

A
Project Report
on
PortfolioCraft: AI-Powered Portfolio Builder
Developed By
Prajapati Shivam Brijraj 2405112140075
Sharma Riya Mayur 2405112140085
as
Partial Fulfilment of Semester III of
Master of Computer Applications
for A.Y. 2025 - 2026
Under the Guidance of
Prof. Mini Bhola

Submitted To
Department of MCA
Faculty of IT & Computer Science
PARUL University





CERTIFICATE

This is to certify that **Mr. Prajapati Shivam Brijraj, Enrollment No. 2405112140075** and **Ms. Sharma Riya Mayur, Enrollment No. 2405112140085** students of Master of Computer Applications have satisfactorily completed the Minor Project on **“PortfolioCraft: AI-Powered Portfolio Builder”** at **Faculty of IT & Computer Science, Parul University** as partial fulfillment of MCA Semester III.

Seat No. _____

Date of Submission: _____

Internal Guide

Head of Department

Dean - FITCS

**Faculty of IT & Computer Science
PARUL University
Vadodara**

INDEX

No.	Description	Page No.
1.	About Department of MCA	1
2.	Project Profile <ul style="list-style-type: none"> 2.1 Project Definition 2.2 Project Description 2.3 Existing System / Work Environment 2.4 Problem Statements 2.5 Need for New System 2.6 Proposed System & Features 2.7 Scope 2.8 Outcomes 2.9 Tools & Technology used 2.10 Project Plan 	2-10
3.	Requirement Analysis <ul style="list-style-type: none"> 3.1 Feasibility Study 3.2 Users of the System 3.3 Modules 3.4 Process Model 3.5 Hardware & Software Requirements 3.6 Use Cases 3.7 Use Case Diagram 	11-16
4.	Design <ul style="list-style-type: none"> 4.1 Use Case Scenarios 4.2 Diagrams <ul style="list-style-type: none"> 4.2.1 UML / DFD 4.2.2 Entity Relationship Diagram 4.2.3 Flow Chart 4.3 Data Dictionary 	17-29
5.	Implementation <ul style="list-style-type: none"> 5.1 Form Layouts 5.2 Report Layouts 5.3 Coding Convention (Business Logic) 	30-43
6.	Testing <ul style="list-style-type: none"> 6.1 Test Strategy 6.2 Test Cases 	44-50
7.	Future Enhancement	51
8.	Bibliography	52

1. About Department of MCA & M.Sc. IT

Parul University

Parul University is a legitimate university established under Gujarat Private University Act 2009, after legislation passed by the Government of Gujarat on 26th March 2015 giving University status to Parul Group of Institutes functioning under the aegis of Parul Arogya Seva Mandal Trust.

Faculty of IT & Computer Science

Faculty of IT and Computer Science, Parul University has materialized as one of the prime IT education providers at global level. Various departments under Faculty of IT and Computer Science strive in preparing IT-industry ready professionals by means of various skill development courses, vocational courses, co-curricular & extra-curricular activities, industry visits and expert lectures.

MCA Department

The Department of Master of Computer Application and Master of Science in Information Technology at Parul University emphasizes on building professionals in the domain of computer applications by providing necessary environment by means of facilitating suitable blend of technical and non-technical learning experience. The department cultivates students in various curricular, co-curricular and extra-curricular activities in order to produce future system analysts, system designers, system programmers, application programmers, testing professionals, system managers, project managers, researchers and other leading positions in systems/IT department.

The department offers various subjects from diversified technical/non-technical areas such as – core IT domain, management, communication skills, mathematics & logic building and rich pool of elective subjects.

The department of MCA and M.Sc. (IT) focuses on project-based learning, and hence students are motivated to work on tiny hands-on projects in practical oriented subjects to get better exposure. Moreover, throughout their MCA studies, students are required to work on around 3 mini/major projects in individual/team to get enough confidence on software-development and thereby become industry-read

2. Project Profile

2.1 Project Definition

Project Title: PortfolioCraft: AI-Powered Portfolio Builder

Project Name: PortfolioCraft

PortfolioCraft is a sophisticated AI-driven web application aimed at simplifying the process of creating digital portfolios. It converts resumes into professional, visually appealing portfolios with minimal user effort. Users can upload resumes in PDF format, and the system extracts relevant data, summarizes it using AI, and generates a structured portfolio.

The platform is designed for students, freelancers, and professionals seeking a quick, easy, and professional way to establish an online presence without needing advanced design skills. PortfolioCraft combines AI content automation, a drag-and-drop interface, customizable themes, and real-time previews into a unified workflow.

2.2 Project Description

PortfolioCraft is a cutting-edge AI-powered web application designed to help students and professionals effortlessly create professional digital portfolios using their resumes. The platform simplifies portfolio creation by allowing users to upload their resumes in PDF format, from which AI extracts and summarizes relevant information to build a structured, visually appealing portfolio. The system incorporates a drag-and-drop customization interface, enabling users to rearrange sections such as Education, Experience, Skills, Projects, and Certifications. Additionally, users can select from beautiful color themes, including a soft peach background, light pink secondary accents, lavender highlights, and royal blue action buttons for a modern, professional aesthetic.

The application is built using HTML5, Tailwind CSS, and JavaScript (SortableJS for drag-and-drop functionality) on the frontend, ensuring a responsive and mobile-friendly design. On the backend, Python and Flask handle the core logic, with SQLite used for database storage. PDFPlumber is utilized to extract text from the uploaded resume, while the Gemini AI generates content summaries, bullet points, and recommendations for enhancing the portfolio content. Users can preview their portfolio in real time and instantly publish it to a shareable web link.

PortfolioCraft also integrates user authentication with animated login and signup flows to offer a polished user experience. Once published, users can update or re-customize their portfolios anytime. This makes PortfolioCraft a perfect tool for job seekers, freelancers, students applying for internships, or anyone looking to establish a personal online presence quickly.

2.3 Existing System / Work Environment

- **Canva:** Primarily a design tool. While visually capable, it lacks AI-based automation to generate content from existing documents and offers limited structural customization (no section drag-and-drop reordering).
- **Novoresume:** A premium service focused on static template fidelity. It offers robust template-based UI but provides no automated content generation from a user's resume source.
- **Zety:** Offers strong resume building logic but features limited real-time portfolio preview and publishing capabilities, confining the output largely to static resume files.
- **Manual Environments (Word/Adobe Illustrator):** This traditional workflow is extremely time-consuming, highly susceptible to formatting errors, requires substantial design skills, and lacks the ability to produce dynamically personalized, shareable web content.

2.4 Problem Statements

- **Inefficiency and Manual Effort:** Existing methods (like using Word or design tools) require extensive manual copying, formatting, and design effort to turn a resume into a web portfolio, making the process time-consuming.
- **Lack of Content Automation:** Current tools fail to automatically extract and intelligently summarize resume content (PDF format) to instantly build a structured portfolio draft, requiring the user to re-key data.
- **Limited Customization Control:** Other systems often restrict structural changes, lacking a flexible drag-and-drop interface necessary for users to easily rearrange and prioritize their portfolio sections (Education, Experience, etc.).
- **Inconsistent Publishing and Preview:** There is a lack of integrated platforms offering both real-time, polished preview and the capability to instantly publish the result to a unique, shareable web link.

2.5 Need for New System

1. **Eliminate Manual Effort with AI Automation:** Introduce AI-powered automation (Gemini AI) to instantly analyse and structure resume content, eliminating the time-consuming manual processes of re-typing and formatting data.
2. **Provide Instant, Professional Digital Presence:** Offer users the capability for real-time preview and one-click publishing to a secure, unique shareable web link, instantly establishing a professional online presence.
3. **Ensure Complete Customization Control:** Enable intuitive structural editing through a drag-and-drop editor, granting users full control over section arrangement and content prioritization without requiring any specialized design or coding skills.
4. **Offer Unified Platform Management:** Consolidate the entire workflow—from resume upload and AI generation to theme selection and final publishing—into a single, easy-to-use platform.

5. **Support Personalized Branding:** Deliver multiple, customizable theme options that allow users to select a professional aesthetic matching their personal branding goals.

2.6 Proposed System & Features

2.6.1 Modules:

2.6.1.1. User Authentication Module

- Handles user sign-up, login, and logout processes.
- Uses Flask-Login for session management and secure password storage.
- Ensures only registered users can access portfolio features.

2.6.1.2. Resume Upload Module

- Allows users to upload resumes in PDF format.
- Validates file type and size before storing it in the system.
- Prepares the resume for AI processing.

2.6.1.3. AI Resume Analysis Module

- Extracts text from uploaded resumes using PDFPlumber.
- Sends the extracted content to Gemini AI.
- Generates summarized portfolio sections, bullet points, and suggestions.

2.6.1.4. Portfolio Editor Module

- Provides a drag-and-drop interface for rearranging sections like Education, Experience, Skills, and Projects.
- Allows users to edit text, add new entries, and customise content.
- Integrates real-time updates with the preview module.

2.6.1.5. Theme Selector Module

- Lets users choose colour themes and layouts for their portfolio.
- Applies styles dynamically using Tailwind CSS.
- Supports personalised branding and visual appeal.

2.6.1.6. Portfolio Preview Module

- Displays portfolio changes in real-time as users edit content or themes.
- Ensures users can see exactly how the final portfolio will appear.

2.6.1.7. Portfolio Publishing Module

- Publishes the finalized portfolio online with a unique shareable link.
- Stores published portfolio data in the database for future updates.
- Provides instant access for sharing with recruiters, clients, or peers.

2.6.1.8. Admin Module

- Allows admin to manage users and portfolios.
- Provides monitoring of AI usage, uploaded resumes, and published links.
- Ensures smooth system management and maintenance.

2.6.2 Features:

- **Animated Authentication:** Provides a polished user experience during the login/signup process.
- **Dynamic Theming:** Offers multiple layout and theme options with real-time visual changes.
- **Real-time Preview:** Provides immediate visual feedback during customization.
- **Data Generation:** Ensures smooth resume parsing and section generation.
- **Publishing:** Enables quick access to shareable portfolio links.

2.7 Scope

2.7.1 Where:

PortfolioCraft can be effectively utilized across multiple environments, including:

- **Educational Institutions:** Colleges and universities can encourage students to create professional portfolios for internships, projects, and placements. It helps students showcase academic achievements, projects, and skills in an interactive format.
- **Job Portals & Career Platforms:** Professionals and fresh graduates can create shareable portfolios to attach with applications, enhancing visibility and impact.
- **Freelancing Platforms:** Freelancers can use PortfolioCraft to showcase their completed projects, technical skills, and client testimonials in a visually appealing, easy-to-share format.

2.7.2 How:

PortfolioCraft is a **web-based platform** that is fully responsive and accessible from any modern device:

- **Desktops & Laptops:** Provides full drag-and-drop editing, large screen preview, and advanced customization features.
- **Tablets:** Ensures portability with touch-friendly interactions for rearranging portfolio sections and previewing changes.
- **Mobile Browsers:** Optimized for small screens to allow professionals and students to quickly edit, preview, and publish portfolios on-the-go.

2.7.3 By Whom:

- **Students:** For creating academic portfolios, showcasing projects, skills, and achievements for internships or campus placements.
- **Job Seekers & Professionals:** For building an online presence, demonstrating work experience, and enhancing employability.
- **Freelancers & Creatives:** For displaying portfolios of projects, skills, certifications, and client work in a professional layout.

2.7.4 When:

PortfolioCraft is useful at multiple stages of career or academic life:

- During **internship or job applications**, when candidates need to quickly create a professional online portfolio.
- While **freelancers are pitching to clients**, enabling them to share structured and visually appealing work showcases.
- For **personal branding**, when individuals want to maintain a dynamic and professional online presence that can be updated as they acquire new skills or complete new projects.

2.8 Outcomes

1. Saves Time and Effort with AI Automation:

- PortfolioCraft eliminates the need to manually re-type or format resume information.
- AI-powered content extraction and summarization ensure users can generate a professional portfolio in minutes, instead of hours.

2. Professional Digital Presence:

- Users gain a polished, web-based portfolio that can be shared via unique URLs.
- The platform ensures consistent formatting, appealing visual layouts, and professional content presentation suitable for recruiters, clients, or academic evaluators.

3. Improved User Confidence:

- By presenting achievements, skills, and projects in a structured and attractive way, users feel more confident applying for jobs or showcasing work.
- Real-time previews allow users to experiment with layouts and content until satisfied, reducing anxiety about design or content quality.

4. Supports Personal Branding with Customizable Themes:

- Users can select from modern, professional color schemes and layouts to match their personal or career brand.
- Customizable sections allow users to prioritize the most important content, helping them stand out from other applicants.

5. Real-Time Updates and Easy Sharing:

- Any updates to skills, projects, or experience can be reflected immediately in the portfolio.
- Users can share their portfolios instantly via web links, eliminating the need to send large PDF files or printed copies.
- This ensures that portfolios remain dynamic and always up-to-date, reflecting the most current achievements.

6. Enhanced Career Opportunities:

- A professionally presented, AI-enhanced portfolio can increase the chances of securing jobs, internships, or freelance projects by creating a strong first impression.

7. Flexibility and Accessibility:

- PortfolioCraft's cloud-based approach allows users to access and update their portfolio anytime and from anywhere, ensuring continuous availability and convenience.

2.9 Tools & Technology used

1. HTML5

- **Purpose:** Provides the semantic structure of web pages.
- **Role:** Organizes portfolio content into meaningful sections like headers, navigation, sections, and footers.
- **Benefits:** Enhances accessibility, supports responsive layouts, and improves SEO for published portfolios.

