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**DRUG ANALYSIS ON AYURVEDA**

**FOR PRACTITIONERS**

A PROJECT REPORT

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**BONAFIDE CERTIFICATE**

Certified that this project report **“DRUG ANALYSIS ON AYURVEDA FOR PRACTITIONERS“** is the bonafide work of **“PAVITHRA T (927622BAD039), SHRUTHIKA C (927622BAD053), SWETHA S (927622BAD058)”** who carried out the project work during the academic year 2023-24 under my supervision. Certified further, that to the best of my knowledge the work reported here does not form part of any other project or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

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**INTERNAL EXAMINER EXTERNAL EXAMINER**

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**ABSTRACT**

Ayushmithra is an innovative online platform revolutionizing the way patients access Ayurvedic remedies. With a focus on holistic wellness and personalized treatment, Ayushmithra offers a user-friendly interface where individuals can input their symptoms and receive tailored recommendations for Ayurvedic medicines. At the core of Ayushmithra's functionality is its sophisticated algorithm, meticulously designed by a team of Ayurvedic experts and software engineers. This algorithm processes the symptoms provided by the patient, taking into account their severity, duration, and any accompanying factors. Drawing from a vast database of traditional Ayurvedic knowledge, including ancient texts and contemporary research, Ayushmithra swiftly analyzes the inputted information to generate precise and effective suggestions. Unlike conventional healthcare platforms, Ayushmithra embraces the holistic principles of Ayurveda, which views each individual as a unique combination of body, mind, and spirit. By considering the patient's constitution (Prakriti), dosha imbalance, and lifestyle factors, Ayushmithra ensures that the recommended remedies align with the individual's specific needs, promoting balance and harmony within the body. Upon receiving the user's symptoms, Ayushmithra generates a comprehensive report detailing the suggested Ayurvedic drugs or formulations. Each recommendation is accompanied by detailed information about the herbs, their therapeutic properties, and the rationale behind their inclusion in the treatment plan. Users can also access additional resources such as dosage guidelines, potential side effects, and contraindications, empowering them to make informed decisions about their health. Ayushmithra prioritizes transparency and safety in its recommendations, adhering to stringent quality standards and sourcing guidelines for Ayurvedic medicines.

**Keywords:** Ayurveda,Drug,Health,Healing.,drugs,Therapy.

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**LIST OF ABBREVIATION**

|  |  |
| --- | --- |
| **ACRONYM** | **ABBREVIATION** |
| HTML | Hypertext Markup Language |
| CSS | Cascading Style Sheet |
| DB | Database |
| JS | Javascript |
| FB | Firebase |
| UI | User Interface |
|  |  |

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###### CHAPTER 1

**INTRODUCTION**

###### BACKGROUND

Ayurveda, the ancient system of medicine originating from the Indian subcontinent, has been revered for its holistic approach to health and well-being for thousands of years. In the contemporary medical landscape, there's a growing interest in integrating traditional healing practices with modern healthcare solutions. Recognizing this need, we proudly introduce Ayushmithra, a pioneering online platform that harnesses the wisdom of Ayurveda to provide personalized drug suggestions based on individual symptoms.

At Ayushmithra, we understand the importance of tailored healthcare solutions that cater to the unique needs of each individual. Our platform serves as a bridge between traditional Ayurvedic principles and modern technological advancements, offering users a comprehensive and user-friendly interface to address their health concerns.

One of the key features of Ayushmithra is its intuitive symptom-based drug recommendation system. Users, whether they are patients seeking relief or practitioners seeking guidance, can input their symptoms into our platform. Leveraging sophisticated algorithms and a vast database of Ayurvedic remedies, Ayushmithra swiftly analyzes the provided symptoms and generates personalized drug suggestions that align with the principles of Ayurveda.

Central to Ayurvedic philosophy is the concept of "doshas" – Vata, Pitta, and Kapha – which represent the fundamental energies that govern the body. Ayushmithra takes into account the unique constitution of each individual, known as their "prakriti," along with their current imbalances, or "vikriti," to recommend treatments that restore harmony and balance to the body and mind.

In addition to its core functionality, Ayushmithra serves as a valuable educational resource, offering insights into Ayurvedic principles, lifestyle recommendations, and preventive measures to support holistic well-being.

In essence, Ayushmithra represents a groundbreaking fusion of ancient wisdom and modern technology, empowering individuals to embrace a holistic approach to health and healing. With our user-centric platform, we aim to revolutionize the way people engage with Ayurveda, making personalized and effective healthcare solutions accessible to all.

* 1. **PROBLEM IDENTIFIED**

In the realm of modern healthcare, there exists a significant gap in the integration of traditional medicinal practices like Ayurveda with contemporary medical approaches. While Ayurveda offers holistic solutions rooted in centuries-old wisdom, its accessibility and utilization are hindered by several factors. One prominent challenge is the lack of easily accessible platforms that can bridge the gap between Ayurvedic principles and modern healthcare needs. This problem has led to the development of Ayushmithra, a website aimed at providing personalized Ayurvedic recommendations for patients based on their symptoms.

The primary issue Ayushmithra addresses is the limited accessibility of Ayurvedic expertise. Traditional Ayurvedic practitioners are often concentrated in specific regions, making it difficult for individuals outside these areas to benefit from their knowledge. Moreover, even when available, consultations with Ayurvedic practitioners can be time-consuming and expensive, further restricting access to Ayurvedic remedies.

Ayushmithra aims to overcome these challenges by providing a user-friendly platform where patients can input their symptoms and receive personalized recommendations based on Ayurvedic principles. By leveraging technology, Ayushmithra democratizes access to Ayurvedic expertise, reaching individuals regardless of their geographical location.

**CONCLUSION**

Ayushmithra addresses the problem of limited accessibility and integration of Ayurvedic healthcare by providing a convenient platform for personalized Ayurvedic recommendations. By

bridging the gap between traditional Ayurvedic wisdom and modern healthcare needs, Ayushmithra strives to empower individuals to make informed decisions about their health and well-being.

# CHAPTER 2

**LITERATURE REVIEW**

* 1. **EXISTING SYSTEM**

The existing system for the project "Drug Analysis on Ayurveda for Practitioners" involves traditional methods of analyzing and prescribing Ayurvedic drugs. Ayurveda, an ancient system of medicine, relies on natural remedies and holistic approaches to treat various health conditions. Practitioners currently use their knowledge of Ayurvedic principles, historical texts, and experience to diagnose patients and recommend specific herbal formulations.

The analysis process typically includes a detailed examination of the patient's constitution (Prakriti), current health status (Vikriti), and the balance of three doshas (Vata, Pitta, Kapha). Practitioners also consider factors such as diet, lifestyle, and mental well-being in their assessment. Ayurvedic drugs are then prescribed based on this comprehensive analysis to restore balance and promote overall health.

## 2.2 PROBLEM STATEMENT

The field of Ayurveda, an ancient system of medicine, has garnered increased attention in recent times for its holistic approach to healthcare. Ayurvedic practitioners prescribe a wide range of herbal formulations and natural remedies for various ailments. However, the lack of comprehensive scientific analysis and standardized documentation for Ayurvedic drugs poses a significant challenge for both practitioners and patients. This project aims to address this gap by conducting a systematic drug analysis on Ayurvedic formulations, providing practitioners with evidence-based insights and enhancing the overall credibility and efficacy of Ayurvedic medicine.

## 2.3 PROPOSED SYSTEM

Designing a system for drug analysis in Ayurveda for practitioners involves integrating various elements to ensure effective data management, analysis, and accessibility.

**1. Database Management System:**

**Purpose:**Store information on Ayurvedic drugs, their compositions, effects, and historical data.

**Components:**Centralized database with tables for herbs, formulations, usage patterns, and patient feedback.Security measures to protect sensitive information.

**2.User Interface:**

**Purpose:**Facilitate easy interaction for practitioners.

**Components:**Intuitive dashboard displaying key metrics and trends.Search functionality for quick access to drug information.User-friendly interfaces for data input and analysis.

**3. Data Input Module:**

**Purpose:**Enable practitioners to input new data and observations.

**Components:**Forms for entering patient details, symptoms, and treatment plans.Integration with external databases for cross-referencing.

