A PROJECT REPORT ON

MEDIBOT-AI BASED CHATBOT FOR HOSPITAL MANAGEMENT SYSTEM

Conducted at

MANAC INFOTECH PVT. LTD.

Submitted in the Partial fulfilment of the requirements for the award of

Bachelor of Science in
COMPUTER SCIENCE

Submitted by

KEERTHI THAKUR	1059-21- 539 -005
VALLURU SAI BALAJI	1059-21- 539 -006
B SWATHI	1059-21- 539 -032
KUNCHAKARI YASHOVARDHAN	1059-21- 539 -015
GUNDAVARAM AKASH	1059-21- 539 -035

Under the Guidance of

D. PRATAP RAO

Department of Computer Science

AVANTHI DEGREE & P.G COLLEGE

(Affiliated to OSMANIA UNIVERSITY)
Road No. 12, Above Honda Showroom, (Block II),
Narayanaguda, Hyderabad, Telangana, India-500020

(2021-2024)

AVANTHI DEGREE & P.G COLLEGE

(Affiliated to OSMANIA UNIVERSITY)
Narayanaguda, Hyderabad, Telangana, India-500020

BATCH CERTIFICATE

This is to certify that the project entitled on **"MEDIBOT-AI BASED CHATBOT FOR HOSPITAL MANAGEMENT SYSTEM"** is a Bonafide work done by

NAME OF THE STUDENT	HALL TICKET NO
KEERTHI THAKUR	1059-21- 539 -005
VALLURU SAI BALAJI	1059-21- 539 -006
B SWATHI	1059-21- 539 -032
KUNCHAKARI YASHOVARDHAN	1059-21- 539 -015
GUNDAVARAM AKASH	1059-21- 539 -035

The above-mentioned persons have carried out project work at the department of Computer Science, **AVANTHI DEGREE & P.G COLLEGE** during Sixth Semester.

Head of the Department **Principal**

Project Guide **External Examiner**

MANAC Infotech (P) Limited

Ref: M02/PROJ-23-24/D0804

PROJECT COMPLETION CERTIFICATE

This is to certify that

KEERTHI THAKUR	**1059-21- 539 -005**
VALLURU SAI BALAJI	**1059-21- 539 -006**
B SWATHI	**1059-21- 539 -032**
KUNCHAKARI YASHOVARDHAN	**1059-21- 539 -015**
GUNDAVARAM AKASH	**1059-21- 539 -035**

has successfully completed the Project on "**MEDIBOT-AI BASED CHATBOT FOR HOSPITAL MANAGEMENT SYSTEM**" in Partial fulfillment of the **B.Sc.** program for the duration of **90 days**.

SOFTWARE: PYTHON

We wish his/her good luck in all future endeavors.

Project Manager

ACKNOWLEDGEMENT

It is a matter of immense pleasure and privilege to pay special thanks to **D. PRATAP RAO,** Lecturer, **AVANTHI DEGREE & P.G COLLEGE,** who patiently supervised this work with a great critical insight and intellectual acumen. Under his guidance, things always looked within reach. In fact, without his consistent critical suggestions, cheerful encouragement and sincere cooperation, this report should have remained futile. I express my cordial thanks to other members of teaching faculty of this department for their valuable help and cooperation.

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KEERTHI THAKUR	**1059-21- 539 -005**
VALLURU SAI BALAJI	**1059-21- 539 -006**
B SWATHI	**1059-21- 539 -032**
KUNCHAKARI YASHOVARDHAN	**1059-21- 539 -015**
GUNDAVARAM AKASH	**1059-21- 539 -035**

STUDENT DECLARATION

We hereby declare that the project report entitled "**MEDIBOT-AI BASED CHATBOT FOR HOSPITAL MANAGEMENT SYSTEM**" submitted in partial fulfilment of the requirement for the award of Bachelors in Science Degree from **OSMANIA UNIVERSITY** under the guidance of **D. PRATAP RAO** is an original piece of work. The result drawn thereon are based on the data collected originally by me for the purpose of the research. Secondarily data where ever used has been duly acknowledged and cited appropriately in the report. No part of this report has been submitted for evaluation elsewhere for the award for any degree

