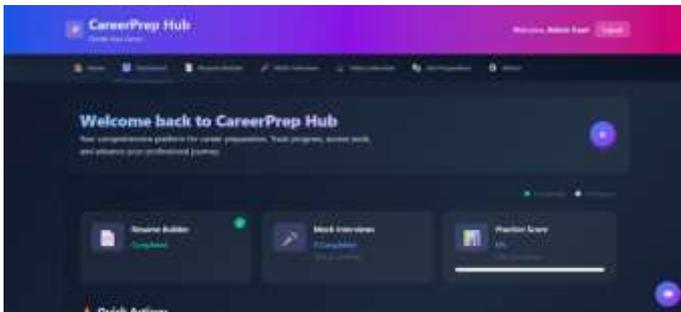
Users can access a comprehensive repository of practice questions organized by topic: aptitude, technical subjects, and HR scenarios. The module supports timed tests with configurable durations, simulating real exam conditions. After test submission, instant evaluation displays correct answers, user responses, and scores. Results are stored in the database for historical tracking.

**Fig 4..Job Preparation Q&A Module**

### 5. Dashboard Module

The dashboard serves as the central navigation hub, displaying:

- 1.Quick access buttons to all modules
- 2.Progress summary with completion percentages
- 3.Performance charts showing test scores over time
- 4.Resume completion status,
- 5.Recent activity timeline,
- 6.Personalized recommendations based on performance
- 7.Chart.js renders interactive line charts for score trends and pie charts for topic-wise performance distribution.

**Fig 5. Dashboard Module**

### 6. Admin Panel Module

Administrators have secure access to system management features:

- 1.User management (view, edit, disable accounts)
  - 2.Question bank management (add, update, delete questions across categories)
  - 3.Content moderation for user-generated content
  - 4.Analytics dashboard showing system usage statistics
- System configuration settings

**Fig 6. Admin Panel Module**

## 4.CONCLUSION:

CareerPrep Hub presents a unified and scalable digital platform that integrates resume building, interview preparation, job readiness training, and performance assessment into a single system. By combining multiple career preparation services within one web-based environment, the platform reduces fragmentation, improves accessibility, and provides structured support for students and job seekers. The system architecture ensures modularity, reliability, and seamless interaction between functional components.

The platform enhances user learning through interactive modules such as resume generation, mock interviews, job preparation resources, and performance analytics. It supports systematic skill development, self-assessment, and continuous improvement through data-driven feedback mechanisms. This integrated approach simplifies career preparation and promotes efficient learning workflows.

Overall, CareerPrep Hub serves as an effective digital solution for improving employability readiness and career development. Its modular design and scalable architecture make it suitable for future expansion, including AI-driven guidance, job matching services, and mobile platform integration, thereby establishing it as a sustainable and adaptable career preparation system.

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