2. Tailwind CSS

- **Purpose:** Utility-first CSS framework for designing modern, responsive interfaces.
- **Role:** Styles the portfolio layout, color themes, buttons, and interactive elements.
- **Benefits:** Rapid UI development, consistent styling, and support for dynamic theme customization.

3. JavaScript + SortableJS

- **Purpose:** Provides interactivity and dynamic behavior on the frontend.
- **Role:**
 - Enables drag-and-drop functionality for rearranging portfolio sections.
 - Updates the preview in real time as users modify their portfolios.
- **Benefits:** Enhances user experience and allows intuitive portfolio customization without page reloads.

4. Python + Flask

- **Purpose:** Backend programming and server-side application framework.
- **Role:**
 - Handles HTTP requests, routing, and template rendering.
 - Integrates AI processing for content generation.
 - Manages database operations and user authentication.
- **Benefits:** Lightweight, modular, and scalable framework ideal for web applications with AI integration.

5. SQLite

- **Purpose:** Relational database for storing user and portfolio data.
- **Role:**
 - Maintains user accounts, portfolio sections, theme preferences, and published URLs.
- **Benefits:** Easy to configure, lightweight, and compatible with Flask for small to medium-scale applications.

6. PDFPlumber

- **Purpose:** Extracts text and structured information from PDF resumes.
- **Role:**
 - Reads user-uploaded resumes and parses relevant sections like Education, Experience, Projects, and Skills.
- **Benefits:** Automates resume data extraction, reducing manual input and errors.

7. Gemini AI

- **Purpose:** AI-based content generation and summarization engine.
- **Role:**
 - Converts extracted resume information into concise, professional bullet points.
 - Suggests content enhancements for portfolio sections.
- **Benefits:** Provides automated content creation, improving portfolio quality and reducing manual effort.

8. Additional Libraries & Tools

- **Flask-Login:** Handles user authentication, session management, and access control.
- **Werkzeug:** Provides secure password hashing and request handling.
- **Jinja2:** Enables dynamic HTML templating for rendering personalized portfolio pages.

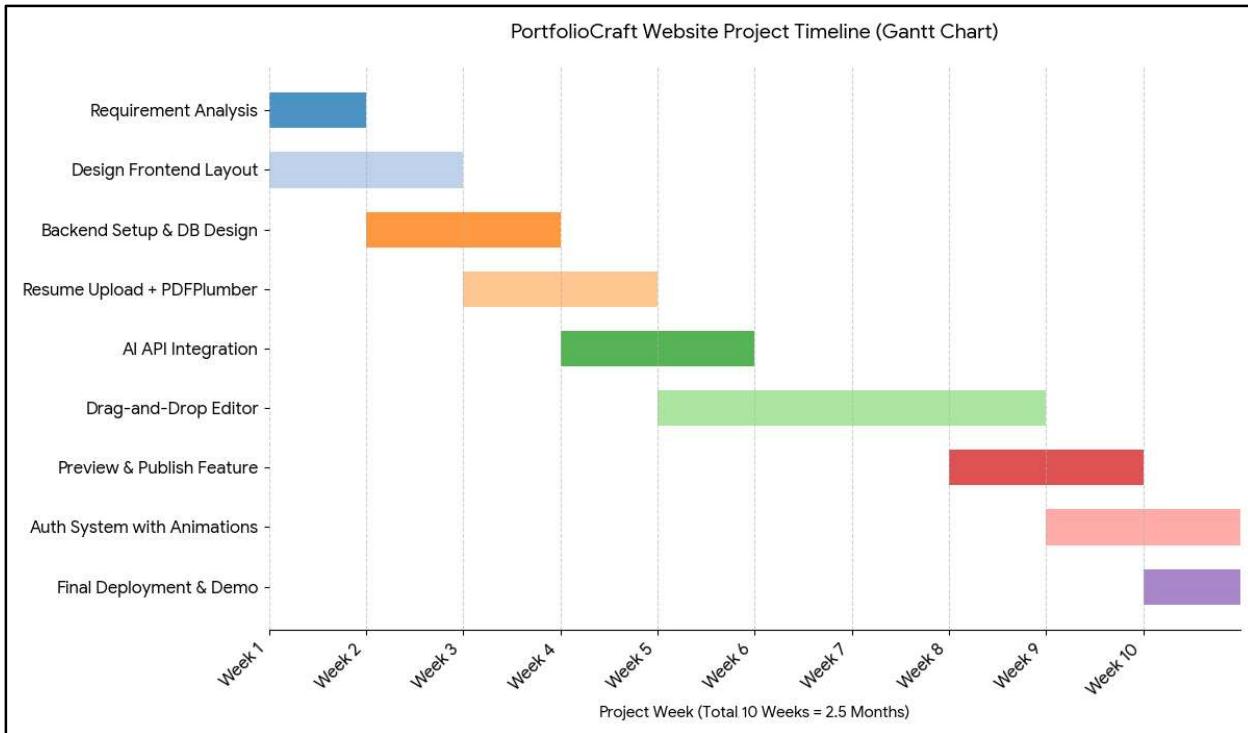
9. Architecture Overview

Workflow: Users → Resume Upload → AI Analysis → Portfolio Editor → Theme Selection → Preview → Publish → Shareable Link

Explanation:

1. Users upload a resume in PDF format.
2. PDFPlumber extracts the content.
3. Gemini AI analyses and generates summarized portfolio sections.
4. Users customize sections using the drag-and-drop editor.
5. Themes are applied for professional styling.
6. Real-time preview displays the portfolio instantly.
7. Users publish their portfolio and receive a unique shareable link.

2.10 Project Plan



3. Requirement Analysis

3.1 Feasibility Study

The feasibility study determines whether developing PortfolioCraft is technically, economically, and operationally viable.

- **Technical Feasibility**

The system is developed using **Flask (Python)** for the backend, **SQLite/PostgreSQL** for database storage, and **HTML, Tailwind CSS, and JavaScript** for the frontend. AI integration is achieved using **Gemini API**. These technologies are reliable, widely used, and feasible for development.

- **Economic Feasibility**

The project can be developed with minimal cost since it uses open-source technologies (Flask, SQLite, Tailwind CSS) and requires only an API subscription for Gemini AI. Hosting can be done on cloud platforms like AWS, Heroku, or PythonAnywhere at affordable costs.

- **Operational Feasibility**

The system simplifies portfolio creation for users who may not have design or coding skills. Users can upload their resume and instantly get an AI-generated professional portfolio with customization options. This ensures user acceptance and practical usability.

- **Schedule Feasibility**

The project can be completed within a reasonable timeline (2–3 months) as modules can be developed iteratively: resume parsing, AI integration, portfolio generation, and customization.

3.2 Users of the System

1. Primary Users (Job Seekers, Students, Professionals)

These are the main stakeholders of the system who want to create AI-powered portfolios. They can perform the following tasks:

- **Account Management**

- Register and log in securely.
- Manage personal profile and update details.
- Upload profile picture.

- **Resume Handling**

- Upload resume in supported formats (PDF).
- View parsed information extracted from the resume.

- **AI-Powered Portfolio Generation**
 - Submit parsed data to Gemini AI for portfolio content generation.
 - Receive personalized content such as career summary, skills, education, achievements, and project descriptions.
 - Choose from different portfolio templates and color themes.
- **Customization & Editing**
 - Edit AI-generated content directly (summary, skills, achievements, projects).
 - Add/remove sections (e.g., hobbies, certifications, testimonials).
 - Reorder sections using drag-and-drop.
 - Upload additional media like profile photo or project images.
- **Portfolio Management**
 - Save portfolios in the system for later editing.
 - Maintain multiple versions of portfolios for different job applications.
 - Download portfolio in PDF format.
 - Share portfolio via a unique link.

2. Administrators (System Managers)

Administrators ensure smooth operation and security of the platform. Their responsibilities include:

- Manage user accounts (approve, deactivate, reset).
- Monitor system logs and portfolio generation usage.
- Oversee database and ensure backups/recovery.
- Handle bug reports and provide system support.

3.3 Modules

The system is divided into the following main modules:

1. User Authentication & Profile Management

- Handles sign up, login, logout with secure authentication.
- Allows users to manage profile details and profile photo

2. Resume Upload & Parsing

- Users can upload PDF resumes.

- Extracts key data such as skills, education, projects, and experience.

3. AI Content Generation

- Sends structured data to Gemini AI.
- Generates portfolio content like summary, achievements, and descriptions.

4. Portfolio Design & Generation

- Creates portfolio using predefined templates.
- Supports different styles, responsive design, and light/dark mode.

5. Customization

- Users can edit AI-generated content.
- Supports drag-and-drop section reordering and uploading images.

6. Database Management

- Stores user details, resumes, AI content, and portfolios securely.

7. Download & Sharing

- Export portfolio as PDF.
- Generate shareable portfolio link with privacy settings.

8. Admin Management

- Admins can manage users, monitor system logs, and update templates.

3.4 Process Model

The **Incremental Development Model** is adopted for this project. In this approach, the system is built in small, manageable iterations, with each iteration delivering a functional part of the system.

Process Flow per Iteration:

1. **Resume Upload & Parsing** – User uploads a resume, and the system extracts structured data.
2. **AI Content Generation** – Parsed data is processed by Gemini AI to generate portfolio content.

3. **Portfolio Output & Customization** – A portfolio is generated using templates, which the user can edit and customize.
4. **Save & Download/Share** – Final portfolio is saved in the database and can be exported or shared.

Advantages of this Model:

- Early delivery of a working system to users.
- Easier debugging and testing due to smaller iterations.
- Enhancements such as new templates or features can be added in later iterations.

3.5 Hardware & Software Requirements

- **Hardware Requirements:**
 - Processor: Intel Core i3 or higher.
 - RAM: Minimum 4 GB, recommended 8 GB or more.
 - Storage: Minimum 100 GB, SSD preferred for faster performance.
 - Display: Minimum resolution 1366×768, Full HD recommended.
- **Software Requirements:**
 - Operating System: Windows 10/11
 - Python: Version 3.8 or higher.
 - Flask: Version 2.0 or higher.
 - Database: SQLite for storing user and portfolio data.
 - PDFPlumber: For extracting text from resumes.
 - Gemini AI: For generating summaries and improving content.
 - Web Browser: Chrome, Firefox, or Edge.
 - Code Editor: VS Code or PyCharm.
 - Node.js : For JavaScript libraries like SortableJS.
- **Optional Tools:**
 - Postman for API testing.
 - Browser developer tools for debugging.
 - Python virtual environment (.venv) for managing dependencies.

3.6 Use Cases

A use case is a description of a system's behaviour from the user's perspective, outlining how the system responds to a specific request or action. A use case diagram is a visual representation of these use cases, showing how users (or "actors") interact with the system to achieve specific goals.

Use Case:

Definition: A use case is a specific way a user interacts with a system to achieve a particular goal. It describes a sequence of actions between an actor (a user or external system) and the system.

1. **User uploads resume** → System parses and stores data.
2. **AI generates portfolio content** → User reviews and validates results.
3. **User customizes portfolio** → Edit text, reorder sections, upload photo.
4. **User saves portfolio** → Stored in database with version control.
5. **User downloads/shares portfolio** → Export as PDF or generate shareable link.
6. **Admin manages system** → Oversees user accounts, logs, and template updates.

3.7 Use Case Diagram

Actors:

- **User** – Interacts with the system to upload resumes, generate, customize, and share portfolios.
- **Admin** – Manages users, templates, and monitors system activities.
- **Gemini AI** – Provides AI-powered content generation from resume data.

Main Interactions:

- Resume Upload
- AI Portfolio Generation
- Customization
- Save / Download / Share
- Admin Management



3.7.1. Use case Diagram

4. Design

4.1 Use Case Scenarios

Scenario 1: Resume Upload and Parsing

- **Actor:** User
- **Pre-condition:** User is logged in.
- **Steps:**
 1. User uploads a resume (PDF).
 2. System parses and extracts structured data (skills, education, projects, experience).
- **Post-condition:** Data is stored in the database.

Scenario 2: AI Portfolio Generation

- **Actor:** User, Gemini AI
- **Pre-condition:** Parsed resume data exists.
- **Steps:**
 1. System sends structured data to Gemini AI.
 2. AI generates portfolio content (summary, achievements, descriptions).
 3. System returns content to the user.
- **Post-condition:** Draft portfolio is ready for customization.

Scenario 3: Customization of Portfolio

- **Actor:** User
- **Pre-condition:** AI-generated portfolio exists.
- **Steps:**
 1. User edits text.
 2. User reorders sections with drag-and-drop.
 3. User uploads profile photo.
- **Post-condition:** Customized portfolio is saved.

Scenario 4: Downloading and Sharing Portfolio

- **Actor:** User
- **Pre-condition:** Finalized portfolio exists.

- **Steps:**
 1. User requests download/share.
 2. System generates PDF/HTML and link.
- **Post-condition:** User receives portfolio output.