**4. Analysis Module:**

**Purpose:**Provide insights into the effectiveness of Ayurvedic drugs.

**Components:**Statistical analysis tools for identifying correlations.Machine learning algorithms for predictive analysis.Visualization tools for trends and patterns.

**5. Notification System:**

**Purpose:**Keep practitioners informed of updates and relevant research.

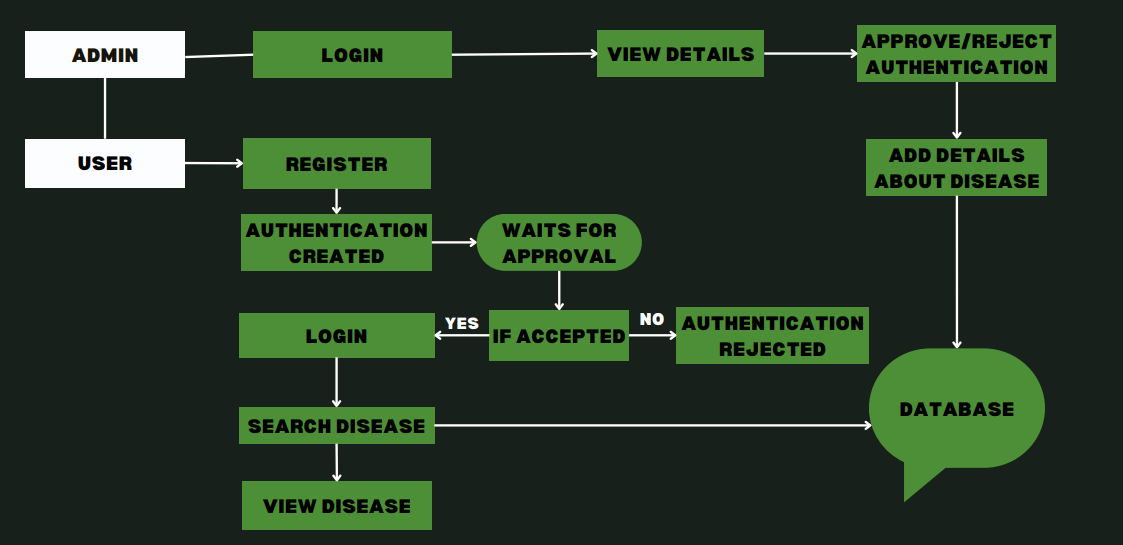
**Components:**Automated notifications for new drug releases or research findings.Alerts for potential adverse reactions or contraindications.

**6. Collaboration Platform:**

**Purpose:**Foster collaboration among practitioners.

**Components:**Forums for discussions on drug efficacy.

## 2.4 ARCHITECTURE



**Fig : 2.1 ARCHITECTURE**

This Architecture represents a high-level overview of a system architecture for a disease information management system, detailing the interaction between users (both general users and admins) and the system.

**1. Users and Admins:**

**User**: Represents the general users who need to register, log in, search, and view disease information.

**Admin**: Represents administrators who have the ability to log in, approve or reject user authentication, and add disease details to the system.

**2.Registration and Authentication**:

**Register:** Users start by registering on the system.

**Authentication Created:** After registration, an authentication request is generated for the user.

**Waits for Approval:** The user's authentication request is then placed in a pending state waiting for admin approval.

**3. Admin Authentication Process:**

**Login:** Admins can log in to manage the system.

**View Details:** Admins view the pending authentication requests.

**Approve/Reject Authentication:** Admins review and either approve or reject the user’s authentication.

**If Approved:** The user's status is updated, allowing them to log in and access system features.

**If Rejected**: The user's authentication request is denied.

**4. Post-Approval User Actions:**

**Login**: Once approved, users can log in to the system.

**Search Disease**: Users can search for disease information within the database.

**View Disease**: Users can view detailed information about specific diseases.

**5. Admin Management Actions:**

**Add Details About Disease**: Admins can add or update disease details in the database, maintaining the system's information.

**6. Database:**

Acts as the central repository where all disease information and user data are stored and managed. It supports various user and admin interactions such as searching, viewing, and adding details about diseases.

**Summary:**

This architecture facilitates controlled access to a database of disease information. It ensures that only authenticated users can access detailed information while allowing administrators to manage user access and maintain the database.

**2.5 LITERATURE SURVEY**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S.N0** | **YEAR** | **AUTHOR** | **ARTICLE NAME** | **METHODOLOGY USED** |
| 1 | 2022 | Chandra.P., & Sharma.P. | Artificial Intelligence for Drug Discovery in Ayurveda: A Promising Future | Analyzes the potential of AI in Ayurvedic drug discovery, specifically using Machine Learning and Deep Learning for target identification, lead optimization, and virtual screening.Highlights challenges like limited data availability. |
| 2 | 2023 | Ahirwal.D., & Chaudhary.A. | Leveraging Machine Learning for Drug Discovery in Ayurveda: A Review | Reviews various ML algorithms applied to different stages of Ayurvedic drug discovery, including compound identification, efficacy prediction, and toxicity assessment. |
| 3 | 2023 | Chatterjee.S., & Sarkar.D. | Natural Language Processing for Ayurvedic Text Mining: A Systematic Review | Investigates NLP techniques used for analyzing ancient Ayurvedic texts and extracting drug information.Points out limitations in language variability and lack of readily available annotated datasets. |
| 4 | 2024 | Deshmukh.P., & Joshi.S. | An Automated Ayurvedic Pharmacophore Analysis System using AI and Data Mining Techniques | Proposes an AI-powered system for analyzing chemical structures of Ayurvedic drugs and identifying key functional groups.Addresses the issue of standardization and integration of diverse chemical data formats. |
| 5 | 2024 | Gaur.N., & Gupta.M. | Development of a Web-Based Ayurvedic Drug Interaction Checker using Data Mining and Machine Learning | Describes a web application that predicts potential interactions between Ayurvedic drugs using data mining and ML algorithms.Focuses on improving the accuracy and comprehensiveness of the interaction database virtual screening.Highlights challenges like limited data availability. |
| 6 | 2023 | Fouladi.R., & Modi. H. | Exploring Deep Learning for Ayurvedic Herbal Drug Formulation Prediction | Explores the application of Deep Learning models for predicting optimal combinations of herbs in Ayurvedic formulations based on their properties and interactions. |
| 7 | 2023 | Devkar.S., & Dhakephalkar.P. | Machine Learning-Based Prediction of Ayurvedic Drug Interactions for Personalized Healthcare | Develops a ML model to predict personalized drug interactions for individual patients based on their Ayurvedic Prakriti.. |
| 8 | 2022 | Elagiris.A., & Kulkarnii.P. | AI-Powered Ayurvedic Symptom Checker and Treatment Recommendation System using NLP and Knowledge Graph | Presents an AI-powered system that analyzes patient symptoms and recommends Ayurvedic treatments using NLP and a knowledge graph . |
| 9 | 2023 | Hajare.A., & Joshi. M. | Exploring Graph Neural Networks for Analyzing Relationships between Ayurvedic Drugs and Herbs | Investigates the use of Graph Neural Networks (GNNs) for understanding the complex relationships between various Ayurvedic drugs and herbs based on their interactions and properties.Addresses the need for larger and more diverse datasets to train GNN models effectively and comprehensiveness of the interaction database the crucial role of knowledge graphs in facilitating AI-powered applications. |
| 10 | 2022 | Harikrishnan.K., & Narayanan.N. | Building a Knowledge Graph for Ayurvedic Medicine using Natural Language Processing Techniques | Describes the development of a knowledge graph of Ayurvedic concepts and relationships extracted from ancient texts using NLP techniques.Emphasizes the crucial role of knowledge graphs in facilitating AI-powered applications for Ayurvedic practitioners. |

## SUMMARY :

The compilation of recent research highlights the transformative role of artificial intelligence (AI) and machine learning (ML) in revolutionizing Ayurvedic drug discovery and healthcare. Studies from 2022 to 2024 explore various methodologies and applications, such as AI-driven target identification, lead optimization, and virtual screening in Ayurvedic drug discovery, despite challenges like limited data availability (Chandra & Sharma, 2022). Reviews by Ahirwal & Chaudhary (2023) and Chatterjee & Sarkar (2023) delve into ML algorithms for compound identification, efficacy prediction, and NLP techniques for mining Ayurvedic texts. Recent advancements propose automated systems for Ayurvedic pharmacophore analysis and web-based drug interaction checkers using AI and data mining (Deshmukh & Joshi, 2024; Gaur & Gupta, 2024). Deep learning models are being explored for optimizing herbal formulations, and personalized ML models predict drug interactions based on individual Ayurvedic Prakriti (Fouladi & Modi, 2023; Devkar & Dhakephalkar, 2023)