KEERTHI THAKUR	**1059-21- 539 -005**
VALLURU SAI BALAJI	**1059-21- 539 -006**
B SWATHI	**1059-21- 539 -032**
KUNCHAKARI YASHOVARDHAN	**1059-21- 539 -015**
GUNDAVARAM AKASH	**1059-21- 539 -035**

SUPERVISOR CERTIFICATE

I certify that the project report entitled "**MEDIBOT-AI BASED CHATBOT FOR HOSPITAL MANAGEMENT SYSTEM**" submitted elsewhere for the degree of bachelor in Science by

KEERTHI THAKUR	**1059-21- 539 -005**
VALLURU SAI BALAJI	**1059-21- 539 -006**
B SWATHI	**1059-21- 539 -032**
KUNCHAKARI YASHOVARDHAN	**1059-21- 539 -015**
GUNDAVARAM AKASH	**1059-21- 539 -035**

is an original research work carried out by his during the period from **2021 to 2024** under my guidance and supervision. Further, this work has not been submitted elsewhere for the award of any Degree, Diploma, or other Titles in this university or any other university or institute of Higher learning.

D. PRATAP RAO

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MEDIBOT-AI BASED CHATBOT FOR HOSPITAL MANAGEMENT SYSTEM

ABSTRACT

The healthcare sector represents one of the most significant segments of the economy. A reliable healthcare system ensures a strong economy by increasing life expectancy, contributing to national growth, and reducing the burden of families. The purpose of this project is to implement a proper healthcare management system integrating all the basic functionalities powered by an Artificial Intelligent chatbot that is capable of having a very organic conversation with the user and solving their queries using knowledge base. The knowledge base is a real-time data collected in a JSON format which is pre-processed to make it ready for further processing using bag of words. The information is received and delivered in both speech and text formats. The chatbot can provide navigation links according to the requests of a user. Furthermore, it is capable of predicting the problem by performing symptom diagnosis and recommending a doctor to be consulted or any immediate measures to be taken. In addition, it also provides information regarding diagnostics beforehand.

CHAPTER-1

INTRODUCTION

An artificial intelligence (AI) chatbot is a computer programme that mimics human communication. It is a piece of software that communicates with humans using written language. It is frequently embedded in web pages or other digital applications to answer customer inquiries without the need for human agents, resulting in low-cost and hassle-free customer service. Chatbots based on machine learning produce an AI chatbot that is very capable of having an organic conversation with the user and answering their queries. Chatbots use the data that is provided to them to answer queries as accurately as possible using various training algorithms. In our proposed system we create a conversational chatbot that is integrated into a hospital website.

It is trained with machine learning algorithms and serves as an extremely efficient interface between the user and the application. There is no predefined format in which users can ask their questions. The chatbot responds to the query in the best way possible. Users have the option of submitting a query in both text and speech format. Users can use this chatbot to access hospital information, doctor availability, diagnostics, and other related data. They are navigated to different pages according to their requests, which makes it easier and faster for them to explore. They can schedule appointments and identify the problem by describing the symptoms in order to be prepared. This allows them to take any necessary precautions and schedule an appointment with the doctor as soon as possible.

CHAPTER-2

LITERATURE SURVEY

TITLE: "Web-based chatbot for frequently asked queries (FAQ) in hospitals"

ABSTRACT: Objectives Local hospitals are operated by the resigned association of patients as passive communication channels. The online hospital data related to the users' queries are not transparent and reliable. Therefore, it is crucial to have an intelligent web chatbot that manages user requests and provides quick access to local hospital information. In this paper, we present a framework and functionality of a chatbot developed using web technologies. Methods The bot engine was integrated by several machine learning approaches like gradient descent (GD) and natural language processing (NLP) algorithms. The trained data entered into the bot were split into mini-word batches, and the GD algorithm was applied sequentially on each mini-batch. The NLP methods involved in converting a word to its stem with a text result less readable by humans. Results The employed ML algorithms were successfully incorporated to manage the alternative synchronisation of text and voice messages. Conclusions The proposed bot can be a better solution for data extraction from local hospitals. It is an insightful communication channel for both users and hospital staff.