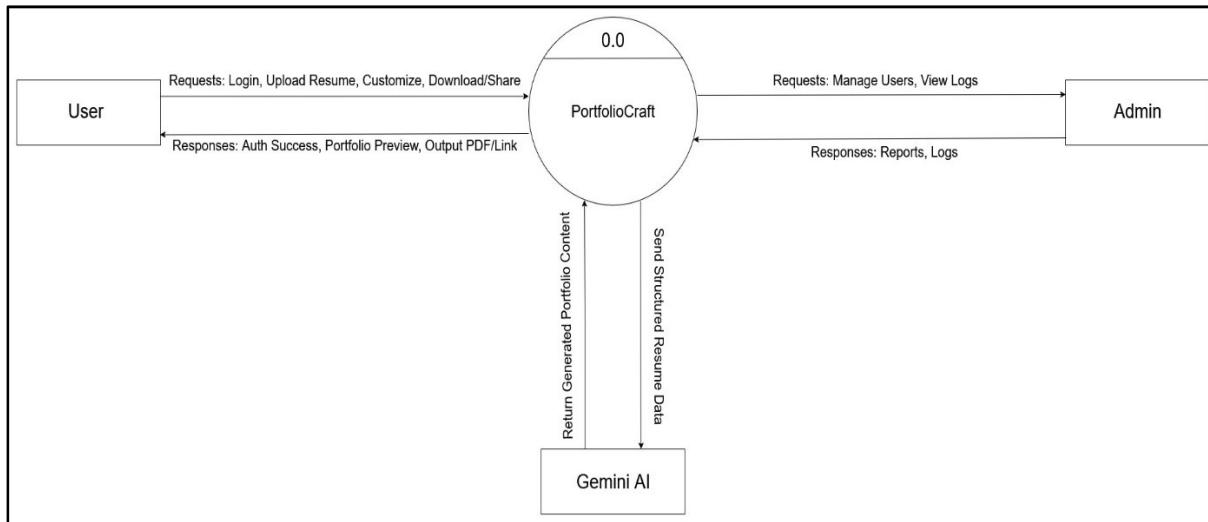
Scenario 5: Admin Management

- **Actor:** Admin
- **Pre-condition:** Admin has system access.
- **Steps:**
 1. Admin manages user accounts.
 2. Admin reviews logs and monitors system health.
- **Post-condition:** Smooth system operation.

4.2 Diagrams

4.2.1 UML / DFD

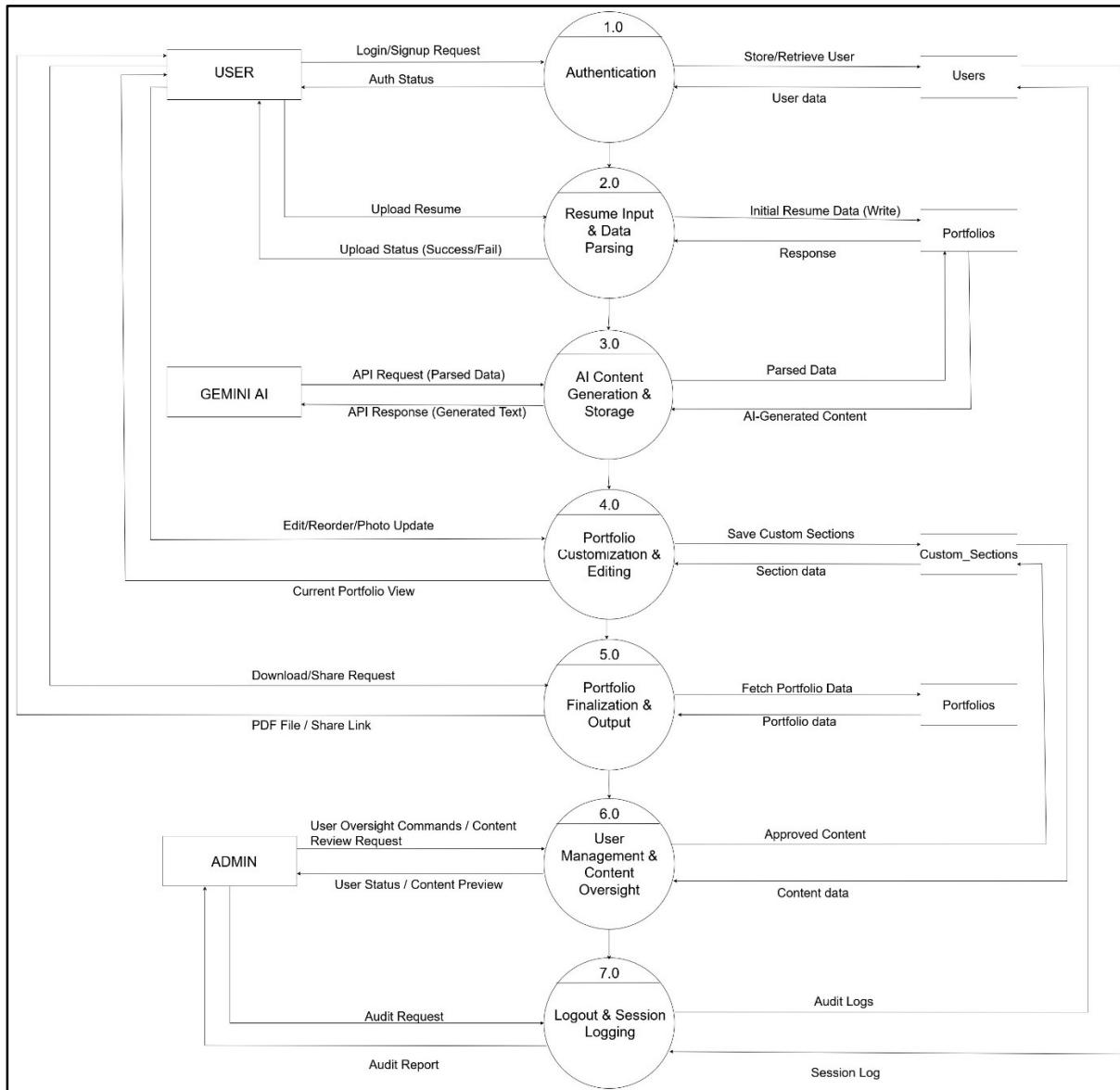
The Level 0 DFD shows the entire PortfolioCraft system as a single process interacting with external entities. Users upload resumes, receive AI-generated portfolio content, customize their portfolio, and publish or download it, while the database stores all information.



4.2.1.1 Level 0 DFD (Context Diagram)

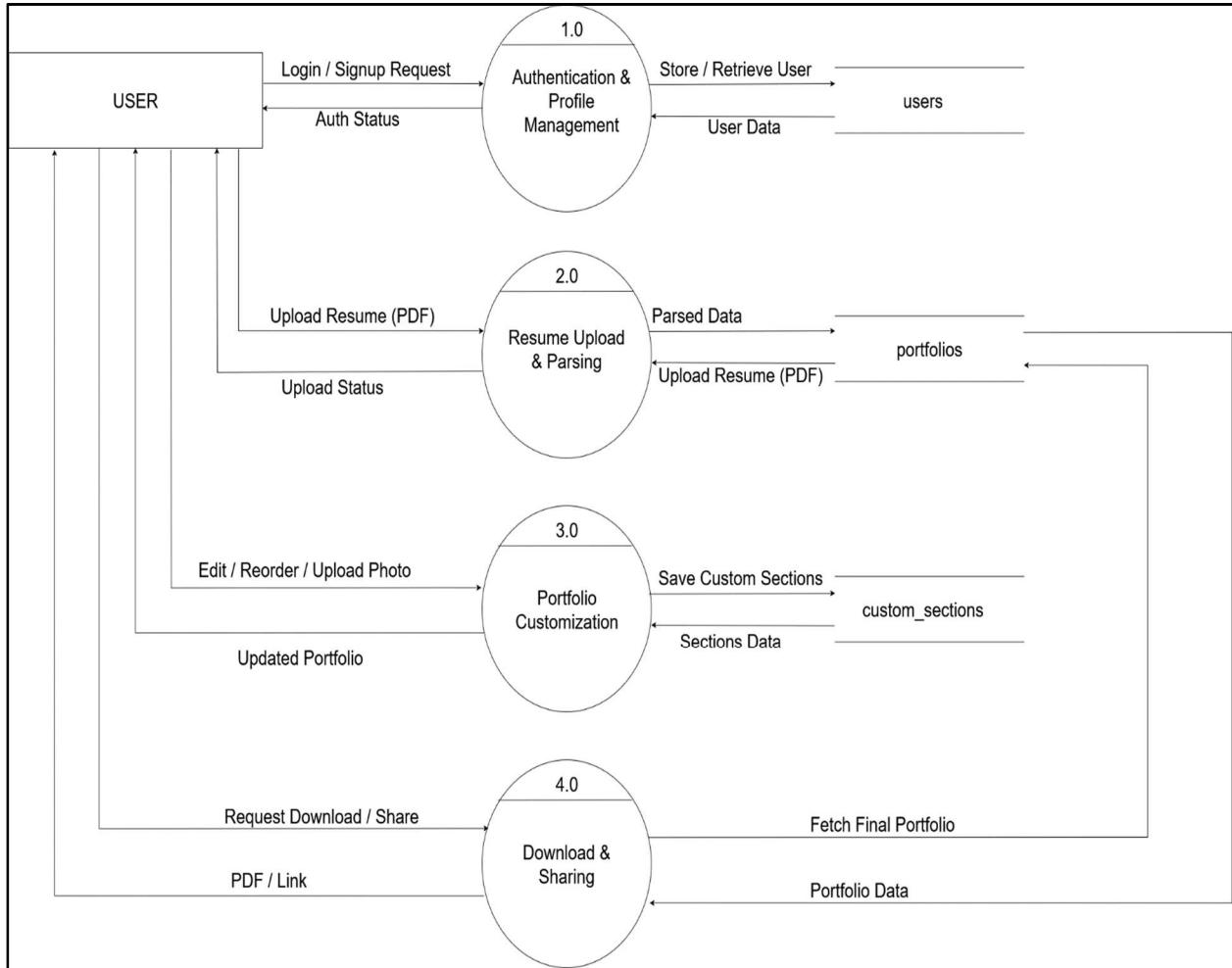
1st Level Data Flow Diagram:

The Level 1 DFD breaks the system into modules: resume upload, AI processing, portfolio customization, preview generation, and publishing. It shows how data flows between these processes and the database, detailing how user inputs are transformed into a complete portfolio.



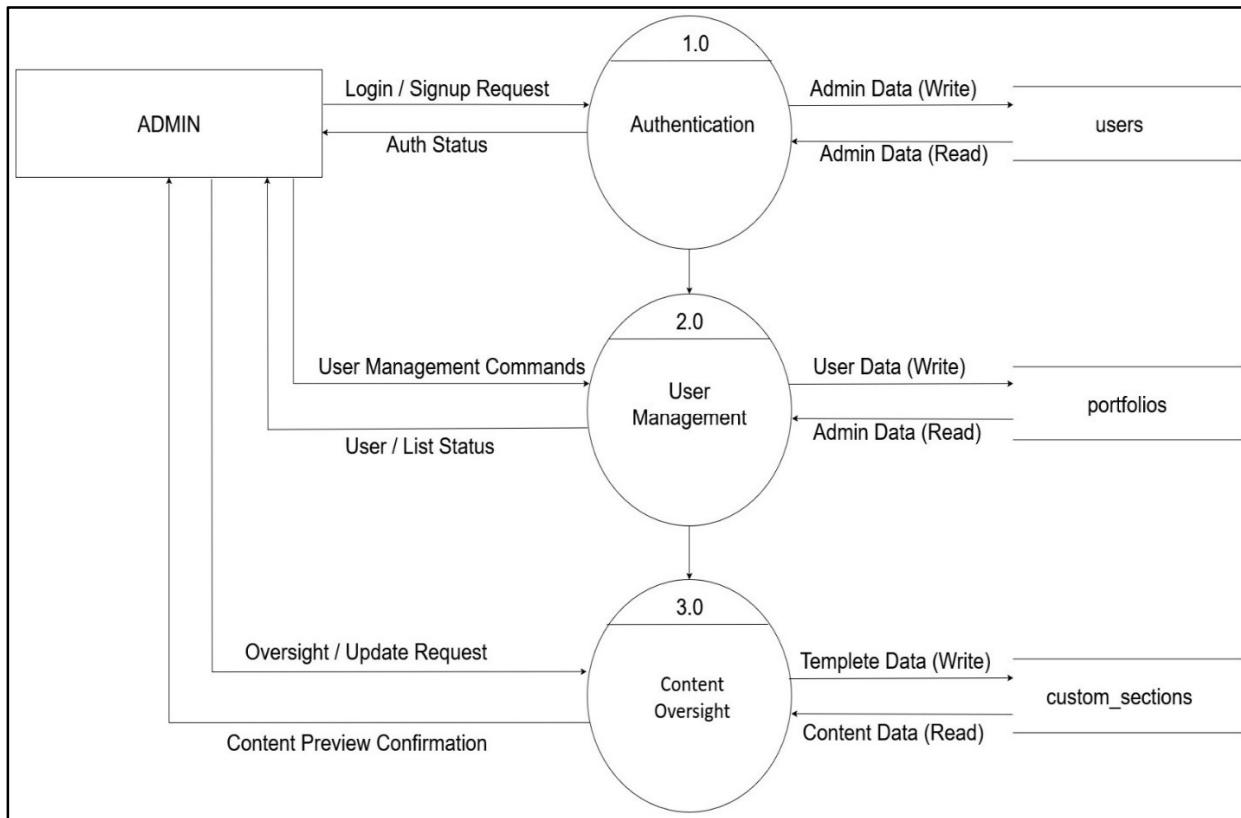
4.2.1.2 Level 1 DFD

The User-Level DFD describes how users interact with the system: creating accounts, uploading resumes, receiving AI-generated content, editing sections, applying themes, saving changes, and publishing or downloading their portfolio while system processes support each action in sequence.