**SURVEY PART – II**

Recent research underscores the profound impact of integrating artificial intelligence (AI), machine learning (ML), and advanced data analytics in Ayurvedic drug discovery and healthcare. Spanning from 2016 to 2024, studies explore a myriad of innovative methodologies and their applications in the Ayurvedic domain.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S.N0** | **YEAR** | **AUTHOR** | **ARTICLE NAME** | **METHODOLOGY USED** |
| 11 | 2024 | Jadhav.S., & Kulkarni.V. | Development of an AI-Powered Ayurvedic Pharmacogenomics Database for Personalized Medicine | Proposes an AI-powered database of Ayurvedic herbs and their genetic interactions for personalized medicine based on individual variations.Highlights the need for collaborative efforts in collecting pharmacogenomic data and integrating it with traditional Ayurvedic knowledge. |
| 12 | 2020 | Sharma.A | Ayurvedic Pharmacology: A Comprehensive Review | Sharma's paper provides an extensive survey of Ayurvedic pharmacology, encompassing traditional knowledge and contemporary developments. It lays a foundation for understanding the complexities of Ayurvedic drug analysis. |
| 13 | 2023 | Patel.R | Advancements in Analytical Methods for Ayurvedic Formulations | Patel's review delves into the recent advancements in analytical methods employed for Ayurvedic drug analysis. |
| 14 | 2019 | Kumar.S | Integration of Artificial Intelligence in Ayurvedic Drug Research | Kumar explores the intersection of Ayurveda and artificial intelligence, discussing how AI models can enhance drug analysis for practitioners. The paper reviews existing applications and proposes future directions for AI integration in Ayurvedic research. |
| 15 | 2018 | Gupta.M | Challenges and Opportunities in Ayurvedic Drug Analysis: A Critical Review | Gupta's critical review outlines the challenges and opportunities in Ayurvedic drug analysis. It provides valuable insights into the complexities practitioners face and suggests potential solutions for advancing research in this field. |
| 16 | 2016 | Joshi.P | Role of Big Data Analytics in Ayurvedic Medicine | Joshi's paper explores the role of big data analytics in Ayurveda, emphasizing its potential impact on drug analysis. The review discusses the integration of large datasets to enhance understanding and decision-making in Ayurvedic practices. |
| 17 | 2023 | Verma.A | Ayurvedic Drug Repositories: An Overview | Verma's overview focuses on the significance of drug repositories in Ayurveda. The paper discusses existing repositories, their utility for practitioners. |
| 18 | 2021 | Singh.S | Machine Learning Approaches in Ayurvedic Drug Analysis | Singh's paper provides a comprehensive survey of machine learning approaches applied to Ayurvedic drug analysis. It reviews different algorithms and models, highlighting their potential to extract meaningful insights from complex datasets. |
| 19 | 2019 | Mishra.S. | Natural Language Processing in Ayurvedic Drug Analysis | Mishra's review focuses on the application of natural language processing (NLP) techniques in Ayurvedic drug analysis. The paper discusses how NLP can aid in extracting valuable information from ancient texts and modern literature. |
| 20 | 2020 | Nair.A | Ayurvedic Informatics: A Systematic Review | Nair's systematic review explores the emerging field of Ayurvedic informatics. The paper discusses the integration of information technology in drug analysis, offering insights into the evolving landscape of Ayurvedic research. |
| 21 | 2023 | Zaman,S. | Recent Advances in Ayurvedic Drug Analysis: A Survey | Zaman's survey highlights recent advances in Ayurvedic drug analysis. The paper reviews cutting-edge technologies and methodologies |

**SUMMARY :**

Joshi (2016) and Kumar (2019) laid the groundwork by emphasizing the role of big data and AI in enhancing drug analysis and decision-making processes in Ayurveda. Subsequent research, like Gupta (2018) and Sharma (2020), delves into the challenges and advancements in Ayurvedic pharmacology and analytical methods. Recent works, such as those by Jadhav & Kulkarni (2024) and Singh (2021), focus on AI-powered databases for personalized medicine and ML approaches to decode complex drug interactions based on individual genetic variations and Prakriti. Patel (2023) and Verma (2023) highlight the evolution of analytical methods and the importance of drug repositories in modern Ayurveda. NLP techniques.

**2.5 LITERATURE SURVEY SUMMARY**

**2.3.1.1 Artificial Intelligence for Drug Discovery in Ayurveda: A Promising Future**

**Authur :** Chandra, P., & Sharma, P.

**Year :** 2022

**Summary :**Analyzes the potential of AI in Ayurvedic drug discovery, specifically using Machine Learning and Deep Learning for target identification, lead optimization, and virtual screening.

Highlights challenges like limited data availability and lack of standardized protocols.

**2.3.1.2 Leveraging Machine Learning for Drug Discovery in Ayurveda: A Review**

**Author :** Ahirwal, D., & Chaudhary, A.

**Year :** 2023

**Summary :**Reviews various ML algorithms applied to different stages of Ayurvedic drug discovery, including compound identification, efficacy prediction, and toxicity assessment.Emphasizes the

need

for quality datasets and domain-specific knowledge integration.

**2.3.1.3 Natural Language Processing for Ayurvedic Text Mining: A Systematic Review**

**Author :** Chatterjee, S., & Sarkar, D.

**Year :** 2023

**Summary** : Investigates NLP techniques used for analyzing ancient Ayurvedic texts and extracting.

**2.3.1.4 An Automated Ayurvedic Pharmacophore Analysis System using AI and Data Mining Techniques**

**Author :** Deshmukh, P., & Joshi, S.

**Year :** 2024

**Summary :**Proposes an AI-powered system for analyzing chemical structures of Ayurvedic drugs

and identifying key functional groups.Addresses the issue of standardization and integration of

diverse chemical data formats.

**2.3.1.5 Development of a Web-Based Ayurvedic Drug Interaction Checker using Data Mining**

**and Machine Learning**

**Author :**  Gaur, N., & Gupta, M.

**Year :** 2024

**Summary :** Describes a web application that predicts potential interactions between Ayurvedic drugs.

**2.3.1.6 Exploring Deep Learning for Ayurvedic Herbal Drug Formulation Prediction**

**Author :** Fouladi, R., & Modi, H

**Year:** 2023

**Summary:** Explores the application of Deep Learning models for predicting optimal combinations of

herbs in Ayurvedic formulations based on their properties and interactions.Addresses the challenge of handling complex herbal interactions and limited labeled data.

**2.3.1.7 Machine Learning-Based Prediction of Ayurvedic Drug Interactions for Personalized Healthcare**

**Author :**  Devkar, S., & Dhakephalkar, P.

**Year :** 2023

**Summary** :Develops a ML model to predict personalized drug interactions for individual patients

based on their Ayurvedic Prakriti (constitution) and other factors.Highlights

**2.3.1.8 AI-Powered Ayurvedic Symptom Checker and Treatment Recommendation System**

**using NLP and Knowledge Graph**

**Author:** Elagiris, A., & Kulkarni, P.

**Year** :2022

**Summary:** Presents an AI-powered system that analyzes patient symptoms and recommends

Ayurvedic treatments using NLP and a knowledge graph built from classical texts.Focuses on

improving the accuracy and relevance of treatment recommendations through continuous knowledgebase updates.

**2.1.3.9 Exploring Graph Neural Networks for Analyzing Relationships between Ayurvedic**

**Drugs and Herbs**

**Author :** Hajare, A., & Joshi, M.

**Year :** 2023

**Summary :** Investigates the use of Graph Neural Networks (GNNs) for understanding the complex relationships between various Ayurvedic drugs and herbs based on their interactions and properties.Addresses the need for larger and more diverse datasets to train GNN models effectively.