TITLE: "Chatbot for disease prediction and treatment recommendation using machine learning"

ABSTRACT: Hospitals are the most widely used means by which a sick person gets medical check-ups, disease diagnosis and treatment recommendation. This has been a practice by almost all the people over the world. People consider it as the most reliable means to check their health status. The proposed system is to create an alternative to this conventional method of visiting a hospital and making an appointment with a doctor to get diagnosis. This research intends to apply the concepts of natural language processing and machine learning to create a chatbot application. People can interact with the chatbot just like they do with another human and through a series of queries, chatbot will identify the symptoms of the user and thereby, predicts the disease and recommends treatment. This system can be of great use to people in conducting daily check-ups, makes people aware of their health status and encourages people to make proper measures to remain healthy. According to this research, such a system is not widely used and people are less

TITLE: "Chatbot for healthcare system using artificial intelligence",

ABSTRACT: Healthcare is very important to lead a good life. However, it is very difficult to obtain the consultation with the doctor for every health problem. The idea is to create a medical chatbot using Artificial Intelligence that can diagnose the disease and provide basic details about the disease before consulting a doctor. This will help to reduce healthcare costs and improve accessibility to medical knowledge through medical chatbot. The chatbots are computer programs that use natural language to interact with users. The chatbot stores the data in the database to identify the sentence keywords and to make a query decision and answer the question. Ranking and sentence similarity calculation is performed using n-gram, TFIDF and cosine similarity. The score will be obtained for each sentence from the given input sentence and more similar sentences will be obtained for the query given. The third party, the expert program, handles the question presented to the bot that is not understood or is not present in the database.

TITLE: Development of artificial intelligence based chatbot using deep neural network",

ABSTRACT: No matter how well-known colleges are, there will always be concerns that people have during the application process and even after they have been accepted. The college hosts a variety of events, ranging from departmental activities to club activities. Not everyone is likely aware of all events. Chatbot bridges gap between people and information. The world is becoming more automated, and people expect services to become more automated as well. A chatbot is software that responds to user questions and provides information from a knowledge base. The purpose of this project is to create a chatbot for VNRVJIET that will answer queries raised about fests, departmental activities, events, clubs, infrastructure, placement data, admission procedure, and others. The proposed methodology consists of a chatbot built using Deep Neural Networks and speech recognition capabilities. The information is delivered in both speech and text modes using the proposed methodology. Data is collected and formatted in JSON format initially. The prepared data is preprocessed and then the bag of words algorithm is applied to it. The bag of words algorithm is most influential method for object categorization. The key aspect of using this algorithm is for converting the word vector to a numerical data set for machine to do a deeper analysis. A deep neural network is created using tensor flow API, and the speech recognition function is defined for the input query and output response. Finally, chatbot function is defined and utilized for generating responses for any given query

CHAPTER-3
SYSTEM ANALYSIS

3.1 EXISTING SYSTEM

The existing system for the "AI-Based Chatbot for Hospital Management System" encompasses a user-centric interface, fostering interaction through both text and voice commands. Powered by Natural Language Processing (NLP) algorithms, the chatbot navigates a real-time knowledge base stored in JSON format, offering seamless retrieval of healthcare information. Users initiate conversations, prompting the chatbot to process queries, understand user intent, and extract relevant information. The system supports multi-modal interaction, employing speech recognition and Text-to-Speech (TTS) functionalities for user convenience. Healthcare functionalities include symptom diagnosis, doctor recommendations, and immediate measure suggestions in emergency scenarios. The chatbot's predictive analysis capabilities anticipate potential health issues based on user-provided data. Responses are generated organically, considering the conversational context, and continuous learning mechanisms enable the chatbot to update its knowledge base with evolving medical information. The technology stack involves programming languages like Python, NLP libraries such as NLTK or SpaCy, and web development frameworks like Flask or Django. Security measures include data encryption, user authentication, and adherence to privacy regulations such as HIPAA for safeguarding sensitive patient information.

DISADVANTAGES

Limited Context Understanding:

The chatbot's ability to understand and interpret user queries may be constrained, especially in handling complex or ambiguous language, leading to potential misinterpretations.