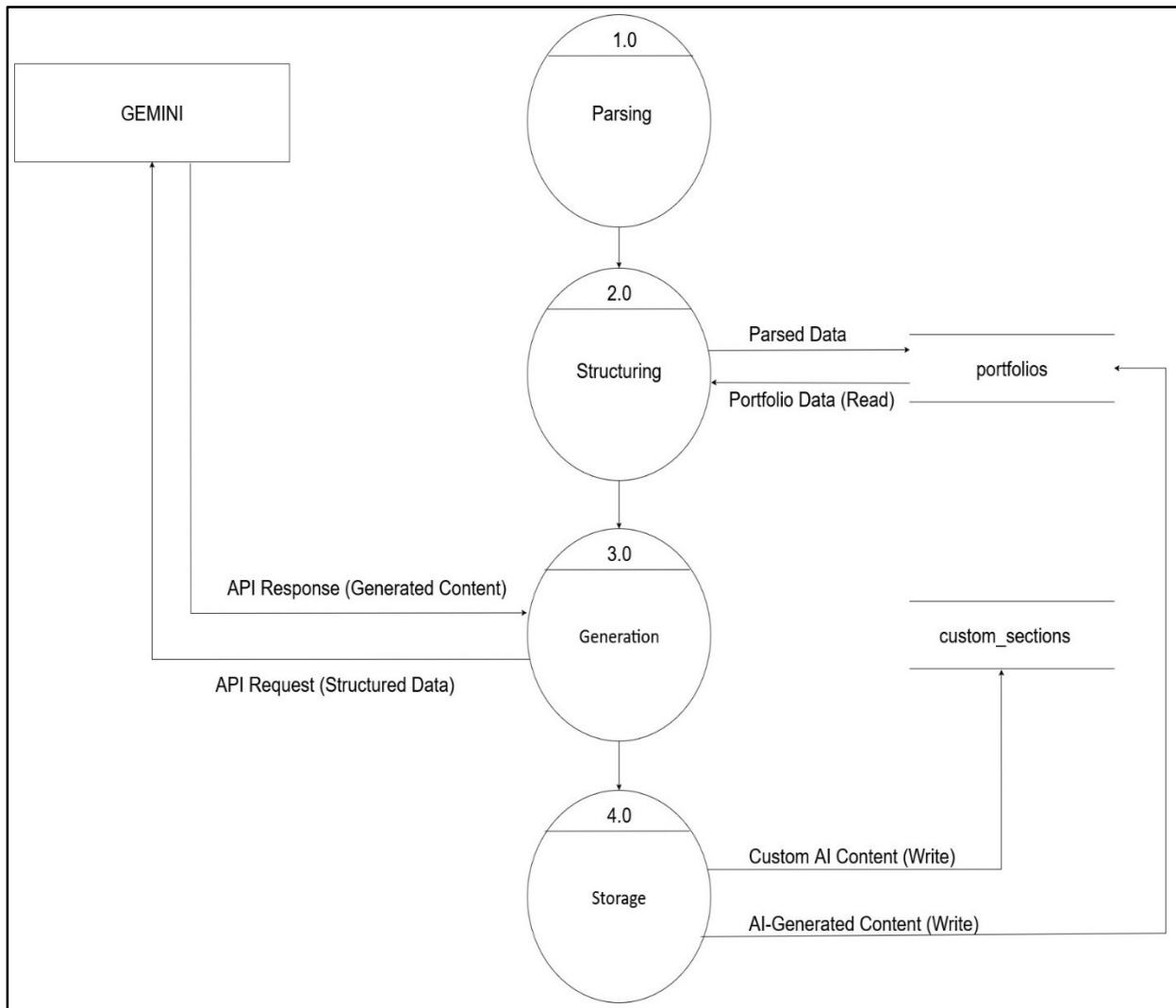
4.2.1.2 Level-1 User DFD

The Admin-Level DFD explains how the admin manages users, portfolios, and system data. Admins monitor activities, view logs, and maintain system performance using secure access to manage all backend operations and database interactions.



4.2.1.3 Level-1 Admin DFD

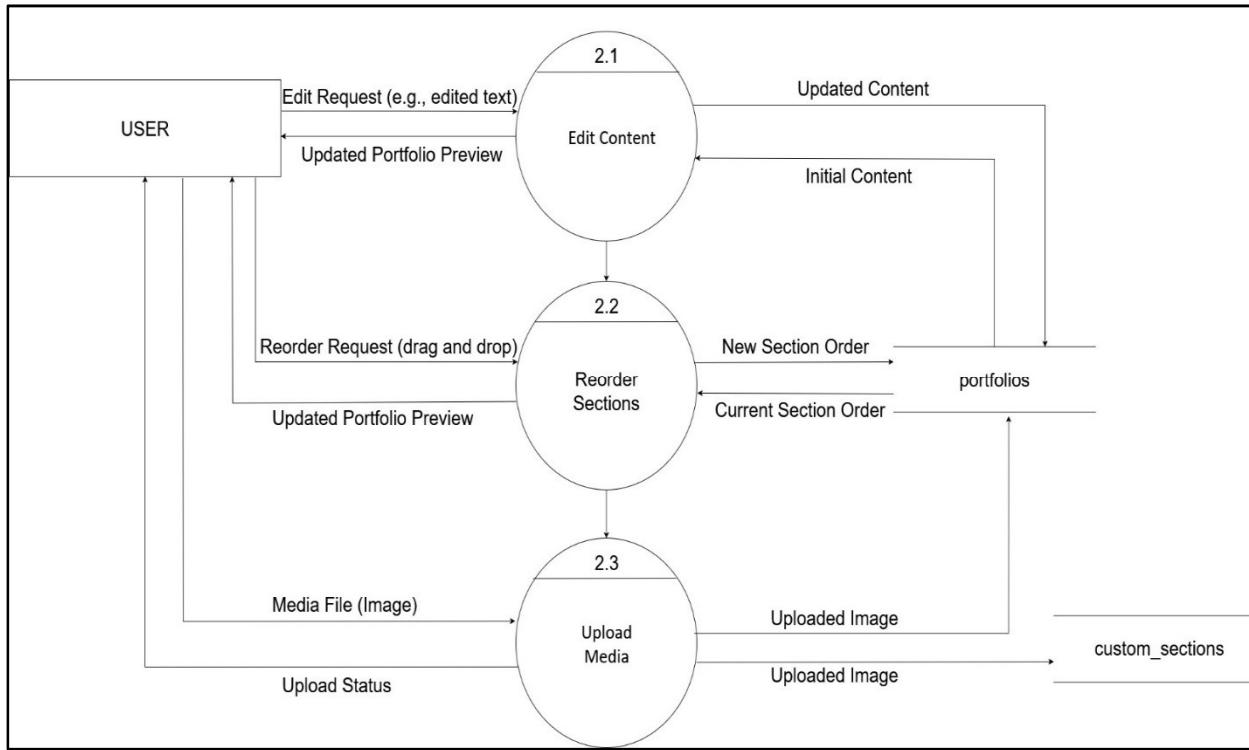
The Gemini AI DFD shows how the system sends extracted resume text to the AI module, which processes and returns structured content. This content is then stored, displayed to users for editing, and used to generate the final portfolio.



4.2.1.4 Level-1 Gemini AI DFD

2nd Level Data Flow Diagram:

The Level 2 User DFD provides a detailed breakdown of user actions, including resume uploading, AI processing, content editing, theme selection, reordering sections, previewing updates, saving portfolio changes, and publishing through a unique link, with continuous interaction with the system database.



4.2.1.5 Level-2 User DFD

4.2.2 Entity Relationship Diagram

An **Entity Relationship Diagram (ERD)** is a fundamental conceptual data-modeling technique used to visually represent the structure of a database. It shows how different data entities—such as Users, Portfolios, or Custom Sections—are connected to each other within the system. ERDs help developers and database designers understand the flow of information and define how data will be stored, accessed, and related in the final system.

ERDs were originally introduced by Peter Chen and have now become a standard tool in system design, especially for relational databases. They provide a clear blueprint of database tables, attributes, primary keys (PK), foreign keys (FK), and the relationships among them. By using ER diagrams, developers avoid redundancy, maintain data integrity, and ensure that the database supports all system functions efficiently.

Purpose of an ER Diagram

The main purposes of an ERD are:

- To visually map the logical structure of the database.
- To identify major entities involved in the system (e.g., User, Portfolio).
- To represent attributes stored in each entity.
- To define relationships like one-to-many (1:N), many-to-one (N:1), or many-to-many (M:N).
- To serve as a communication tool between developers, designers, and stakeholders.
- To prevent database anomalies such as duplication, inconsistency, or data loss.

Components of an ER Diagram

1. Entities: Entities are real-world objects or components that have data stored about them.

In PortfolioCraft, the main entities are:

- User
- Portfolios
- Custom_Sections

2. Attributes: These are the properties or details stored for each entity.

Example attributes:

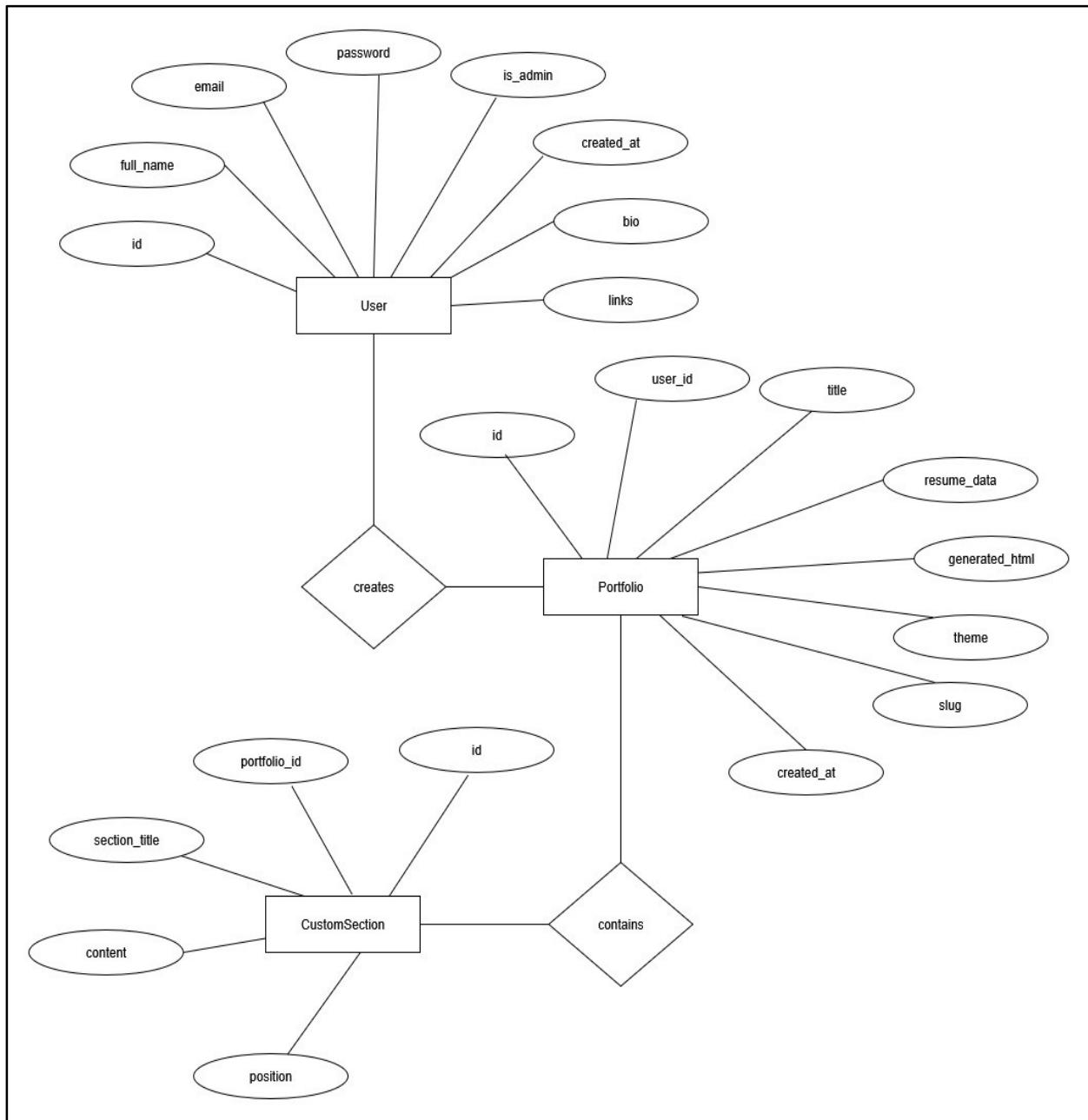
- User: id, full_name, email, password, created_at
- Portfolio: id, user_id, title, resume_data, theme
- Custom Section: id, portfolio_id, section_title, content

Attributes also include:

- Primary Keys (PK): uniquely identify a record (e.g., user.id)
- Foreign Keys (FK): link two entities (e.g., portfolios.user_id → users.id)