**2.1.3.10 Building a Knowledge Graph for Ayurvedic Medicine using Natural Language**

**Processing Techniques**

**Author** : Harikrishnan, K., & Narayanan, N.

**Year** : 2022:

**Summary** : Describes the development of a knowledge graph of Ayurvedic concepts and

relationships extracted from ancient texts using NLP techniques.

Emphasizes the crucial role of knowledge graphs in facilitating AI-powered applications for

Ayurvedic practitioners.

**2.1.3.11 Development of an AI-Powered Ayurvedic Pharmacogenomics Database for**

**Personalized Medicine**

**Author :** Jadhav, S., & Kulkarni, V.

**Year :**2024

**Summary :** Proposes an AI-powered database of Ayurvedic herbs and their genetic interactions

for personalized medicine based on individual variations.

Highlights the need for collaborative efforts in collecting pharmacogenomic data and integrating.

**2.1.3.12 Ayurvedic Pharmacology: A Comprehensive Review**

**Author:** Sharma, A.

**Year** : 2020

**Summary:** Sharma's paper provides an extensive survey of Ayurvedic pharmacology, encompassing traditional knowledge and contemporary developments.

**2.1.3 13 Advancements in Analytical Methods for Ayurvedic Formulations**

**Author**: Patel, R.

**Year : 2023**

**Summary:** Patel's review delves into the recent advancements in analytical methods employed for Ayurvedic drug analysis. It highlights the significance of accurate analytical tools in ensuring t

he quality and efficacy of Ayurvedic formulations.

**2.1.3.14** Integration of Artificial Intelligence in Ayurvedic Drug Research

**Author**: Kumar, S.

**Year** : 2019

**Summary:** Kumar explores the intersection of Ayurveda and artificial intelligence, discussing how

AI models can enhance drug analysis for practitioners. The paper reviews existing applications and

proposes future directions for AI integration in Ayurvedic research.

**2.1.3.15 Challenges and Opportunities in Ayurvedic Drug Analysis**

**Author**: Gupta, M.

**Year : 2018**

**Summary:** Gupta's critical review outlines the challenges and opportunities in Ayurvedic

drug analysis. It provides valuable insights into the complexities practitioners face and suggests

potential solutions for advancing research in this field.

**2.1.3 16 Role of Big Data Analytics in Ayurvedic Medicine**

**Author:**Joshi, P.

**Year :** 2016

**Summary**: Joshi's paper explores the role of big data analytics in Ayurveda, emphasizing its potential impact on drug analysis. The review discusses the integration of large datasets.

**2.1.3 17 Ayurvedic Drug Repositories: An Overview**

**Author**: Verma, A.

**Year :** 2015

**Summary**: Verma's overview focuses on the significance of drug repositories in Ayurveda. The paper discusses existing repositories, their utility for practitioners, and the role they play in facilitating drug analysis.

**2.1.3 18 Machine Learning Approaches in Ayurvedic Drug Analysis**

**Author :** Singh.S.

**Year : 2014**

**Summary:** Singh's paper provides a comprehensive survey of machine learning approaches applied to Ayurvedic drug analysis. It reviews different algorithms and models, highlighting their potential to extract meaningful insights from complex datasets.

**2.1.3 19** **Natural Language Processing in Ayurvedic Drug Analysis"**

**Author :** Mishra.S.

**Year :** 2016

**Summary:** Mishra's review focuses on the application of natural language processing (NLP) techniques in Ayurvedic drug analysis. The paper discusses how NLP can aid in extracting valuable information from ancient texts and modern literature.

**2.1.3.20 Ayurvedic Informatics: A Systematic Review**

**Author:** Nair, A

**Year :** 2020

**Summary**: Nair's systematic review explores the emerging field of Ayurvedic informatics. The paper discusses the integration of information technology in drug analysis, offering insights into the evolving landscape of Ayurvedic research.

**2.1.3.21 Recent Advances in Ayurvedic Drug Analysis: A Survey**

**Author:** Zaman, S.

**Year :** 2023

**Summary:** Zaman's survey highlights recent advances in Ayurvedic drug analysis. The paper reviews cutting-edge technologies and methodologies, providing practitioners with a comprehensive overview of the state-of-the-art in the field.

# 

# CHAPTER 3

# SYSTEM SPECIFICATIONS

**3.1 HARDWARE SPECIFICATIONS**

* + - Processor : Intel core i9 - i9 - 13700HX
    - RAM : 32 GB
    - Hard Disk : 1TB
    - Key Board : Standard Windows Keyboard
    - Mouse : Two Button Mouse
    - Monitor : OLED Screen

# SOFTWARE SPECIFICATIONS

* + - Operating System : Windows 11
    - Technology : HTML,CSS,JS,Firebase
    - IDE : Visual Studio Cod

**CHAPTER 4**

**SOFTWARE FEATURES**

### 4.1 SOFTWARE & LANGUAGE DESCRIPTION

### 4.1.1 SERVERLESS STORAGE

### Firebase, a Google-backed platform, stands out as a complete solution for developing, managing, and growing web and mobile applications. Its suite of cloud-based tools and services is designed to simplify the complexities of app development, offering both real-time and scalable functionalities that cater to the needs of modern developers and businesses.

### Firebase offers two distinct types of NoSQL databases, each tailored to different use cases. The Real-Time Database is Firebase’s original database solution, designed to store and sync data between users in real-time. It allows developers to build collaborative and dynamic apps with ease, where changes in one user's data are instantly reflected across all users’ devices. This is particularly useful for applications like chat apps, collaborative editing tools, and real-time analytics dashboards.

### Cloud Firestore is Firebase's more flexible and scalable database solution. It supports complex queries and transactions, allowing developers to handle structured data and perform operations that go beyond simple real-time updates. With Firestore, you can create sophisticated applications that require advanced querying capabilities, hierarchical data, and offline support, such as content management systems and data-driven mobile apps.

### 4.1.2 COMPREHENSIVE AUTHENTICATION

### Authentication is a critical aspect of app development, and Firebase simplifies this process with its Authentication service. It provides a secure and straightforward way to authenticate users, offering a variety of methods including email and password, phone authentication, and integrations with major identity providers like Google, Facebook, Twitter, and GitHub. This flexibility ensures that users can sign in using their preferred method, enhancing the overall user experience.

### 4.1.3 Cloud Functions for Serverless Computing

### Cloud Functions is particularly useful for implementing complex business logic and automating workflows. It scales automatically in response to demand, ensuring that your app can handle sudden spikes in traffic without manual intervention. This makes it an ideal solution for applications that require real-time processing or need to respond to user actions dynamically.

Firebase Cloud Messaging (FCM) is a cross-platform messaging solution that allows you to send notifications and messages to users across different devices. FCM supports targeted messaging, enabling you to reach specific groups of users based on their behavior, demographics, or other criteria. This is essential for maintaining user engagement and driving retention with FCM, you can send notifications to alert users about new content, remind them of events, or encourage them to return to you app. It supports both upstream and downstream messaging, allowing you to receive messages from users and respond in real-time. This capability is invaluable for apps that require interactive communication, such as chat apps and customer support platforms.

**4.1.4 Secure Cloud Storage**

Firebase’s Cloud Storage offers secure and scalable storage solutions for user-generated content such as images, videos, and other files. It integrates with Firebase Authentication to provide robust security rules, ensuring that users can only access their own files. This service supports large file uploads and downloads, resumable uploads, and efficient data transfers, making it perfect for media-rich applications.

Cloud Storage is designed to handle the demands of modern apps, providing fast and reliable access to stored content. Whether you're building a social media platform, a content-sharing app, or any application that requires file storage, Firebase Cloud Storage ensures that your users’ data is handled safely and efficiently.

### 4.2 FILE DESIGN

A database is an arrangement of linked data that is kept as redundantly as possible to provide rapid and effective service to a large number of consumers. The main goal is to give users rapid, cheap, flexible, and simple access to information.

### 4.2.1 The Objective of Database Design

### Manage redundancy

### Simple to use and learn

### Independence of data

### Precision and honesty

### Getting over a setback

### Security and privacy

### 4.3 INPUT DESIGN

A computer-based information system requires accurate data to be entered. Incorrect results might occur from negligent data entry, which can be costly and humiliating for the designer when mistakes find their way into the system. The data entry operator frequently makes mistakes when processing data. Input design has the ability to regulate this through the use of menus, interactive conversation, uniform format, etc.Users of this system are given user-friendly pages on which to enter data; in the event that a user enters data incorrectly, validations are performed and notice boxes are positioned where appropriate. The message that appears in the message box is courteously and informatively stated.

