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RUBI: Building a Better World for Women

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Abstract: ***Social, economic and financial empowerment of women helps every woman in society to achieve great heights. Availability of all the necessary resources helps a lot in women's lives. This document shows a website model where women can access a portal that provides a discussion forum where they can discuss any topic and post their opinions. A job portal where they can apply for jobs that interest them. This website contains information such as healthcare and education. The website also contains a chatbot which allows easy access to the application. The project is implemented using Django framework. For the front end, we used HTML, CSS and JavaScript with Bootstrap framework. For the back end, we used Python, SQLite database and Django framework.***

Keywords: Django, Bootstrap, Python, SQLite, HTML, CSS, JavaScript, SDLC, Google DialogFlow, Women Empowerment.

I. INTRODUCTION

There are countless challenges faced by women today. Whether it be health, career, education or simply everyday life, these challenges arise due to lack of resources, guidance and knowledge. Social pressures often make them hesitant to open up to others and address their issues.

To overcome this, we provide a platform where they can discuss their issues with relevant experts and find solutions. Our aim is to develop an application that provides a one-stop platform to overcome the myriad challenges faced by women, including lack of guidance regarding career, health, education and legal policies. The solution has features such as discussion forums, providing a network through which women can discuss their grievances and suggest solutions to other women. The application provides a job portal through which users can become both employers and employees. A personalized chatbot is also available, providing quick access to solutions for simple queries.

II. LITERATURE SURVEY

[1], helped us understand the importance of a website navigation structure. Information technology systems have been developed to make it easy for users to find their features, but this is still difficult in web-based systems. Here we see that a clear navigation structure between the pages of a website is very necessary. Thus, the structural design of a website determines how users can navigate through the website and take advantage of its benefits.

[2] proposed a paper that got the idea of interfaces, especially discussion forums. A key requirement for any website is the usability of the interface. All the features available to the user must be easily accessible, simple, and self-explanatory. The user needs to know what to expect from each feature and where each link takes them. If the user clicks on a link by mistake, there needs to be an easy way for the user to get back to where they were. The document also emphasizes the need for a responsive website. Most users nowadays own smartphones and tablets, so the layout must be responsive. Responsiveness allows users to enjoy all the features of the website on a small screen without having to zoom in on different parts of the website. The website can be used on a smartphone or tablet as easily as on a regular computer.

[3] analyzed common development life cycles to help us determine which approach would best suit our needs and constraints. This research determined that an iterative approach was best suited for our project. The iterative development model combines the strengths of the waterfall and spiral models. Again, the linear approach of the waterfall model is used. However, each linear sequence produces an increment of the software deliverable. The first increment takes care of the basic requirements, and in later phases the core functionality is also implemented, so new features are implemented in each subsequent version.

[4] have given us insight into the various components of web development including Python and Bootstrap for the front end, and how to use Django and Flask for web development. They have provided a list of features and benefits of Django and Flask, allowing developers to use the framework of their choice as per their needs. In our project, we will be using the Django framework.

[5] helped us understand in detail how chatbots work with Google DialogFlow. The entire DialogFlow methodology, the usage of intents, entities, integration, testing and other aspects are explained in this document. Dialog Flow is a Google service that runs on Google Cloud Platform and essentially allows any user to create beautiful voice and text-based conversational interfaces.

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Users can create, modify and modify this educational tool easily and efficiently, without any prior knowledge of chatbots or AI. Taking advantage of the APIs provided by Dialogflow, we implemented a Google Sheet that can be used to create and modify chatbots using Dialog Flow, without working directly with the platform. It's solidly built, so it's more stable and easier to use.

III. METHODOLOGY

A. System Architecture

The (Figure.1) depicts the system architecture of the Web application. Users first register and access the Web application. Users can access medical and educational discussion forums. To post a job, users must register as an employer and provide company and personal information. To apply for a job, users must register as an employee. After registering, users can search for jobs that match their interests, fill in their details and apply. All employee data is stored in a database.