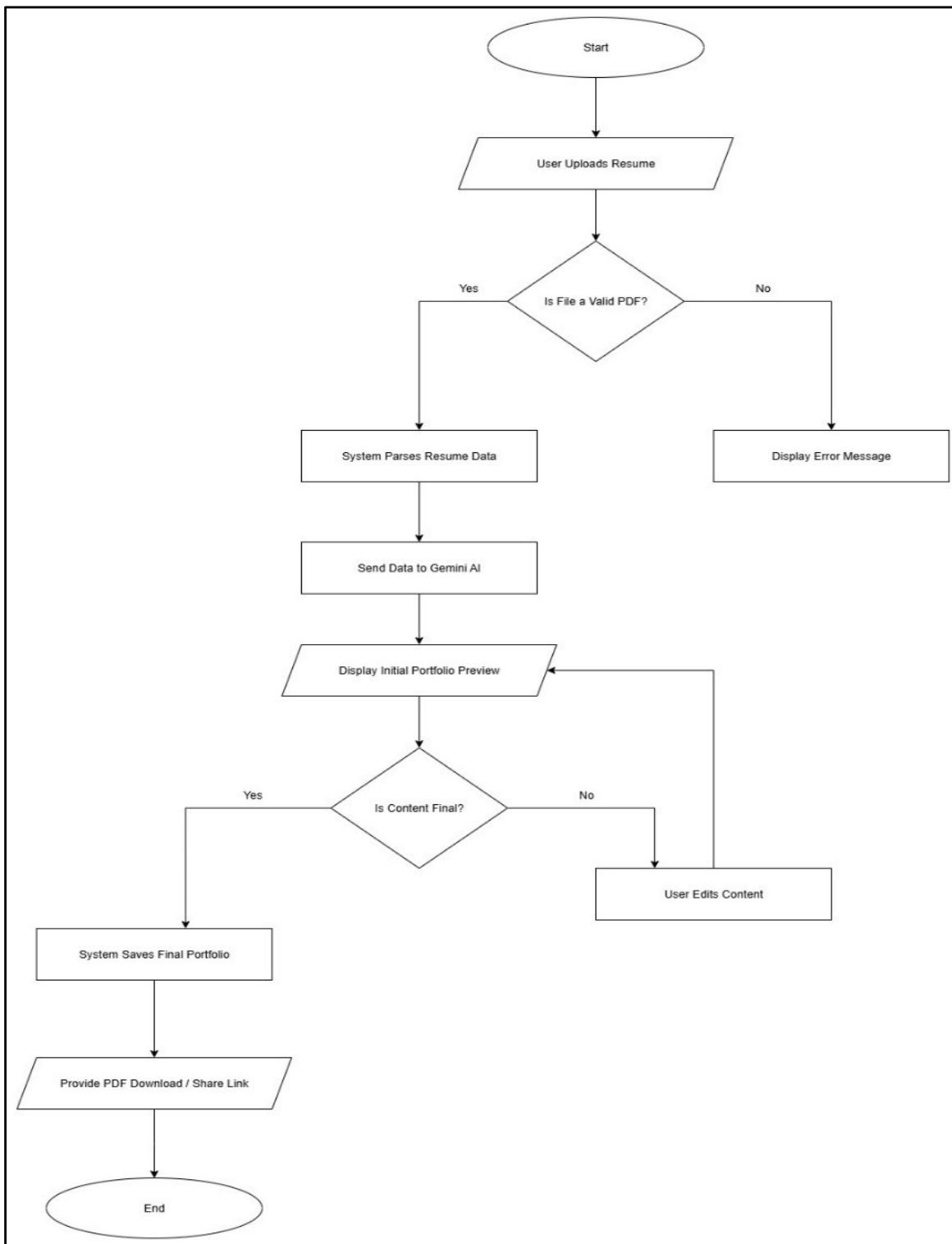
3. Relationships: Relationships describe how two entities interact.

- One-to-One (1:1)
- One-to-Many (1:N) – **most common**
- Many-to-Many (M:N)



4.2.2.1 Entity Relationship Diagram

4.2.3 Flow Chart



4.2.3.1 Flow Chart

A **Flowchart** is a visual representation of the step-by-step workflow of a system. It uses standardized symbols such as ovals (start/end), rectangles (processes), diamonds (decisions), and arrows (flow direction) to illustrate how data moves and how different operations are executed in sequence. Flowcharts help developers and stakeholders clearly understand how the system behaves from the first user action until the final output.

Purpose of the Flowchart

- To show the complete functional flow of the application from start to end.
- To help understand the order of operations performed by the system.
- To identify key decision points such as file validation and authentication.
- To simplify complex processes like AI analysis and customization into clear steps.
- To guide developers during coding and debugging by providing a visual blueprint.

Explanation of Flowchart Steps:

1. Start & Login: The process begins when the user logs into the system or creates a new account. If authentication is successful, the user is redirected to the main dashboard.
2. Upload Resume: The user selects and uploads their resume in PDF format. The system checks whether the uploaded file is valid. If the file is not a PDF, the system displays an error and asks for a valid resume.
3. Resume Parsing: A valid PDF is processed through PDFPlumber, which extracts the text and separates important sections like skills, experience, projects, and education.
4. Send to AI: The extracted text is then sent to the Gemini AI model, which analyzes the information and generates polished, structured portfolio content.
5. Receive AI Output: AI sends back summarized sections including career summary, skills, project descriptions, and experience details, which are prepared for user editing.
6. Portfolio Customization: The user enters the customization screen where they can:

- Edit or rewrite AI-generated content
- Reorder sections using drag-and-drop
- Apply themes and colors
- Add custom sections

All these actions update the preview instantly.

7. Real-Time Preview: The system shows a live preview of the portfolio, helping the user visualize the final result before saving or publishing.
8. Publish/Download: After finalizing the design, the user can:
 - Publish the portfolio with a unique link
 - Download it as a print-ready A4 PDF
 - Save changes for future edits
9. End Process: The final portfolio is saved in the database, completing the workflow.

4.3 Data Dictionary

Table:

- **Users Table:**

Column Name	Data Type	Constraint	Description
id	INT	PK, AUTO_INCREMENT	Unique identifier for the user.
full_name	VARCHAR(120)	NOT NULL	The user's full name.
email	VARCHAR(120)	NOT NULL, UNIQUE	The user's email address, used for authentication.
password	VARCHAR(200)	NOT NULL	Hashed and salted password for secure login.
is_admin	BOOLEAN	DEFAULT FALSE	Flag to identify an admin user.
created_at	DATETIME	NOT NULL	Timestamp of user creation.
bio	TEXT	NULL	A short biography of the user.

- **Portfolios Table:**

Column Name	Data Type	Constraint	Description
id	INT	PK, AUTO_INCREMENT	Unique identifier for the portfolio.
user_id	INT	FK (users.id)	Foreign key linking the portfolio to a specific user.
title	VARCHAR(150)	NOT NULL	The title of the portfolio.
resume_data	TEXT	NULL	Stores all extracted resume data (skills, education, projects, etc.) and AI-generated content (summary, achievements) in a structured format like JSON.
generated_html	TEXT	NULL	The final HTML content of the generated portfolio.
theme	VARCHAR(50)	NULL	The design template or theme applied to the portfolio.
slug	VARCHAR(100)	NOT NULL, UNIQUE	A URL-friendly identifier for the portfolio.

created_at	DATETIME	NOT NULL	Timestamp of portfolio creation.
-------------------	----------	----------	----------------------------------

- **Custom_sections Table:**

Column Name	Data Type	Constraint	Description
id	INT	PK, AUTO_INCREMENT	Unique identifier for the custom section.
portfolio_id	INT	FK (portfolios.id)	Foreign key linking the section to a specific portfolio.
section_title	VARCHAR(150)	NOT NULL	The title of the custom section (e.g., "Projects," "Publications").
content	TEXT	NULL	The text or content within the section.
position	INT	DEFAULT 0	The order of the section within the portfolio (for reordering).

5. Implementation

5.1 Form Layouts

The user interface of PortfolioCraft is designed to be clean, intuitive, and modern, following the principles of responsive web design. The following are the key form layouts used in the application.

- Home page:

The screenshot shows the homepage of PortfolioCraft. At the top, there's a navigation bar with the logo "PortfolioCraft", "Features", "How It Works", "Who It's For", "Samples", "Login", and a "Sign Up Free" button. Below the navigation is a large pink header section with the title "Build Your Perfect Portfolio With AI". It includes a subtext about uploading a resume to generate a portfolio, two buttons ("Get Started - It's Free" and "See How It Works"), and a small image of a smartphone displaying AI-generated analytics. To the right of this is a white section titled "Powerful Features" with three cards: "AI-Powered Generation", "Drag-and-Drop Editor", and "Beautiful Themes". Below this is another section titled "How PortfolioCraft Works" with three numbered steps: "Upload Your Resume", "AI Generates Your Portfolio", and "Customize & Publish".

Build Your Perfect Portfolio With AI

Upload your resume and let our AI create a stunning professional portfolio in minutes. Customize with drag-and-drop and publish with one click.

[Get Started - It's Free](#) [See How It Works](#)

Powerful Features

Everything you need to create a professional portfolio that stands out

AI-Powered Generation

Upload your resume and our AI will create a complete portfolio draft in seconds, including professional summaries.

Drag-and-Drop Editor

Easily customize every section with our intuitive drag-and-drop interface. No coding required.

Beautiful Themes

Choose from professionally designed templates that adapt to your content and style preferences.

How PortfolioCraft Works

Create your perfect portfolio in just 3 simple steps

- 1** **Upload Your Resume**
Simply upload your resume in PDF or Word format. Our system will extract all the important information.
- 2** **AI Generates Your Portfolio**
Our AI analyzes your resume and creates a complete portfolio draft with professional summaries.
- 3** **Customize & Publish**
Use our editor to personalize your portfolio, then publish with one click and share your unique link.

Who Is PortfolioCraft For?

Whether you're just starting out or advancing your career, PortfolioCraft helps you showcase your story.

Students & Freshers

Display your academic projects, certifications, and early experiences with style.

Freelancers

Showcase client work, testimonials, and service offerings in one elegant page.

Job Seekers

Convert your resume into an interactive portfolio that recruiters remember.

Explore Sample Portfolios

Preview AI-crafted portfolios for different roles. Get inspired, get started!



Full Stack Developer

Modern MERN-stack portfolio with GitHub, blogs & live project links.

[View Sample](#)



UI/UX Designer

Creative, minimal portfolio with Behance and Dribbble integration.

[View Sample](#)



Computer Science Student

Resume-to-portfolio format with academic projects, hackathons & skills.

[View Sample](#)

Ready to Build Your Perfect Portfolio?

Join thousands of professionals who've transformed their resumes into stunning portfolios

[Get Started for Free](#)

PortfolioCraft

The easiest way to create a professional portfolio from your resume using AI.

Product

Features
How It Works
Templates

Resources

Blog
Help Center
Tutorials

Company

About Us
Contact
Careers

- **Sign-up/Login Form:** This form is designed with a minimalist aesthetic and animated elements to create a polished user experience. It includes fields for Email, Password, and Name (for sign-up). The layout is centered on the page and adapts gracefully to different screen sizes.

Create Your Account
Start building your professional portfolio today

Full Name: Shivam Sharma | Email Address: shivam4918@gmc

Password: *****

Very strong - excellent password!

I agree to the [Terms of Service](#) and [Privacy Policy](#)

Create Account

OR

G Google | **LinkedIn**

Already have an account? [Sign in](#)

Your Professional Journey Starts Here

Create a portfolio that gets you noticed

- ✓ AI-generated professional summaries
- ✓ Beautiful, customizable templates
- ✓ One-click publishing

Welcome Back
Login to access your portfolio dashboard

Email Address: shivam4918@gmail.com

Password: ***** | [Forgot password?](#)

Remember me

Sign In

Admin Login

OR

G Google | **LinkedIn**

Don't have an account? [Sign up](#)

Build Your Professional Identity

Showcase your skills with a beautiful portfolio

- ✓ AI-generated professional summaries
- ✓ Beautiful, customizable templates
- ✓ One-click publishing

Welcome, Rishi Sharma

Ready to create your portfolio?

Upload your resume and let our AI generate a beautiful portfolio for you.

[+ Upload Resume & Generate Portfolio](#)

Your Portfolios

- shivam sharma's Portfolio**
- Created: Sep 24, 2025
- [Preview](#) [Edit](#) [Delete](#)

[Dashboard](#)

[+ Upload Resume](#)

[Logout](#)

Rishi Sharma
shivam4918@gmail.com

Bio
I enjoy coding and creating web applications that make technology simple and useful

Links

- <https://www.linkedin.com/in/rishi-sharma-278999152>

[Edit Profile](#)

Edit Your Profile

Full Name
Rishi Sharma

Bio
I enjoy coding and creating web applications that make technology simple and useful 😊

Links (comma separated)
https://www.linkedin.com/in/rishi-sharma-278999152

Update Profile Picture
Browse... No file selected.



Update Profile

- **Resume Upload Form:** This is a simple, single-field form. It is designed to be a prominent call-to-action on the main page. The form allows users to select and upload a single file, with clear text indicating that only PDF format is supported.

Upload Your Resume

Transform your experience into a smart portfolio instantly!

Click or Drag & Drop to upload PDF
Max file size: 5MB

Generate Portfolio

Upload a well-structured resume with education and experience we'll handle the rest!

- **Portfolio Customization Form:** The Portfolio Customization Form allows users to edit AI-generated sections such as Education, Experience, Skills, and Projects. Sections can be reordered with drag-and-drop, themes and color palettes can be applied, and users can preview the final portfolio before exporting.

The screenshot displays the PortfolioCraft interface. At the top left is a 'Back' button. The main header features a profile picture of a man, the name 'Rishi Sharma', and an email address 'shivam4918@gmail.com'. Below this is a 'Choose a Theme' section with five color swatches (pink, blue, yellow, green, orange) and buttons for 'Add New Section' and 'Save Portfolio'. The interface is divided into three main sections: 'Contact', 'Objective', and 'Skills', each with a red close button. The 'Contact' section contains phone numbers, emails, and a LinkedIn link. The 'Objective' section describes the user as a highly motivated recent graduate. The 'Skills' section lists programming languages and frameworks.