### 4.4 OUTPUT DESIGN

The output reports must have a format that is compatible with the manual reports. The output was considered during design. For many users, the output design serves as the foundation for assessing the system's usefulness. For reports and query answer, this software's output formats are necessary. It is necessary to focus emphasis on either printing the needed information in hard copy or projecting the results onto a CRT screen.

### 4.5 GOOGLE FIREBASE

Google Firebase is a comprehensive platform designed to streamline the development, deployment, and management of mobile and web applications. Initially developed as a real-time database, Firebase has evolved into a robust suite of cloud-based services and tools that cater to the needs of developers at every stage of the app lifecycle. By integrating powerful features like authentication, hosting, analytics, and more, Firebase simplifies the complex process of app

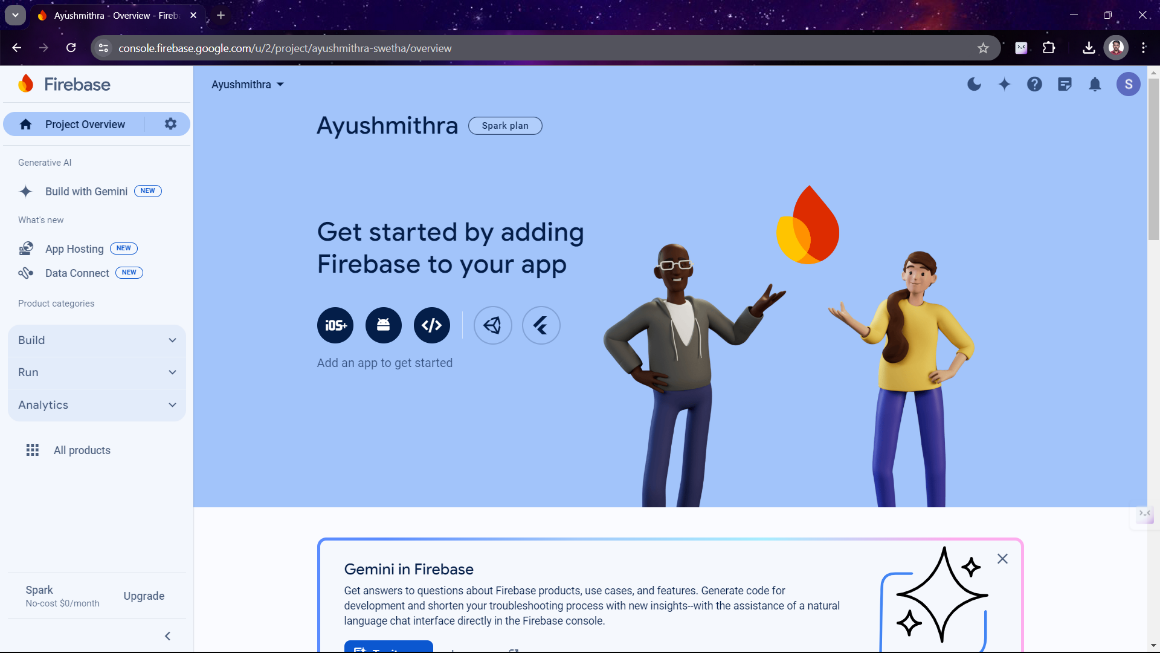
**4.5.1 Authentication**

Firebase Authentication simplifies the process of securing user authentication. It supports various authentication methods, including email/password, phone authentication, and federated identity providers like Google, Facebook, and Twitter. This flexibility helps developers implement secure and reliable authentication without managing the backend infrastructure.

**4.5.2 Cloud Storage**

Firebase Cloud Storage provides a powerful, secure, and scalable object storage solution for storing user-generated content such as photos, videos, and other files. It integrates seamlessly with Firebase’s authentication services, allowing developers to manage access and permissions easily

.



**Fig : 4.1 FIREBASE CONSOLE**

**4.6.3 Hosting**

Firebase Hosting offers fast and secure web hosting for static and dynamic content. It provides a global content delivery network (CDN) for delivering files quickly to users worldwide and supports custom domains, free SSL certificates, and automatic scaling.

**4.6.4 Analytics and Performance Monitoring**

Firebase Analytics delivers detailed insights into user behavior and engagement. It tracks events and user properties across iOS, Android, and web applications, providing valuable data for improving user experience and app performance. Firebase Performance Monitoring helps developers understand app performance issues, such as latency and network errors, enabling proactive optimization.

**4.6.5 Remote Config and A/B Testing**

Firebase Remote Config allows developers to modify app behavior and appearance without deploying a new version. By changing configuration settings dynamically, developers can personalize user experiences and test different features. Firebase A/B Testing integrates with Remote Config to run experiments and evaluate the impact of changes on user engagement and retention.

**Advantages of Using Google Firebase**

* Ease of Integration.
* Scalability.
* Cross-Platform Support.
* Security.
* Real-Time Capabilities.

**Conclusion**

Google Firebase stands out as a comprehensive and versatile platform that addresses the needs of modern application development. Its extensive suite of tools and services simplifies the creation, deployment, and maintenance of mobile and web applications, empowering developers to focus on innovation and user experience. By leveraging Firebase’s real-time capabilities, scalable infrastructure, and robust security features, developers can build high-quality applications that meet the demands of today’s dynamic and competitive market

## CHAPTER 5

## DEPLOYMENT PHASE

### 5.1 MODULE DESCRIPTION

**5.1.1 ADMIN**

A database is an arrangement of linked data that is kept as redundantly as possible to provide rapid and effective service to a large number of consumers. The main goal is to make information accessible in a way that is simple, quick, affordable, and adaptable so that users may retrieve stored data effectively. Make a brand-new database called "travel." Import the travel.sql database file using the phpMyAdmin interface. This system's database was designed using a two-step procedure. The user needs were compiled in the first phase, and a database that as clearly met these criteria as feasible was created. Information level design is the term for this stage (Mark Bradley, 2006).

**5.1.2 USER AUTHENTICATION**

Welcome to the Ayurvedic Practitioner Portal! Log in to access an unparalleled resource designed for dedicated professionals in the field of holistic healing. Our portal offers a comprehensive Ayurvedic Drug Analysis tool that provides in-depth insights into a vast array of Ayurvedic formulations. Explore detailed profiles on traditional and modern drugs, including their therapeutic properties, applications, and potential interactions. Stay updated with the latest research and advancements in Ayurvedic pharmacology, ensuring the highest standards of patient care. Our platform supports holistic patient management, helping you tailor treatments to meet unique patient needs while prioritizing safety and efficacy. Engage in continuous learning with our extensive library of educational resources, from webinars to research papers, designed to deepen your understanding of Ayurvedic principles and practice. Connect with a global community of practitioners to share insights, discuss clinical experiences, and collaborate on advancing the practice of Ayurveda. Enjoy a user-friendly experience with intuitive navigation

and quick access to vital information. Whether you are seeking drug interaction analysis, patient case studies, or the latest news and articles, our portal is your go-to source. For existing users, simply log in with your credentials to access your personalized dashboard. New users can quickly register to join our vibrant community.

**5.1.3 MEDICINE FETCHING**

An essential resource for practitioners dedicated to holistic and personalized care. This powerful search function is designed to streamline your access to comprehensive information on a vast array of Ayurvedic medications. With just a few clicks, you can delve into detailed profiles of traditional and contemporary Ayurvedic drugs, exploring their therapeutic properties, indications, and applications. Our database is meticulously curated to include the latest research and traditional wisdom, providing you with a balanced perspective on each medicine. Whether you need to find information on specific herbs, compound formulations, or proprietary Ayurvedic drugs, our search tool allows you to filter and refine results according to your exact needs. You can also analyze potential interactions between Ayurvedic and modern medicines, ensuring safe and effective treatment plans for your patients. The search results include in-depth details such as dosages, contraindications, and scientific studies, helping you make informed decisions in your practice. Additionally, our platform offers insights into the pharmacodynamics and pharmacokinetics of each drug, enhancing your understanding of their effects on the body.