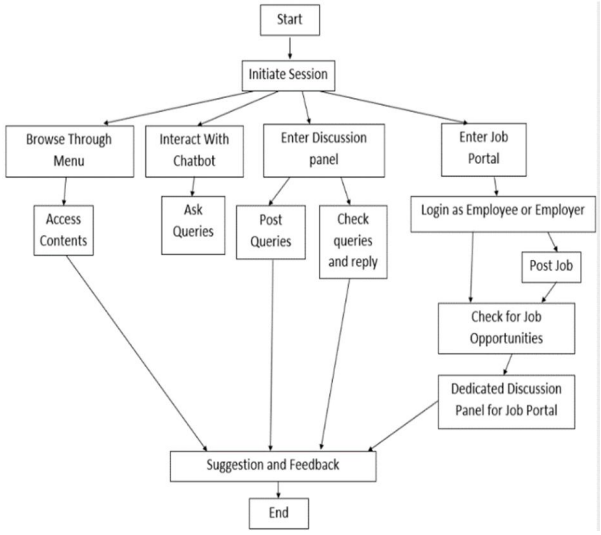


Figure 1.

B. Block Diagram

The website's features (Figure 2) can be accessed by first registering on the website. After that, you can register for all other services on the website. Once registered, a session is started and the various services become available. You can interact with the system by scrolling through the header menu where the services are later listed and accessing the content there. Questions on specific topics can be posed to She-Magica, an integrated chatbot powered by Google Dialog Flow. Secondly, we provide another feature called discussion panel, where users can post their questions and other users can answer them. This helps in building a social network of like-minded people who discuss any topic of their choice. Another feature is job portal. We have created a special job portal.

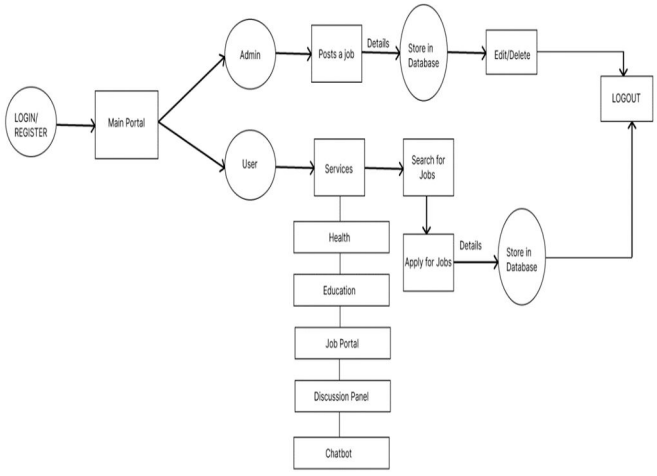


Figure 2.

C. Software Development Life Cycle Model

The development of our project follows an iterative model of software development. An iterative process model is an implementation of the software development life cycle where initial development begins based on initial requirements and functionality is added to the base software product in continuous iterations until the final system is created.

IV. IMPLEMENTATION

A. Technologies Used

1) Front-end framework: Bootstrap

In recent years, Bootstrap has become the most popular front-end framework. The Bootstrap framework makes it easy to create web projects. It is an elegant, intuitive and powerful front-end framework designed for mobile devices that aims to make web development faster and easier. It uses HTML, CSS and JavaScript.

2) Back-end framework: Django

The entire project was implemented using the Django framework. Django follows the MVT architecture. MVT (Model View Template) is a software design pattern. It is a collection of three important components: Model, View and Template.

B. Front-End Languages

1) HTML: HTML or HyperText Markup Language is a markup language for the Internet that defines the structure of web pages.

2) CSS: Cascading Style Sheets (CSS) is a style sheet language used to describe the appearance and formatting of documents written in markup languages. It is a way of adding style to HTML. The style sheet is the presentation of the document while HTML is the meaning or content of the document.

3) Javascript*:* JavaScript is a dynamic computer programming language. It is lightweight and is most commonly used as part of a web page. The implementation allows client-side scripts to interact with the user and create dynamic pages. It is an interpreted programming language with object-oriented features.

C. Back-End Languages

1) Python

Python is one of the most popular programming languages today. This is due to its simplicity and easy to-read syntax. Python is used in several fields to develop different types of applications, including desktop applications, machine learning models, and web development is one such field. Python is useful for a variety of tasks, including web development. Python allows you to build web apps in a variety of ways, including server-side web apps and RESTful web APIs.

2) SQLite

SQLite is a free, open-source, public domain software package for managing relational databases (RDBMS). An RDBMS (relational database management system) is a database management system that stores user defined records in large tables. In a data storage and management system, the database engine can execute complex query commands that consolidate data from multiple tables to create reports and data summaries.

D. Hardware and Software Requirements

The following specifications are required for the project to run on any device.

1) System Specifications

I. Processor: Intel(R) Core (TM) ie-5005U CPU @
II.RAM: 2 GB
III.System Type: 32-bit/64-bit operating system, x32
IV.Operating System: Windows 7/8/10.