Contact

Phone Numbers: +91-8469428342, +91-8690635147
 Emails: 2405112140075@paruluniversity.ac.in, riishi4918@gmail.com
 Linkedin: <https://www.linkedin.com/in/rishi-sharma-278999152>

Objective

Highly motivated and detail-oriented recent graduate with a strong academic foundation in B.C.A. Proficient in analytical thinking, communication, teamwork, with a demonstrated ability to adapt and learn quickly. Seeking to leverage academic knowledge and a proactive mindset to contribute effectively as developer and drive organizational success.

Skills

Python, PHP, HTML, CSS, SQL, Bootstrap, Javascript, Java

Education

B.C.A. (Full Time) | CGPA : 7.59 / 10
Gyan Jyot Vidyalaya, Surat 2021
12th | GSHSEB | Percentage: 57.43 / 100
Gyan Jyot Vidyalaya, Surat 2019
10th | GSHSEB | Percentage: 58.17 / 100

Achivement

GUINNESS WORLD RECORD ON PERFORMING A HEADSTAND

Interests

Journaling
writing
video editing

Certificate

ANDROID APPLICATION DEVELOPMENT-BASIC
Aggregate: 79 / 100
BIG DATA ANALYTICS
Aggregate: 95 / 100
CYBER SECURITY AND ETHICAL HACKING

Projects

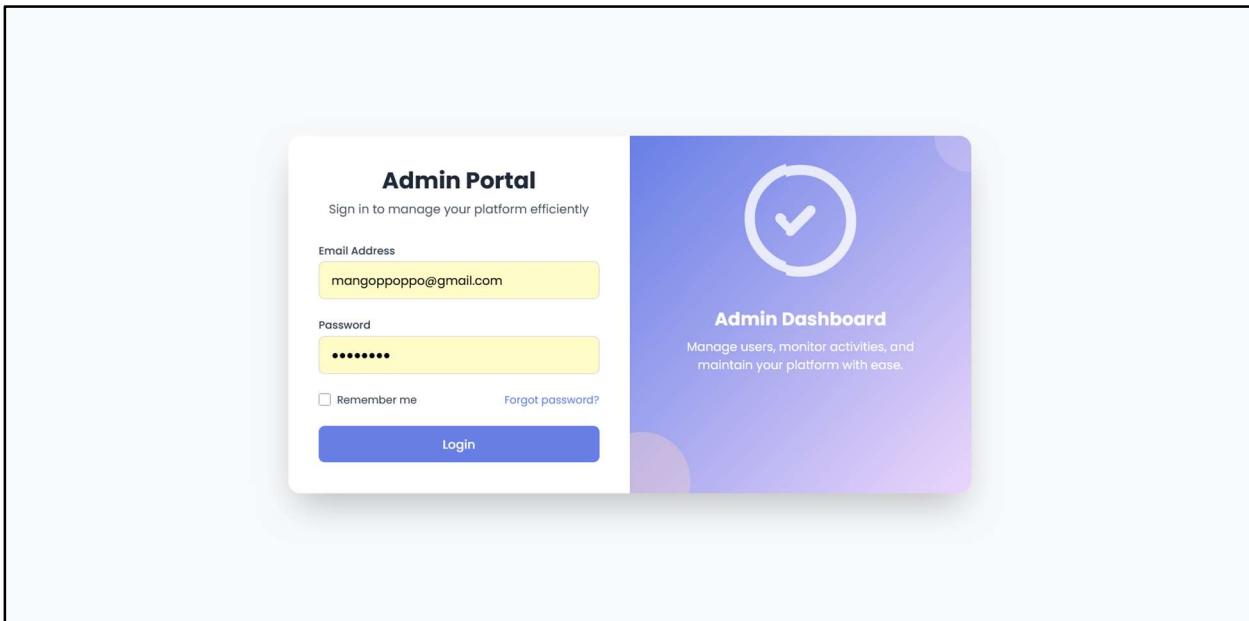
BharatSuraksha.com 20 Oct, 2023 - 20 Feb, 2024
Mentor: Prof.Khayati Kariya | Team Size: 3
Key Skills: HTML, CSS, Bootstrap, Javascript, Ajax, JQuery, MySQL
Crime Management System

- **Admin Panel:**

The Admin Panel allows administrators to manage users, portfolios, and system activities efficiently.

- **Login Page:**

- ✓ Admins enter username/email and password to access the panel.
- ✓ Secure authentication with error messages for invalid credentials.
- ✓ Responsive design for different devices.



- **Dashboard Page:**

- ✓ Main control panel showing total users, uploaded resumes, and published portfolios.
- ✓ Allows admins to view, edit, or delete user accounts.
- ✓ Provides quick insights and monitoring of system activities.

[PortfolioCraft](#)

- [Dashboard](#)
- [Users](#)
- [Portfolios](#)
- [Logout](#)

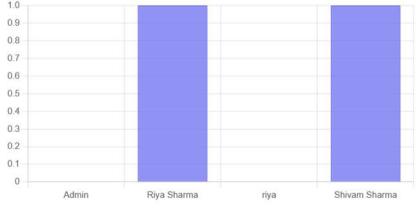
Admin Dashboard

Total Users
4

Total Portfolios
2

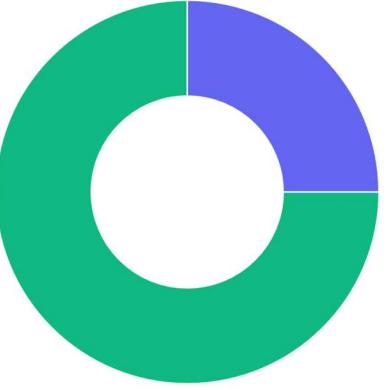
Resumes Uploaded
2

Portfolios by Users



User	Portfolios
Admin	1
Riya Sharma	1
Rya	1
Shivam Sharma	1

User Roles



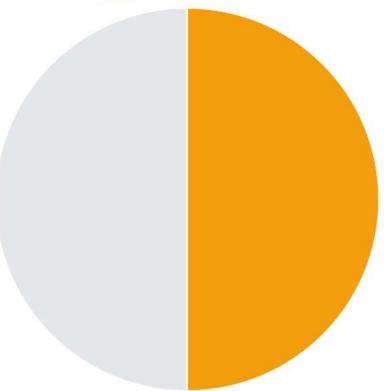
Role	Count
Admins	1
Users	3

Portfolio Growth



Date	Growth
Sep 24	1.00
Sep 24	2.00

Resume Stats



Status	Count
Uploaded	2
Not Uploaded	2

Users

User List				
Show	entries	Search:		
ID	Name	Email	Admin	Action
2	Shivam Sharma	shivam4918@gmail.com	No	<button>Delete</button>
3	Riya	rii@gmail.com	No	<button>Delete</button>
5	Riya Sharma	riyal23@gmail.com	No	<button>Delete</button>
6	Admin	mangoppoppo@gmail.com	Yes	

Showing 1 to 4 of 4 entries

Portfolios

Portfolio List				
Show	entries	Search:		
ID	Title	User	Created At	Action
9	shivam sharma's Portfolio	Shivam Sharma	Sep 24, 2025	<button>Delete</button>
10	Riya Sharma's Portfolio	Riya Sharma	Sep 24, 2025	<button>Delete</button>

Showing 1 to 2 of 2 entries

PortfolioCraft: AI-Powered Portfolio Builder

38

5.2 Report Layouts

1. Scrollable Web Layout (Online View)

This is the interactive, primary view of the portfolio.

- Structure:** A clean, modern, single-page website where content is divided into responsive Section Cards.
- Design:** Utilizes Tailwind CSS for mobile-first design and consistent typography.
- Theming:** Supports multiple themes that dynamically control the colour palette for personalised aesthetics.

The screenshot displays the PortfolioCraft platform's scrollable web layout. At the top, there is a navigation bar with the logo "PortfolioCraft" and links for "Projects", "Skills", "Education", "Contact", "Palette 3", "ToggleTheme", "ToggleLayout", "Edit", "Publish", and "PDF". Below the navigation, there is a large profile picture of a man in a suit. To the right of the profile picture, there are sections for "Education" and "Expertise". The "Education" section lists Parul University (2024-2026) and Veer Narmad South Gujarat University (2021-2024). The "Expertise" section lists Python, PHP, HTML, CSS, SQL, Bootstrap, Javascript, and Java. Further down, there are sections for "Personal Interests / Hobbies" (Cricket, Chess, Reading books), "Personal Details" (Gender: Male, Date of Birth: 11 Jul, 2003, Marital Status: Single, Known Languages: ENGLISH, HINDI, GUJARATI, Current Address: 420, Azad Bhavan Parul university vaddodara gujrat, Surat, Gujarat, India - 391760, Permanent Address: 67, Laxman nagar Near Asa Pass Dada Temple Godadara Gam Surat, Surat, Gujarat, India - 395010, Phone Numbers: +91-8469428342, +91-8690635147, Email: 240512140075@paruluniversity.ac.in, shivam4918@gmail.com), "Projects" (BharatSuraksha.com 20 Oct, 2023 - 20 Feb, 2024), "Skills" (Python, PHP, HTML, CSS, SQL, Bootstrap, Javascript, Java), and "Achievements" (GUINNESS WORLD RECORD ON PERFORMING A HEADSTAND).

2. Print and PDF Layout (A4 Format)

This professional layout is automatically generated for download, adhering to resume standards.

- Goal:** Optimized for a single A4 page using a high-density structure to maximize content.
- Structure:** Uses specific print styles to compact the layout while maintaining readability.
- Optimization:** CSS @media print rules and a Playwright scaling factor guarantee that all text and elements fit perfectly within the boundaries of a single A4 sheet.



Rishi Sharma
I enjoy coding and creating web applications that make technology simple and useful 😊
shivam4918@gmail.com

Contact Information

PRAJAPATI SHIVAM BRIJRAJ, M.C.A. - Cyber Security and Forensics - PICA, Phone: +91-8469428342, +91-8690635147, Email: 240512140075@paruluniversity.ac.in, shivam4918@gmail.com, Location: Surat, Gujarat, India - 391760, LinkedIn: <https://www.linkedin.com/in/prajapati-shivam-64746524>, Current Address: 420, Azad Bhavan Parul university voadodara gujarat, Surat, Gujarat, India - 391760, Permanent Address: 67, Laxman nagar Near Ass Pass Dada Temple Godadara Gam Surat, Surat, Gujarat, India - 395010

Assessments / Certifications

ANDROID APPLICATION DEVELOPMENT-BASIC (Aggregate: 79 / 100), BIG DATA ANALYTICS (Aggregate: 95 / 100), CYBER SECURITY AND ETHICAL HACKING (Aggregate: 82 / 100)

Known Languages

ENGLISH (Known Language), HINDI (Known Language), GUJARATI (Known Language)

Key Expertise

Python, PHP, HTML, CSS, SQL, Bootstrap, Javascript, Java

Education

Parul University (2024 - 2026) - M.C.A. - Cyber Security and Forensics - PICA | CGPA: 8.69 / 10, Veer Narmad South Gujarat University (2021 - 2024) - B.C.A. (Full Time) | CGPA : 7.59 / 10, Gyan Jyot Vidyalaya, Surat (2021) - 12th | GSHSEB | Percentage: 57.43 / 100, Gyan Jyot Vidyalaya, Surat (2019) - 10th | GSHSEB | Percentage: 58.17 / 100

Projects

BharatSuraksha.com (20 Oct, 2023 - 20 Feb, 2024) - Crime Management System,
Mentor: Prof.Khayati Kariya | Team Size: 3, Key Skills: HTML, CSS, Bootstrap, Javascript, Ajax, JQuery, MySQL, Technology Stack: PHP, MySQL, HTML, CSS, JavaScript, Bootstrap, Developed a web-based Crime Management System to efficiently manage crime records, and streamline law enforcement operations. The system enables authorized personnel to register crimes, update case statuses, and retrieve reports based on various parameters., Key Features: - User Authentication & Role Management: Secure login for administrators, police officers, and other authorized users., - Crime Reporting & Case Management: Allows users to register complaints, update case details, and track investigation progress., - Database Management: Utilized MySQL for structured storage of crime records, suspect details, and legal proceedings., - Reports & Analytics: Generated statistical reports on crime rates and trends for better law enforcement decision-making., - Responsive UI: Developed an intuitive user interface using Bootstrap for accessibility across devices.

Skills

Python, PHP, HTML, CSS, SQL, Bootstrap, Javascript, Java

Achievements

GUINNESS WORLD RECORD ON PERFORMING A HEADSTAND

1. Frontend Implementation

The frontend forms the user interface where users interact with the system.

Authentication Pages: Login and Signup pages are designed using Tailwind CSS. They provide secure access to the system and validate user inputs before processing.

Resume Upload Page: A simple form allows users to upload PDF resumes. JavaScript ensures that only valid files are accepted. This step starts the AI-based portfolio creation process.

Portfolio Editor: This editor is built using JavaScript and SortableJS for drag-and-drop section arrangement. Users can edit AI-generated text, add custom sections, and apply color themes. All changes update instantly.

Real-Time Preview: A live preview displays the portfolio exactly as it will appear when published. Tailwind CSS ensures a modern, responsive layout across all devices.

2. Backend Implementation

The backend is developed using Python Flask, handling routing, AI processing, file handling, and user authentication.

Resume Processing: PDFPlumber extracts text from the uploaded resume and prepares it for AI analysis.