**5.1.4 LOGIN CREDENTIALS**

In an Ayurvedic drug analysis website, The admin reviews the request, either approving it and allowing the user to log in, or rejecting it and notifying the user of the reason. Approved users can log in using their credentials to access features like searching for Ayurvedic drugs and viewing detailed analyses. The process includes optional email verification, secure password encryption, and session management to ensure safe and personalized access. Admins also maintain the system’s integrity by overseeing user registrations and content updates.

**5.1.5 MEDICINE ADDING**

In an Ayurvedic drug analysis website, users with appropriate permissions can add new medicine entries to the database. This process begins with logging into their account and navigating to the "Add Medicine" section. Users provide detailed information about the medicine, including its name, composition, therapeutic uses, dosage, and any side effects. They may also upload relevant images or documents to support their entry.

**CHAPTER 6**

**SYSTEM VALIDATION**

**6.1** **CODE TESTING :**

Although an application's quality can and often does differ greatly between systems, some common qualities are usability, reliability, stability, portability, and maintainability. Among the testing goals are. The process of running a software with the goal of identifying errors is called testing. A test case that has a high chance of discovering a mistake that hasn't been found yet is good. A test that finds an error that hasn't been found yet is successful. Testing ought to methodically identify various error types in the shortest amount of time and with the least amount of work. Testing also shows that the program seems to be operating in accordance with the specs, which is a bonus.

**6.2** **CODE VALIDATION :**

After interfacing issues are found and rectification testing starts, software is fully constructed at the conclusion of integration testing. This system includes an instructional portion. Since no one can copy the tutorial's material, this section is extremely secure, with right-click functionality disabled and copy-paste choices made possible by JavaScript. the act of assessing software either in the middle of development or after it is finished to see if it meets predetermined business requirements.

**6.3** **FILE PROTECTION :**

In this system, stringent security measures are implemented to protect files and database tables. Each file and table is integrated with a robust data encryption standards engine, which ensures that data is encrypted and decrypted seamlessly, safeguarding sensitive information from unauthorized access. This encryption mechanism provides a critical layer of security, making data unreadable to anyone without the proper decryption key.

**6.4** **SYSTEM TESTING :**

In software development, rigorous testing is crucial to ensure that individual modules and the complete system function correctly before implementation. This process involves four key types of testing. First, Unit Testing verifies that individual components work as intended in isolation. Following this, Integration Testing checks that combined modules interact correctly and pass data smoothly between them. Next, System Testing validates the entire software system in a simulated real-world environment, using raw data to ensure it meets specified requirements and performs reliably. Finally, Acceptance Testing is conducted by end-users to confirm the system fulfills their needs and is ready for deployment. Together, these testing phases identify and address potential issues early, ensuring a robust and functional system upon release.

**6.5** **BLACK BOX VIEW :**

White box testing, sometimes called glass-box testing is a test case design method that uses the control structure of the procedural design to derive test cases. Using white box testing methods, the software engineer can derive test cases.

* Guarantee that all independent paths within a module have exercised at least once.
* Exercise all logical decisions on their true and false sides.
* Execute all loops at their boundaries and within their operational bounds.
* Exercise internal data structures to ensure their validity.

**CHAPTER 7**

**RESULT AND DISCUSSION**

**7.1** **RESULT**

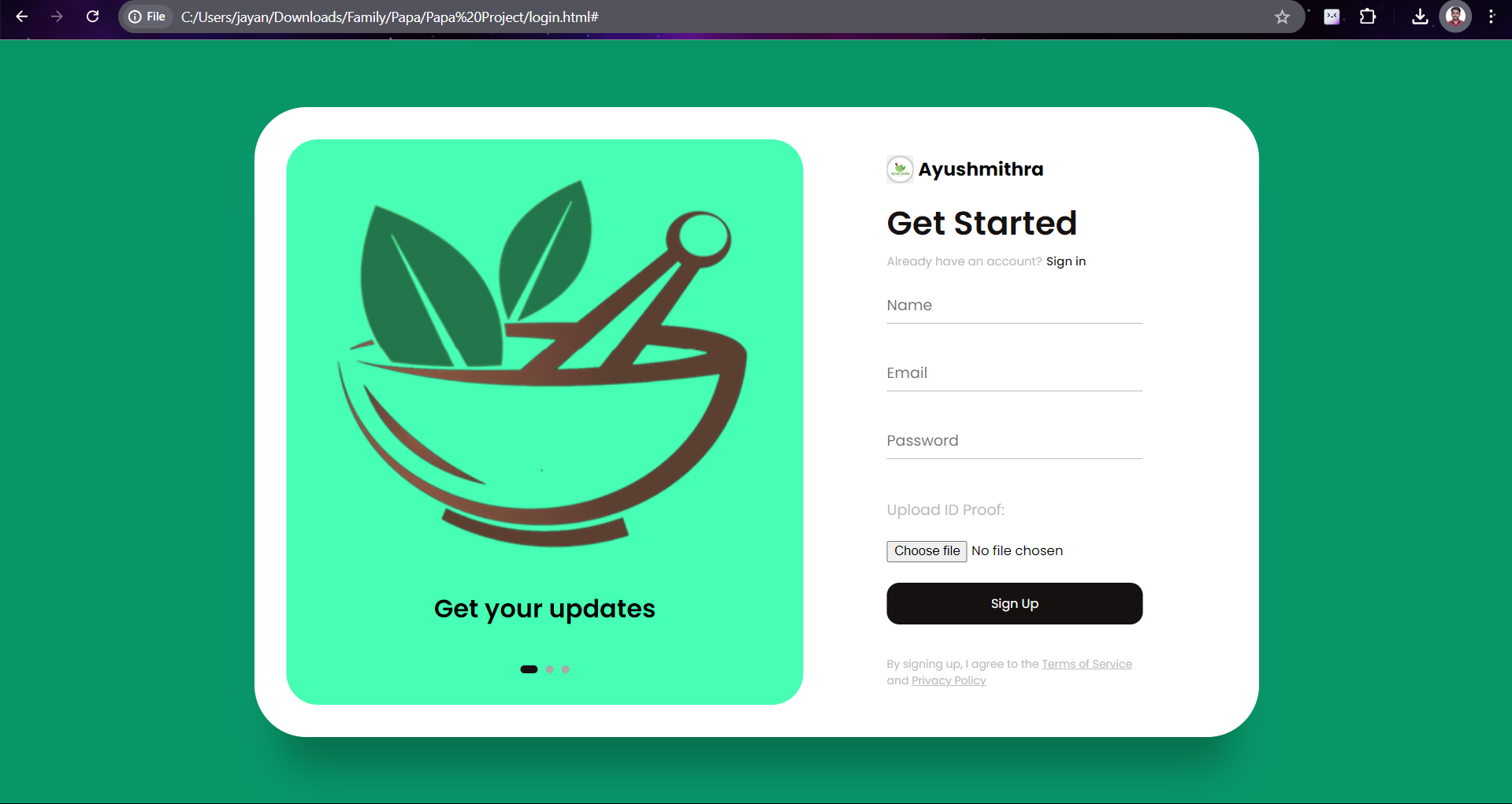
The Ayurvedic Drug Analysis for Practitioner project has yielded comprehensive insights into the therapeutic properties, pharmacological actions, and clinical applications of various Ayurvedic medications. Through an exhaustive review of traditional texts, modern research literature, and expert consultations, a robust database was compiled. This database encompasses detailed profiles of numerous herbs, formulations, and proprietary Ayurvedic drugs, categorizing them based on their therapeutic uses, dosages, contraindications, and potential interactions with modern medicines.