2) Software Interface

I. Framework: Python, Bootstrap
II.Front End: HTML, CSS, JavaScript
III.Backend: Python, SQLite
IV..Local Access Link: localhost:8000

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V. RESULTS

A. Home Page

After that the entire project is designed and made user friendly with UI/UX implemented using Bootstrap, HTML, CSS and JavaScript. After that the pages are connected to provide a hassle-free GUI to the users. The homepage of our website is as shown in the (Figure. Home Page).



Figure. Home Page

B. Our Services

(Figure. Services), provides insights about all the services offered on the website. We implemented a chatbot and named it Magica. Then we stored some useful content related to healthcare, education and finance. We have our own job portal and discussion forum.

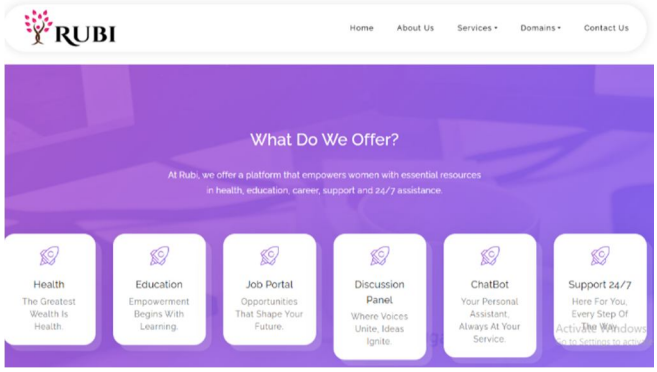


Figure. Services

C. Login and Registration

Registration and Login (Figure. Login Page) of the website is implemented using the built-in form provided by Django framework. New users register by providing basic details such as name, email id, and password. After registration, they can log in any time using the same credentials. The credentials are stored in the framework's built-in SQLite database.

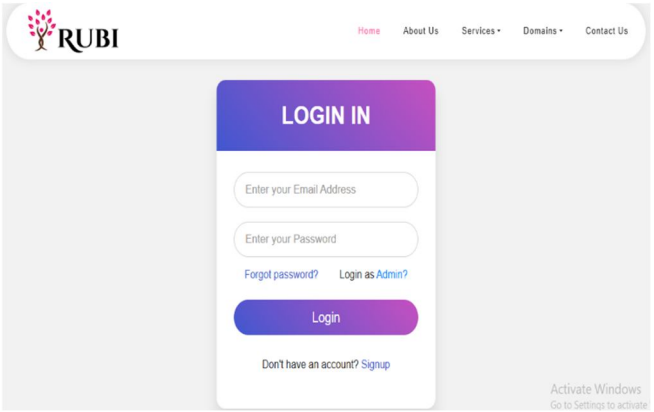


Figure. Login Page

D. Chatbot

We used Google DialogFlow API to implement the chatbot. Here, we have added the answers from the chat. Then, we created entities with different attributes and later integrated them into the chatbot intents. We named our chatbot "Magica" and added its icon URL in the configuration. The URL is created by creating a logo and uploading it on the internet. Training, testing and integration were done with Dialogflow API itself. Then the integration was done in the Django project by adding the code at the bottom of the HTML page. Once the chatbot integration is enabled it will start working on your website. We implemented health tips, nutrition tips, exercise tips, education tips and financial tips.

E. Discussion Panel

Discussion panel was implemented using Django framework. By increasing the number of topics you can build a network of people sharing different ideas. To create a topic, a user needs to enter his/her name, email ID, the topic he/she wants to discuss, its description, and a link related to the topic, if applicable. Other users can add comments to the existing topic by clicking on the comments section and adding their valuable comments. All the information discussed here is stored in the framework's built-in SQLite database.

F. Job Portal

This shows the home page of the job portal. Users can register on the job portal as an employee or an employer. A login page for employers and employees will be displayed. Users can log in as employees and search for the jobs they want. Later, they can view the jobs, bookmark the jobs they like, and apply for the jobs they want to accept.

VI. CONCLUSION AND FUTURE SCOPE

In conclusion, we want to provide an application that helps society empower women by providing them with useful resources and a platform where they can share their ideas and thoughts and help each other. In future, the entire web application will create an atmosphere where like-minded users help each other in their lives. The job portal aims to draw attention to existing employment opportunities and help them become self-reliant.