AI Integration: The extracted text is sent to the Gemini AI API, which generates clean, structured portfolio content such as summary, experience, skills, and projects.

Flask Routing: Different features like uploading, editing, previewing, and publishing are handled through dedicated Flask routes.

3. Database Implementation

The system uses SQLite to store user accounts, AI-generated portfolio data, and custom sections.

Database Includes:

- **users** table for authentication
- **portfolios** table for generated content and themes
- **custom_sections** table for extra sections added by users

4. Publishing & PDF Generation

The final portfolio is published using a unique slug link that the user can share.

An A4-formatted PDF version is also generated using print-optimized CSS to maintain professional layout consistency.

5. Admin Module

The Admin Panel allows management of users, portfolios, and system activities. Admins can monitor uploaded resumes, published portfolios, and AI usage to ensure system stability.

5.3 Coding Convention (Business Logic)

1. Programming Language:

- Python 3 is used for backend logic, AI integration, and database interactions.
- JavaScript is used for frontend interactivity and drag-and-drop functionality.

2. Naming Conventions:

- **Variables:** Use lowercase with underscores (e.g., user_name, portfolio_data).
- **Functions/Methods:** Use lowercase with underscores describing the action (e.g., generate_portfolio(), upload_resume()).
- **Classes:** Use PascalCase (e.g., User, PortfolioManager).
- **Constants:** Use uppercase letters with underscores (e.g., MAX_FILE_SIZE, DEFAULT_THEME).

3. Indentation and Formatting:

- Use 4 spaces for Python indentation.
- Use consistent spacing in HTML and JavaScript for readability.
- Keep line length within 80–100 characters for better clarity.

4. Comments and Documentation:

- Add comments before each function or module explaining its purpose.
- Use inline comments for complex logic.
- Maintain consistent docstrings for Python functions using triple quotes.

5. Business Logic Implementation:

- **User Authentication:** Passwords are hashed using secure methods; login sessions are managed with Flask-Login.
- **Resume Upload:** Validate file type and size before processing.
- **AI Processing:** Extract text from PDF using PDFPlumber, then generate summaries and bullet points via Gemini AI.
- **Portfolio Editor:** Drag-and-drop section reordering is implemented using SortableJS.
- **Theme and Customization:** Apply selected color themes and layout dynamically using Tailwind CSS.
- **Portfolio Publishing:** Generate unique shareable links and store them in the database.

6. Error Handling:

- Handle file upload errors, AI service errors, and database exceptions gracefully.
- Provide clear messages to users for invalid actions or failed operations.

7. Security Practices:

- Use hashed passwords and secure session management.
- Validate all user inputs to prevent injection attacks.
- Ensure secure API communication with Gemini AI.

6. Testing

6.1 Test Strategy

The testing strategy for PortfolioCraft is based on a combination of unit testing, integration testing, and user acceptance testing to ensure the application is reliable, secure, and meets user requirements. We will use a dedicated test server for pre-deployment testing and a Continuous Integration/Continuous Deployment (CI/CD) pipeline for automated testing and deployment.

Unit Testing: Each module and function will be tested in isolation. For example, a test case will check if PDFPlumber correctly extracts data from a sample PDF resume or if the Gemini AI integration returns valid content.

Integration Testing: This will verify that different modules work together seamlessly. A test will simulate the full user flow, from uploading a resume to generating and previewing a portfolio.

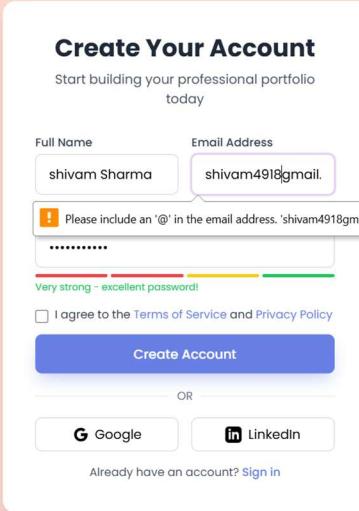
User Acceptance Testing (UAT): A group of target users (students and professionals) will be asked to test the application in a real-world scenario to provide feedback on usability and functionality.

6.2 Test Cases

Here are some sample test cases to be performed:

Test Case ID	Test Case Objective	Test Steps	Expected Result
TC-001	Verify successful user registration.	1. Navigate to the sign-up page. 2. Fill in all required fields. 3. Click "Sign up".	The user is registered, and a success message is displayed.
TC-002	Verify valid resume upload.	1. Log in. 2. Navigate to the upload form. 3. Upload a valid PDF file.	The file is uploaded, and the system begins parsing the data.
TC-003	Verify invalid file type upload.	1. Log in. 2. Navigate to the upload form. 3. Upload a non-PDF file (e.g., a .docx or .jpeg).	An error message is displayed, and the file is not uploaded.
TC-004	Verify AI content generation.	1. Upload a resume. 2. Wait for AI processing.	The AI generates a summary and content for all sections, which are then displayed in the real-time preview.

TC-005	Verify drag-and-drop functionality.	1. Open the portfolio editor. 2. Drag a section (e.g., Skills) to a new position.	The section's order is updated in the real-time preview.
--------	-------------------------------------	---	--

TC-001


Create Your Account
Start building your professional portfolio today

Full Name: shivam Sharma
Email Address: shivam4918@gmail.
! Please include an '@' in the email address. 'shivam4918@gmail.com' is missing an '@'.

Password:
Very strong - excellent password!

I agree to the [Terms of Service](#) and [Privacy Policy](#)

Create Account

OR

G Google **LinkedIn**

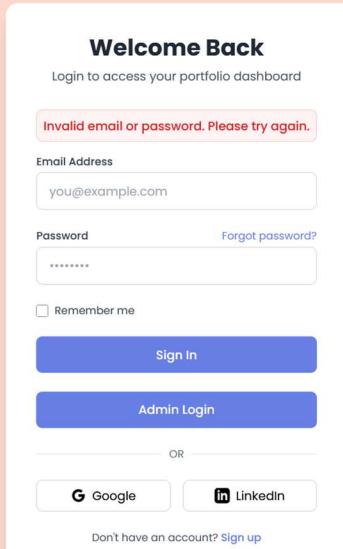
Already have an account? [Sign in](#)



Your Professional Journey Starts Here

Create a portfolio that gets you noticed

- ✓ AI-generated professional summaries
- ✓ Beautiful, customizable templates
- ✓ One-click publishing



Welcome Back
Login to access your portfolio dashboard

Invalid email or password. Please try again.

Email Address: you@example.com

Password:
[Forgot password?](#)

Remember me

Sign In

Admin Login

OR

G Google **LinkedIn**

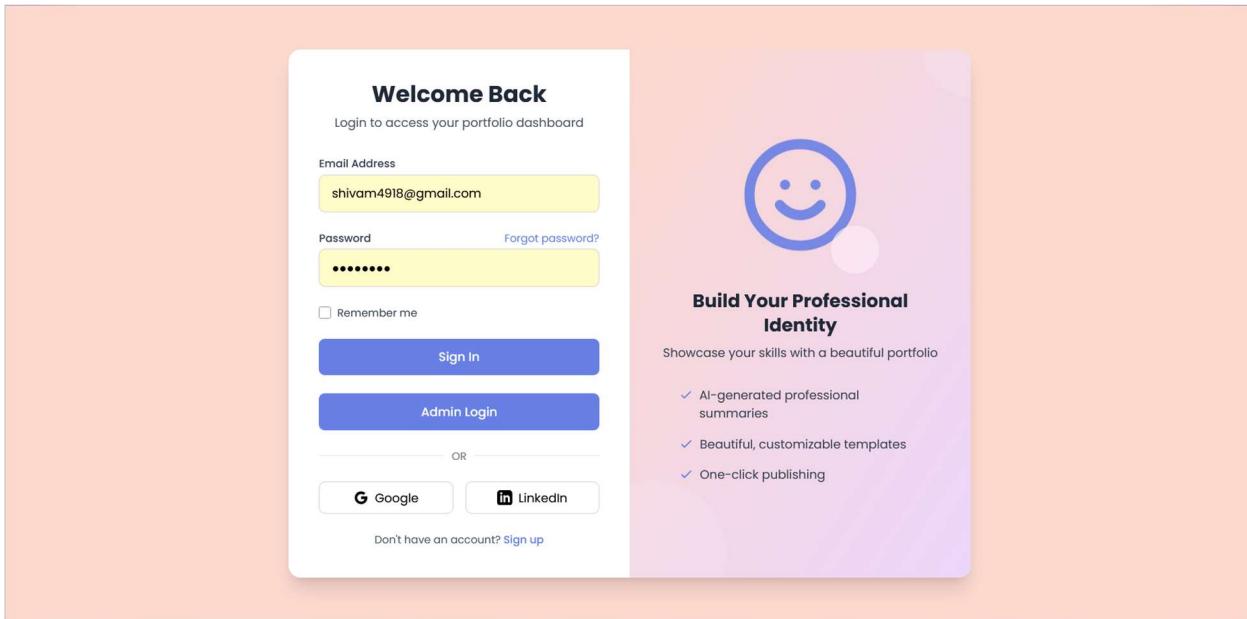
Don't have an account? [Sign up](#)



Build Your Professional Identity

Showcase your skills with a beautiful portfolio

- ✓ AI-generated professional summaries
- ✓ Beautiful, customizable templates
- ✓ One-click publishing



The dashboard for Rishi Sharma shows a profile picture and the message 'Logged in successfully!'. The main area displays a 'Welcome, Rishi Sharma' greeting with a clapping emoji. Below it is a call-to-action 'Ready to create your portfolio?' with a 'Upload Resume & Generate Portfolio' button. A sidebar on the left includes links for Dashboard, Upload Resume, and Logout.

Welcome, Rishi Sharma 🎉

Ready to create your portfolio?

Upload your resume and let our AI generate a beautiful portfolio for you.

Logged in successfully!

Rishi Sharma
shivam4918@gmail.com

Dashboard

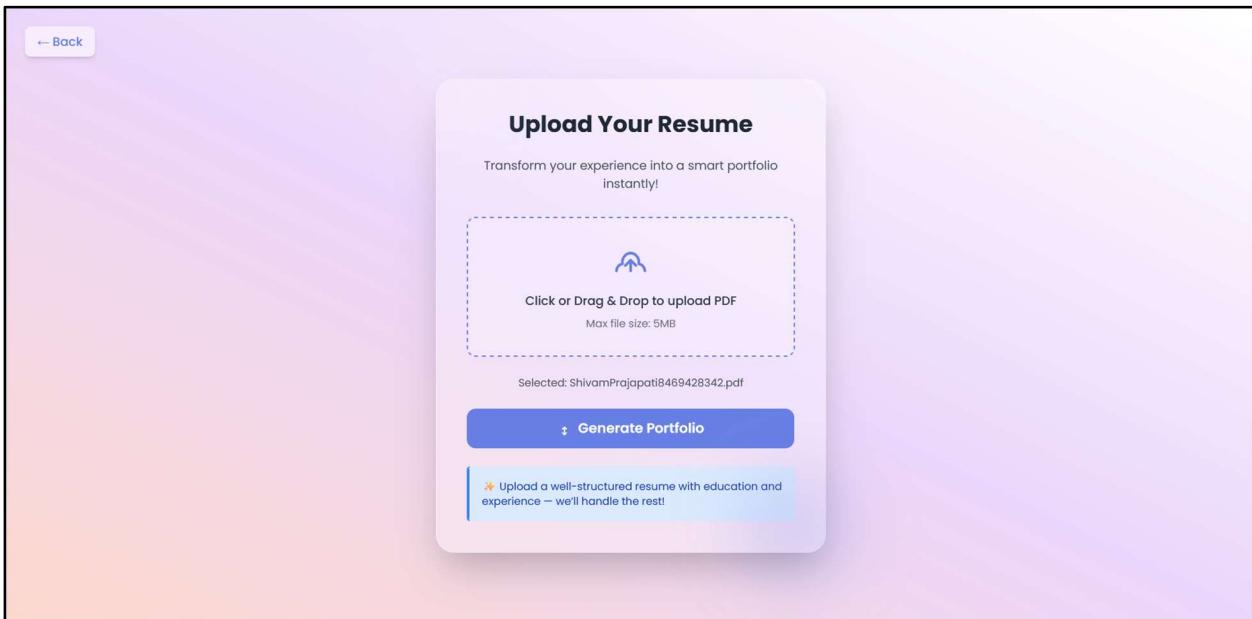
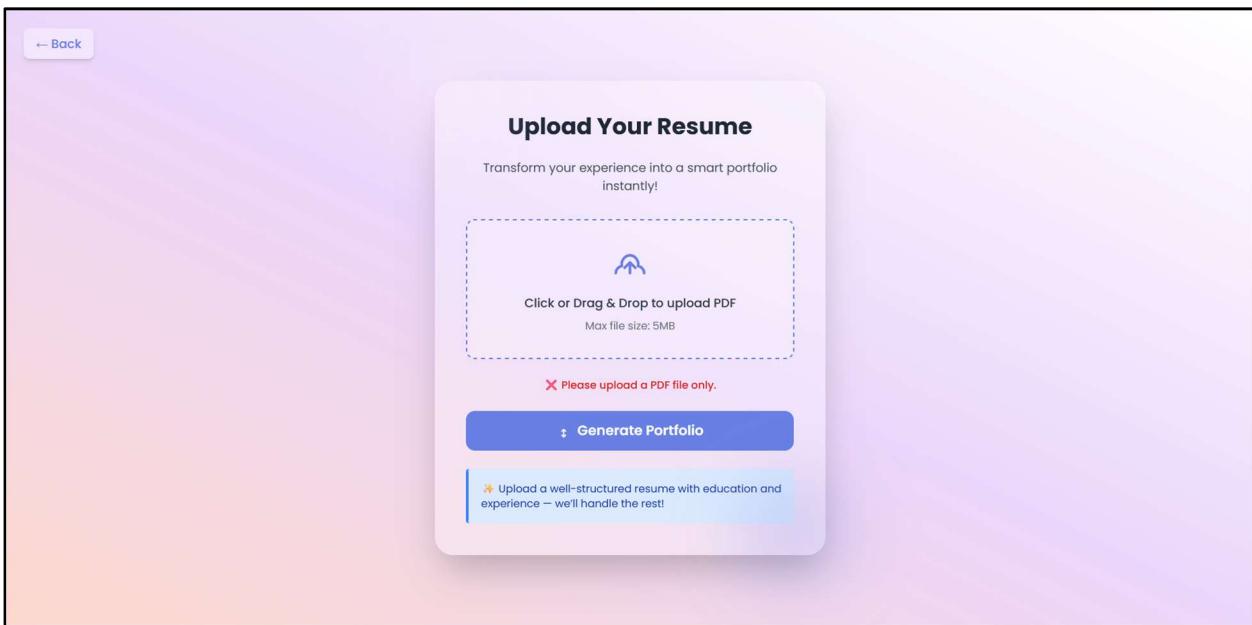
+ Upload Resume