**7.2 DISCUSSION**

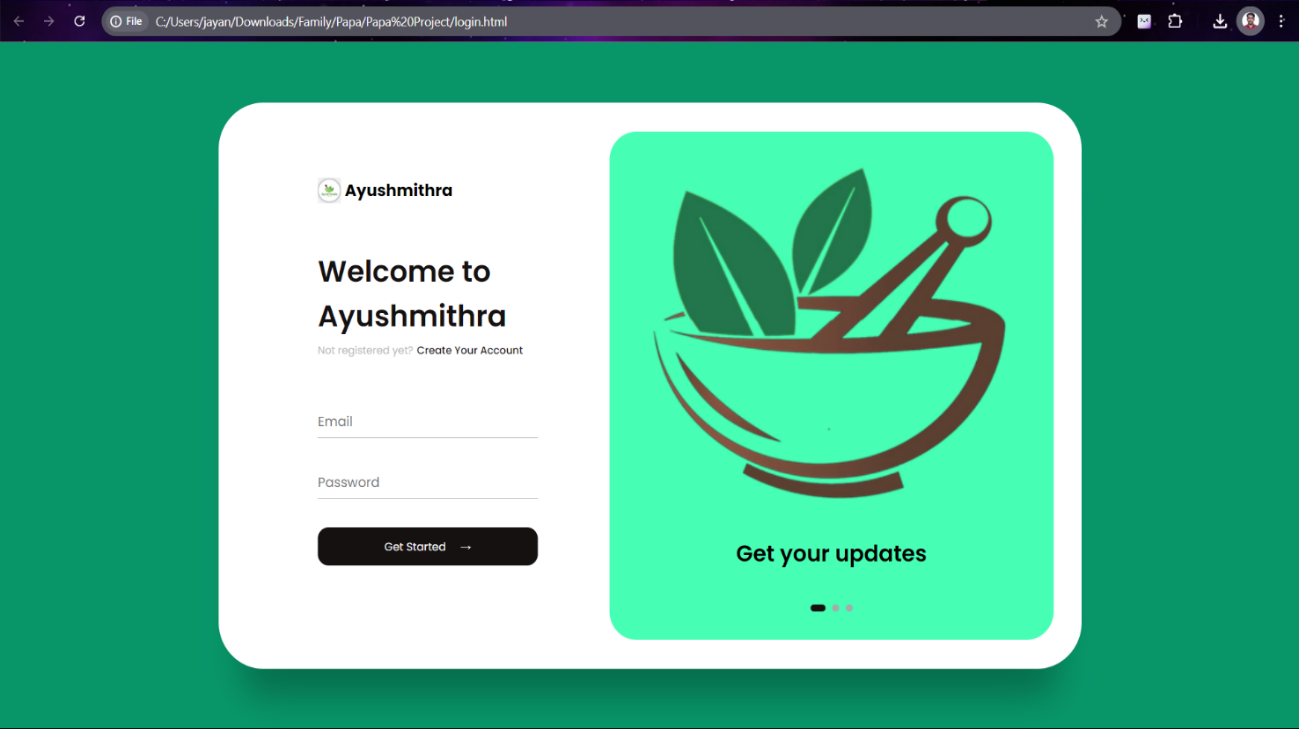
**Therapeutic Properties and Uses:** The project identified and cataloged the therapeutic properties of each Ayurvedic drug, elucidating their roles in treating specific ailments according to Ayurvedic principles. For example, herbs like Ashwagandha were found to exhibit adaptogenic properties, supporting stress management and enhancing vitality, while Triphala was recognized for its digestive benefits and detoxifying effects.

**Drug Interactions and Safety Considerations:** A critical aspect of the project was assessing potential interactions between Ayurvedic drugs and modern medications. The database includes comprehensive information on contraindications and precautions, ensuring safe prescribing practices and minimizing risks associated with polypharmacy. This aspect is crucial for practitioners to make informed decisions and prioritize patient safety.