Dependency on Knowledge Base Accuracy:

The effectiveness of the chatbot heavily relies on the accuracy and completeness of the knowledge base. Inaccurate or outdated information may result in incorrect responses and recommendations.

Speech Recognition Challenges:

The accuracy of speech recognition may be compromised in noisy environments or for users with accents, limiting the effectiveness of voice-based interactions.

3.2 PROPOSED SYSTEM

The proposed system focuses on integrating all basic features in one place in an application and powering it with an AI chatbot further adds new functionalities like easy navigation, access to the data on availability of doctors, diagnostics information, symptom analysis, precautionary or instant medication suggestions and appointment booking, all these in a single application. Further, considering people who cannot write fluently, those with special needs and those in emergency situations, both voice and text input formats are accepted by the chatbot. We are building the website using Flask, which contains Login and registration page, dashboard of website, appointment booking and viewing pages and also the animated chatbot button at the end of every page of the website.

Speech enabled chatbots provide higher level of interactivity and usability. User can either give their input using text or speech and similarly chatbot is able to give its response by either text or voice. In our project, this process of conversion between text and speech is done by using speech_recognition and pyttsx3 python modules.

A. Voice Input by User (Speech to Text):

   Using systems inbuilt microphone live audio input can be transcribed using Google's Web Speech API (recognize_google()).By using adjust for ambient noise function we can set the engine to listen to ambient noise for some time period(here 2 seconds) and adjust energy threshold accordingly. If speech Recognizer unable to detect the speech correctly, respective error messages will be given as response.

B. Voice Output by Bot (Text to Speech):

   Pyttsx3 is a Text to Speech Conversion Python Library. Using pyttsx3.init() an engine instance will be created for which we can set various properties like voice rate, volume level and also voices (male or female).We can directly pass the text that need to be converted to voice to this engine and output will be voice saying the text accordingly. User gives a question to interact with the chatbot.

Following that, an LSTM model is used to analyse the user query. LSTMs, shown in Fig. 1, are a type of recurrent neural network that, rather than simply passing its result to the next section of the network, performs a series of math tasks to work on its memory. There are four "gates" in an LSTM. They are forget gate, remember gate, learn gate, and output gate.

Step 1: The three information sources enter the LSTM and are directed to the forget or learn entryways. Long term information is shipped off the forget entryway, where some of it gets lost (the irrelated parts). The learn gate receives the short-term information and "E." This gate determines what information will be gathered.
Step 2: Data that goes through the forget entryway (it isn't neglected; failed to remember data stays at the door) and the learn entryway (it is learned) will be shipped off the remember entryway (which makes new long-term memory) and the utilization entryway (which updates momentary memory is the final result).

CHAPTER-4

SYSTEM REQUIREMENTS

4.1 HARDWARE REQUIREMENTS

MINIMUM (Required for Execution)		MY SYSTEM (Development)
System	Pentium IV 2.2 GHz	i3 Processor 5th Gen
Hard Disk	20 Gb	500 Gb
Ram	1 Gb	4 Gb

4.2 SOFTWARE REQUIREMENTS

Operating System	Windows 10/11
Development Software	Python 3.10
Programming Language	Python
Domain	Image Processing & Cloud Computing
Integrated Development Environment (IDE)	Visual Studio Code
Front End Technologies	HTML5, CSS3, Java Script
Back End Technologies or Framework	Django
Database Language	SQL
Database (RDBMS)	MySQL
Database Software	WAMP or XAMPP Server

Web Server or Deployment Server	Django Application Development Server
Design/Modelling	Rational Rose

CHAPTER-5

SYSTEM STUDY

5.1 FEASIBILITY STUDY

A feasibility study assesses the operational, technical and economic merits of the proposed project. The feasibility study is intended to be a preliminary review of the facts to see if it is worthy of proceeding to the analysis phase. From the systems analyst perspective, the feasibility analysis is the primary tool for recommending whether to proceed to the next phase or to discontinue the project.

5.2 FEASIBILITY ANALYSIS

1. TECHNICAL FEASIBILITY

2. OPERATIONAL FEASIBILITY

3. ECONOMIC FEASIBILITY

The feasibility study is a management-oriented activity. The objective of a feasibility study is to find out if an information system project can be done and to suggest possible alternative solutions.