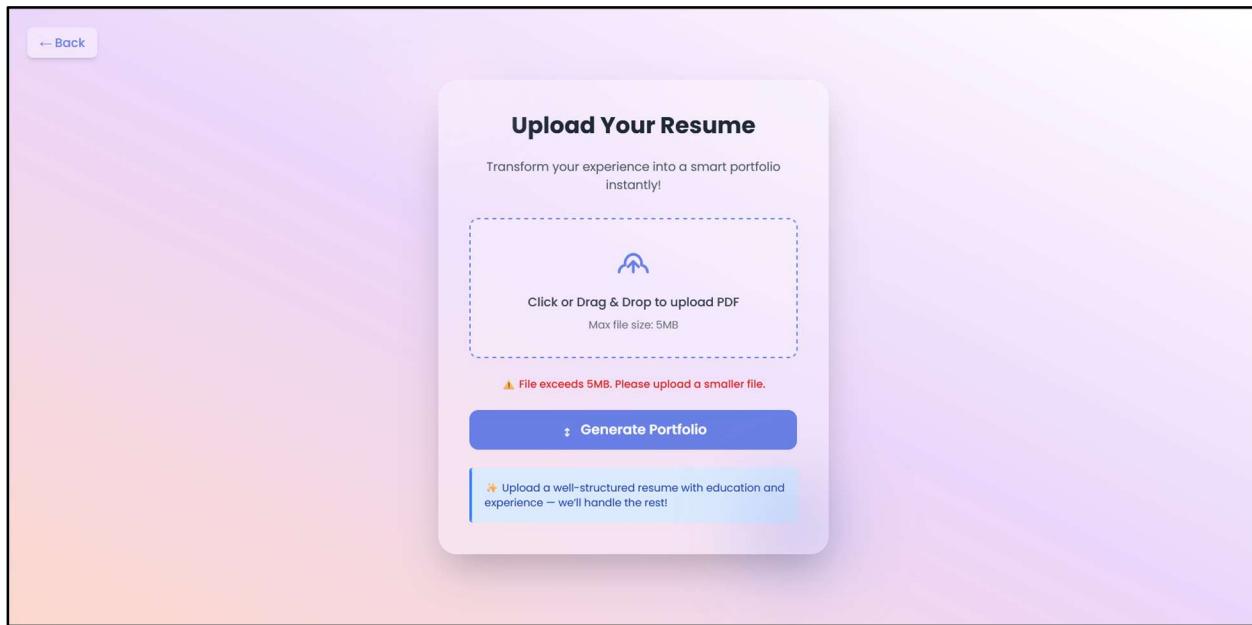
Logout

Your Portfolios

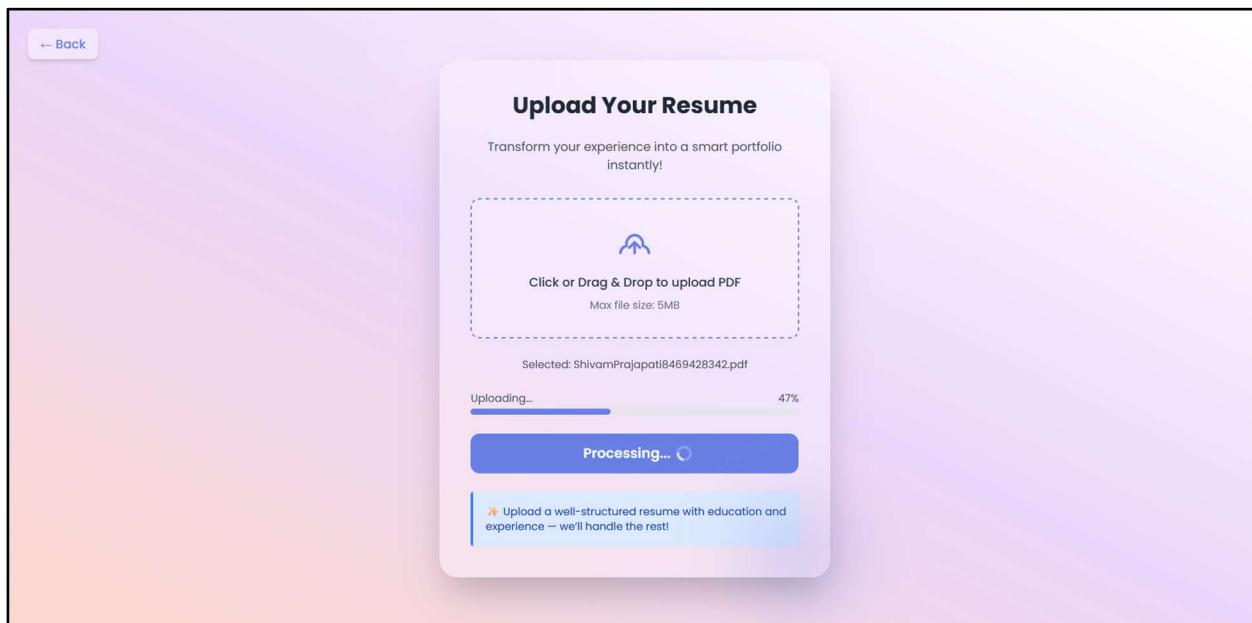
shivam sharma's Portfolio
Created: Sep 24, 2025

Preview Edit Delete

TC-002**TC-003**



TC-004



The screenshot displays the PortfolioCraft AI-Powered Portfolio Builder interface. At the top, there is a header bar with a back button and a search bar. Below the header, the user's profile is shown, featuring a circular profile picture of Rishi Sharma, his name "Rishi Sharma" in bold blue text, and his email "shivam4918@gmail.com". A "Choose a Theme" section allows the user to select from five color-coded themes (pink, blue, yellow, green, red) and includes buttons for "Add New Section" and "Save Portfolio".

The main content area contains several sections:

- Contact**: Includes contact information: Phone Numbers: +91-8469428342, +91-8690635147; Emails: 2405112140075@paruluniversity.ac.in, rishi4918@gmail.com; LinkedIn: <https://www.linkedin.com/in/rishi-sharma-278999152>
- Objective**: Describes the user as highly motivated and detail-oriented recent graduate with a strong academic foundation in B.C.A. Proficient in analytical thinking, communication, teamwork, with a demonstrated ability to adapt and learn quickly. Seeking to leverage academic knowledge and a proactive mindset to contribute effectively as developer and drive organizational success.
- Skills**: Lists skills: Python, PHP, HTML, CSS, SQL, Bootstrap, Javascript, Java.
- Education**: Details education from Parul University (2024-2026), M.C.A. - Cyber Security and Forensics - PICA | CGPA: 8.69 / 10, Veer Narmad South Gujarat University (2021-2024), B.C.A. (Full Time) | CGPA: 7.59 / 10.
- Achievement**: Mentions a GUINNESS WORLD RECORD ON PERFORMING A HEADSTAND.
- Interests**: Lists interests: Journaling, writing, video editing.
- Certificate**: Shows certificates in ANDROID APPLICATION DEVELOPMENT-BASIC (Aggregate: 79 / 100) and BIG DATA ANALYTICS (Aggregate: 95 / 100).
- Projects**: Details a project titled "BharatSuraksha.com" from Oct 2023 to Feb 2024, mentored by Prof.Khayati Karjya, team size 3, with key skills: HTML, CSS, Bootstrap, Javascript, Ajax, JQuery, MySQL, Crime Management System.

TC-005

Skills

Python, PHP, HTML, CSS, SQL, Bootstrap, Javascript, Java

Objective

Highly motivated and detail-oriented recent graduate with a strong academic foundation in B.C.A. Proficient in analytical thinking, communication, teamwork, with a demonstrated ability to adapt and learn quickly. Seeking to leverage academic knowledge and a proactive mindset to contribute effectively as developer and drive organizational success.

Education

Parul University 2024 - 2026
Certificate: Cyber Security and Forensics - PICA | CGPA: 8.69 / 10
 Veer Narmad South Gujarat University 2021 - 2024
 B.C.A. (Full Time) | CGPA: 7.59 / 10
 M.C.A. - Cyber Security and Forensics - PICA | CGPA: 8.69 / 10
 Veer Narmad South Gujarat University 2021 - 2024
 B.C.A. (Full Time) | CGPA: 7.59 / 10
 Guru Nanak Dev University, Amritsar, 2021

Certificate

Aggregate: 75 / 100
 BIG DATA ANALYTICS
 Aggregate: 95 / 100
 CYBER SECURITY AND ETHICAL HACKING
 Aggregate: 82 / 100

Projects

BharatSuraksha.com 20 Oct, 2023 - 20 Feb, 2024
 Mentor: Prof.Khayati Kariya | Team Size: 3
 Key Skills: HTML, CSS, Bootstrap, Javascript, Ajax, JQuery, MySQL
 Crime Management System
 Technologies: Node.js, MongoDB, Express.js, React.js, PostgreSQL

Interest

(Empty box)

7. Future Enhancement

The following features are planned for future versions of PortfolioCraft to enhance its functionality and user value:

Multi-language Support: Expand the application to support resume parsing and content generation in multiple languages.

PDF Download as per Layout: Provide an option for users to download their portfolio as a PDF, matching the selected theme and design.

Additional Themes and Templates: Regularly add new, professionally designed themes to provide users with more customization options.

Video and Media Integration: Allow users to embed videos from YouTube or Vimeo, or upload images directly to showcase their projects more effectively.

Custom Domain Support: Enable users to link their custom domains (e.g., www.yourname.com) to their published portfolio.

Analytics Dashboard: Implement a simple dashboard for users to track views and engagement on their published portfolios.

Project Showcase and Collaboration: Create a public gallery where users can showcase their portfolios and potentially collaborate on projects.

8. Bibliography

- Python Software Foundation. 'Python Language Reference.' Available at: <https://docs.python.org/3/>
- Pallets Project. 'Flask Documentation.' Available at: <https://flask.palletsprojects.com/en/3.0.x/>
- Tailwind Labs. 'Tailwind CSS Documentation.' Available at: <https://tailwindcss.com/docs>
- SortableJS. 'SortableJS Documentation.' Available at: <https://sortablejs.github.io/Sortable/>
- Google. 'Gemini API Overview.' Available at: https://ai.google.dev/docs/gemini_api_overview
- PDFPlumber. 'PDFPlumber: Extract Text, Tables, and Metadata from PDFs.' Available at: <https://github.com/jrvine/pdfplumber>
- SQLite Consortium. 'SQLite Documentation.' Available at: <https://www.sqlite.org/index.html>
- Mozilla Developer Network (MDN). 'HTML5 Reference and Guide.' Available at: <https://developer.mozilla.org/en-US/docs/Web/HTML>
- Mozilla Developer Network (MDN). 'JavaScript Guide.' Available at: <https://developer.mozilla.org/en-US/docs/Web/JavaScript/Guide>
- OpenAI. 'Best Practices for AI-Powered Web Applications.' Available at: <https://platform.openai.com/docs>
- W3C. 'Web Accessibility Guidelines (WCAG).' Available at: <https://www.w3.org/WAI/standards-guidelines/wcag/>
- Bootstrap Team. 'Web Design Responsiveness Principles.' Available at: <https://getbootstrap.com/docs/5.0/layout/overview/>
- Flask-Login. 'User Session Management for Flask.' Available at: <https://flask-login.readthedocs.io/en/latest/>
- Jinja2. 'Jinja2 Templating Engine Documentation.' Available at: <https://jinja.palletsprojects.com/en/3.1.x/>
- Werkzeug. 'WSGI Utility Library for Python.' Available at: <https://werkzeug.palletsprojects.com/>
- GitHub. 'Version Control and Collaboration Documentation.' Available at: <https://docs.github.com/en>
- Microsoft. 'Visual Studio Code Documentation.' Available at: <https://code.visualstudio.com/docs>
- Google Cloud. 'AI and Machine Learning Documentation.' Available at: <https://cloud.google.com/learn>
- Stack Overflow. 'Developer Community Documentation and Q&A.' Available at: <https://stackoverflow.com/>
- Real Python. 'Flask and Python Tutorials for Developers.' Available at: <https://realpython.com/>