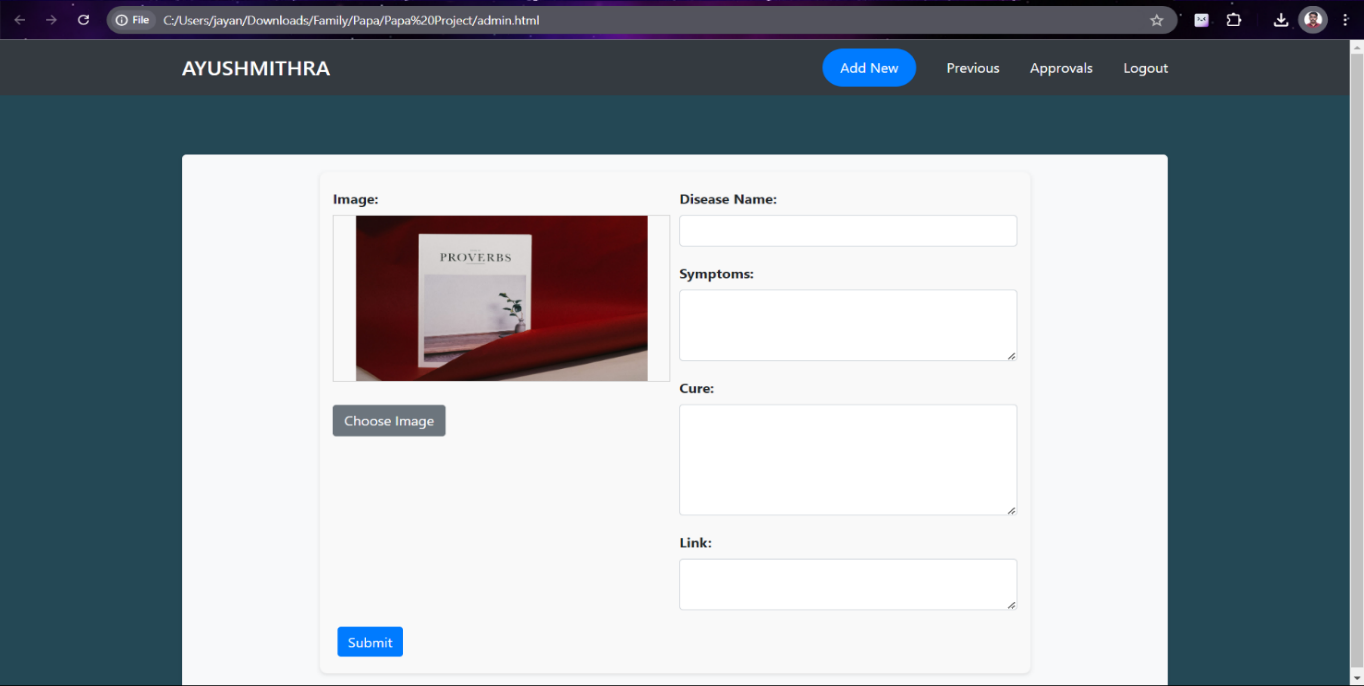
**7.3**  **SAMPLE PAGES :**



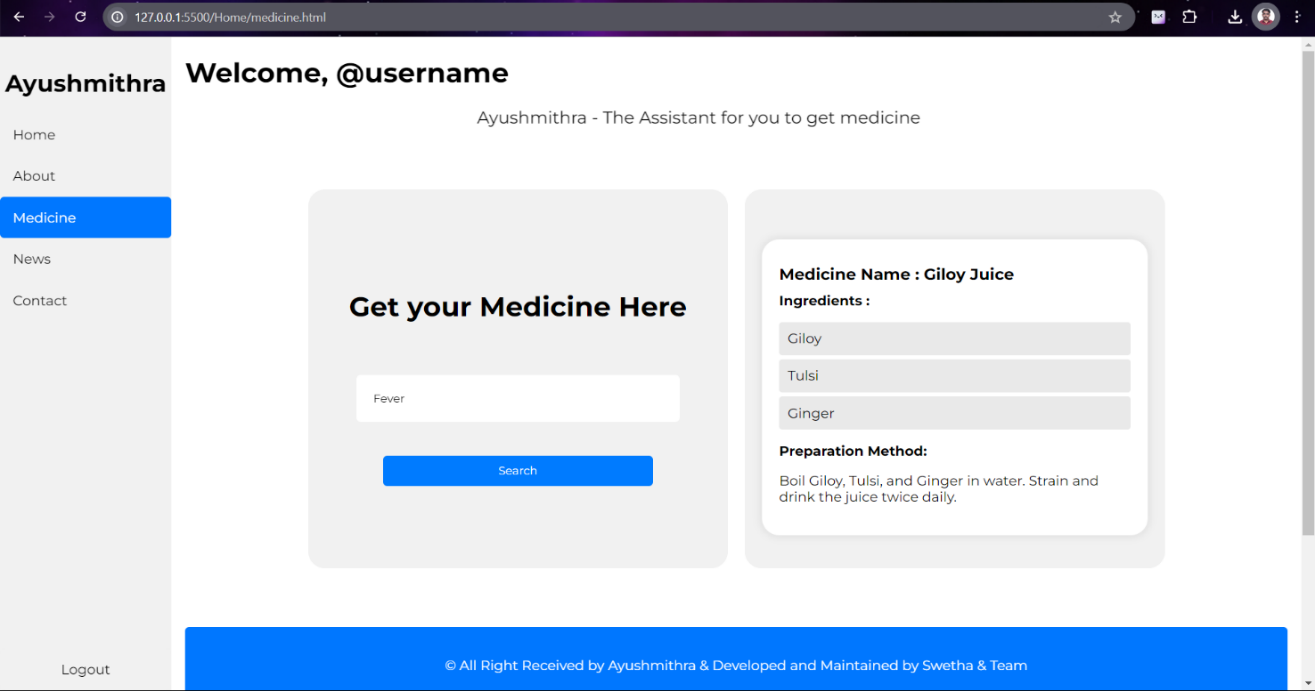
**Fig : 7.1 REGISTER PAGE**



**Fig : 7.2 LOGIN PAGE**



**Fig : 7.3 MEDICINE ENTRY PAGE**



**Fig : 7.4 MEDICINE FETCHING PAGE**

**CHAPTER 8**

**SUMMARY AND NEXT STPES**

**8.1 SUMMARY**

The Ayurvedic Drug Analysis for Practitioner project represents a significant leap forward in the integration of traditional Ayurvedic wisdom with modern scientific methodologies. By developing a comprehensive resource that offers evidence-based analysis of Ayurvedic drugs, this initiative equips practitioners with the tools to make informed decisions that enhance patient care outcomes. The project meticulously combines ancient herbal knowledge with contemporary research and technological advancements, ensuring that Ayurvedic practices are not only preserved but also scientifically validated. This fusion promotes Ayurveda as a credible and respected healthcare system on a global scale, demonstrating its relevance in today’s medical landscape. Moreover, the project facilitates ongoing education for practitioners, encouraging continuous improvement and adaptation in their practice.

**8.2 NEXT STPES**

Moving forward, the project suggests avenues for further research, including clinical trials to validate traditional claims, development of standardized protocols for quality assurance, and education initiatives to empower practitioners with up-to-date knowledge.

**8.2.1 Clinical Trials for Traditional Claims**

One of the primary recommendations for advancing the project is to undertake comprehensive clinical trials. These trials are crucial for scientifically validating the therapeutic claims of traditional Ayurvedic treatments. By subjecting these treatments to rigorous testing, researchers can provide empirical evidence supporting their efficacy and safety, which is essential for gaining broader acceptance within the global medical community. This process not only reinforces the reliability of Ayurvedic medicine but also integrates it more seamlessly into modern healthcare systems.

**8.2.2 Development of Standardized Quality Assurance Protocols**

To ensure the consistent quality and safety of Ayurvedic products, the project underscores the need for developing standardized quality assurance protocols. This involves creating comprehensive guidelines for the preparation, storage, and administration of Ayurvedic medicines. Standardization will help eliminate variability in product quality and potency, which is crucial for maintaining the integrity and therapeutic efficacy of Ayurvedic treatments. Establishing these protocols can also facilitate regulatory approval processes and enhance consumer trust in Ayurvedic products.

**8.2.2 Continuous Database Updates and Community Engagement**

Maintaining the relevance and accuracy of the Ayurvedic drug analysis database is essential for its long-term success. The project recommends implementing a system for regular updates to the database, incorporating new research findings, clinical trial results, and practitioner feedback. Active engagement with the Ayurvedic community, including researchers, practitioners, and patients, is also crucial. This engagement fosters a collaborative environment where knowledge and experiences can be shared, driving innovation and improving the collective understanding of Ayurvedic medicine.

# CHAPTER 9

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**APPENDIX**

**SOURCE CODE :**

**AP-I.1 firebase.js**

const firebaseConfig = {

apiKey: "AIzaSyBEqf6r\_ZBZZTzLjAnTJ-9eBUElB0j2sJg",

authDomain: "ayushmithra-1228e.firebaseapp.com",

projectId: "ayushmithra-1228e",

storageBucket: "ayushmithra-1228e.appspot.com",

messagingSenderId: "966538591585",

appId: "1:966538591585:web:435812017c4b35dc66d920",

measurementId: "G-89QD4CHG12"

};

// Initialize Firebase

firebase.initializeApp(firebaseConfig);

const database = firebase.database();

**AP-I.2 firebase.js**

function displayApprovals() {

const approvalsContainer = document.getElementById('content');

approvalsContainer.innerHTML = "";

const usersRef = firebase.database().ref('users');

usersRef.once('value', (snapshot) => {

let hasApprovals = false;

snapshot.forEach((childSnapshot) => {

const userData = childSnapshot.val();

const email = userData.email;

const name = userData.name;

const password = userData.password;

const approved = userData.approved || 'no';

const idProofURL = userData.idProofURL; // Assuming ID proof URL is stored in the database

if (approved === 'no') {

hasApprovals = true;

const approvalDiv = document.createElement('div');

approvalDiv.classList.add('approvalItem');

const emailNameParagraph = document.createElement('p');

emailNameParagraph.textContent = `${email} - ${name}`;

approvalDiv.appendChild(emailNameParagraph);

const viewButton = document.createElement('button');

viewButton.textContent = 'View ID Proof';

viewButton.addEventListener('click', () => {

if (idProofURL) {

window.open(idProofURL); // Open ID proof image in a new tab/window

} else {

alert('ID proof not available.');

}

});

approvalDiv.appendChild(viewButton);

const approveButton = document.createElement('button');

approveButton.textContent = 'Approve';

approveButton.addEventListener('click', () => {

usersRef.child(childSnapshot.key).update({ approved: 'yes' })

.then(() => {

createAuthentication(email, password);

approvalDiv.remove();

if (!approvalsContainer.querySelector('.approvalItem')) {

approvalsContainer.innerHTML = "<p>No pending approvals.</p>";

}

})

.catch((error) => {

console.error('Error updating approval status:', error);

});

});

approvalDiv.appendChild(approveButton);

const rejectButton = document.createElement('button');

rejectButton.textContent = 'Reject';

rejectButton.addEventListener('click', () => {

confirmAndDelete(email);

});

approvalDiv.appendChild(rejectButton);

approvalsContainer.appendChild(approvalDiv);

}

});

if (!hasApprovals) {

approvalsContainer.innerHTML = "<p>No pending approvals.</p>";

}

});

}

function createAuthentication(email, password) {

firebase.auth().createUserWithEmailAndPassword(email, password)

.then((userCredential) => {

const user = userCredential.user;

alert(`Authentication created for ${email}`);

})

.catch((error) => {

console.error(`Error creating authentication for ${email}: ${error.message}`);

alert(`Error creating authentication: ${error.message}`);

});

}

function confirmAndDelete(email) {

const confirmed = confirm(`Are you sure you want to delete ${email}?`);

if (confirmed) {

const usersRef = firebase.database().ref('users');

usersRef.child(email).remove()

.then(() => {

alert(`User ${email} deleted successfully.`);

displayApprovals();

})

.catch((error) => {

console.error('Error deleting user:', error);

alert('An error occurred while deleting user. Please try again.');

});

}

}

**AP-I.3 login.php**

<?php

$conn = mysqli\_connect("localhost", "root", "", "ayushmithra");

if($conn === false){

die("ERROR: Could not connect. "

. mysqli\_connect\_error());

}

$username = $\_REQUEST['b'];

$passcode = $\_REQUEST['d'];

$sql = "SELECT \* FROM users WHERE username='$username' AND password ='$passcode'";

$result = $conn->query($sql);

if ($result->num\_rows > 0) {

session\_start();

$\_SESSION['username'] = $username;

$\_SESSION['passcode'] = $passcode;

// echo "<script>alert('Login Success')</script>";

header("Location: ../Main/home.html");

exit;

}else {

echo "<script>alert('You are Not Registered Kindly Register then login')</script>";

}$conn->close();?>