In future, the project can be expanded to add additional useful content and innovative features. Moreover, the project can be hosted for global use

VII. ACKNOWLEDGMENT

We take this opportunity to thank our Principal for always encouraging and motivating us. We would like to extend our gratitude to the Head of the Department Prof. Dr. Shraddha Phansalkar and our project guide Prof. Disha Gabhane for their valuable guidance and for providing all the necessary facilities, which were indispensable in the completion of this project report. We are also thankful to all the staff members of the Department Computer Science and MIT Art, Design and Technology, for their valuable time, support, comments, suggestions and persuasion. We would also like to thank the institute for providing the required facilities, Internet access and important books.

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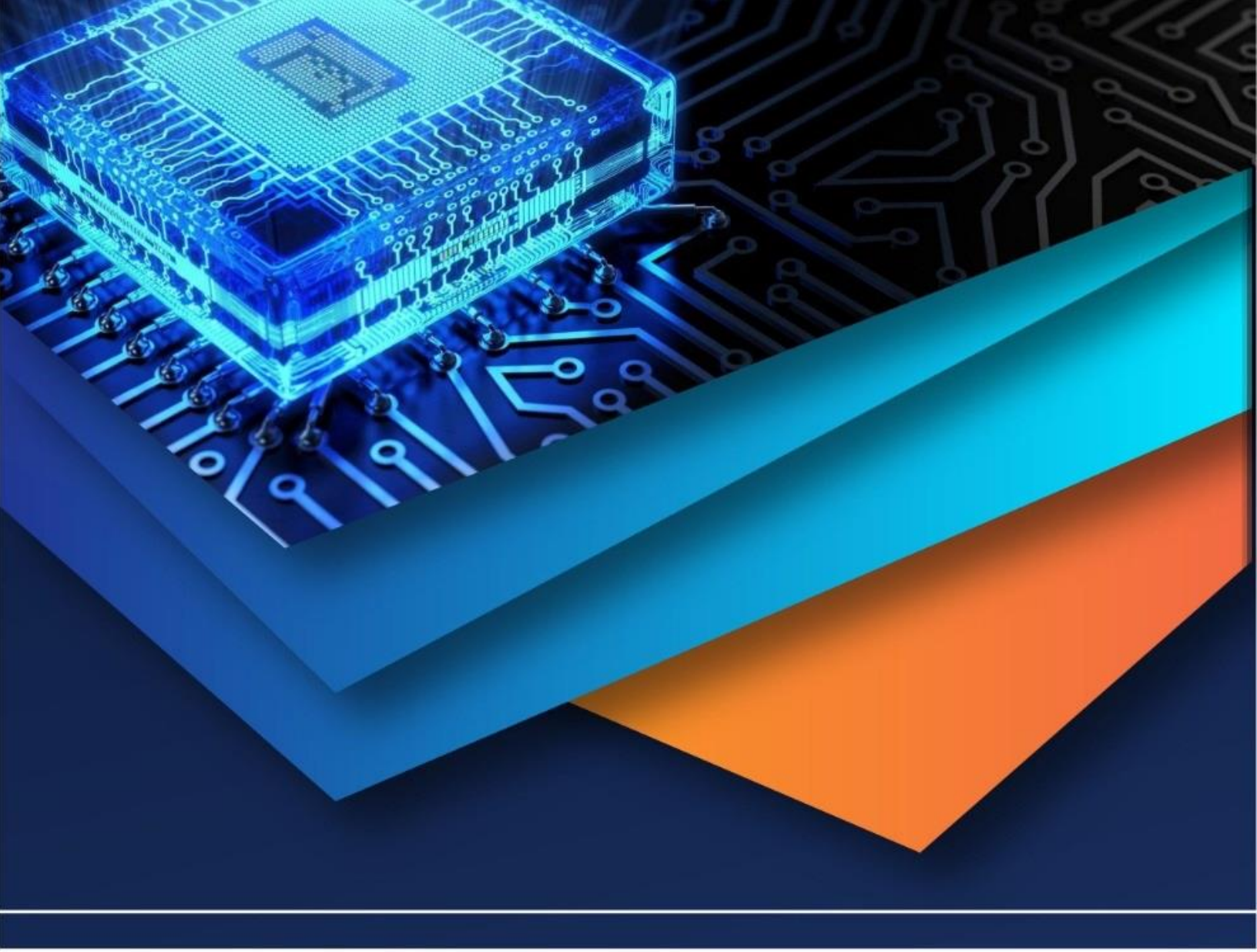
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