Projects are initiated for two broad reasons:

1. Problems that lend themselves to systems solutions

2. Opportunities for improving through:

    (a) upgrading systems

    (b) altering systems

    (c) installing new systems

A feasibility study should provide management with enough information to decide:

- Whether the project can be done
- Whether the final product will benefit its intended users and organization
- What are the alternatives among which a solution will be chosen

- Is there a preferred alternative

TECHNICAL FEASIBILITY

A large part of determining resources has to do with assessing technical feasibility. It considers the technical requirements of the proposed project. The technical requirements are then compared to the technical capability of the organization. The systems project is considered technically feasible if the internal technical capability is sufficient to support the project requirements.

The analyst must find out whether current technical resources can be upgraded or added to in a manner that fulfils the request under consideration. This is where the expertise of system analysts is beneficial, since using their own experience and their contact with vendors they will be able to answer the question of technical feasibility.

The essential questions that help in testing the operational feasibility of a system include the following:

- Is the project feasible within the limits of current technology?
- Does the technology exist at all?
- Is it available within given resource constraints?
- Is it a practical proposition?
- Manpower- programmers, testers & debuggers
- Software and hardware
- Are the current technical resources sufficient for the new system?
- Can they be upgraded to provide to provide the level of technology necessary for the new system?
- Do we possess the necessary technical expertise, and is the schedule reasonable?
- Can the technology be easily applied to current problems?
- Does the technology have the capacity to handle the solution?
- Do we currently possess the necessary technology?

ECONOMIC FEASIBILITY

Economic analysis could also be referred to as cost/benefit analysis. It is the most frequently used method for evaluating the effectiveness of a new system. In economic analysis the procedure is to determine the benefits and savings that are expected from a candidate system and compare them with costs. If benefits outweigh costs, then the decision is made to design and implement the system. An entrepreneur must accurately weigh the cost versus benefits before taking an action.

Possible questions raised in economic analysis are:

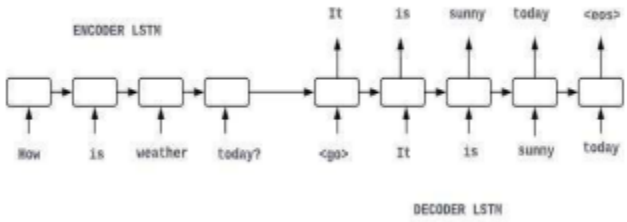
- Is the system cost effective?
- Do benefits outweigh costs?
- The cost of doing full system study
- The cost of business employee time
- Estimated cost of hardware
- Estimated cost of software/software development
- Is the project possible, given the resource constraints?
- What are the savings that will result from the system?
- Cost of employees' time for study
- Cost of packaged software/software development
- Selection among alternative financing arrangements (rent/lease/purchase)

The concerned business must be able to see the value of the investment it is pondering before committing to an entire system study. If short-term costs are not overshadowed by long-term gains or produce no immediate reduction in operating costs, then the system is not economically feasible, and the project should not proceed any further. If the expected benefits equal or exceed costs, the system can be judged to be economically feasible. Economic analysis is used for evaluating the effectiveness of the proposed system.

CHAPTER-6

SYSTEM DESIGN

6.1 SYSTEM ARCHITECTURE



6.2 UML DIAGRAMS

UML stands for Unified Modeling Language. UML is a standardized general-purpose modeling language in the field of object-oriented software engineering. The standard is managed, and was created by, the Object Management Group.

The goal is for UML to become a common language for creating models of object oriented computer software. In its current form UML is comprised of two major components: a Meta-model and a notation. In the future, some form of method or process may also be added to; or associated with, UML.

The Unified Modeling Language is a standard language for specifying, Visualization, Constructing and documenting the artifacts of software system, as well as for business modeling and other non-software systems.

The UML represents a collection of best engineering practices that have proven successful in the modeling of large and complex systems.

The UML is a very important part of developing objects oriented software and the software development process. The UML uses mostly graphical notations to express the design of software projects.

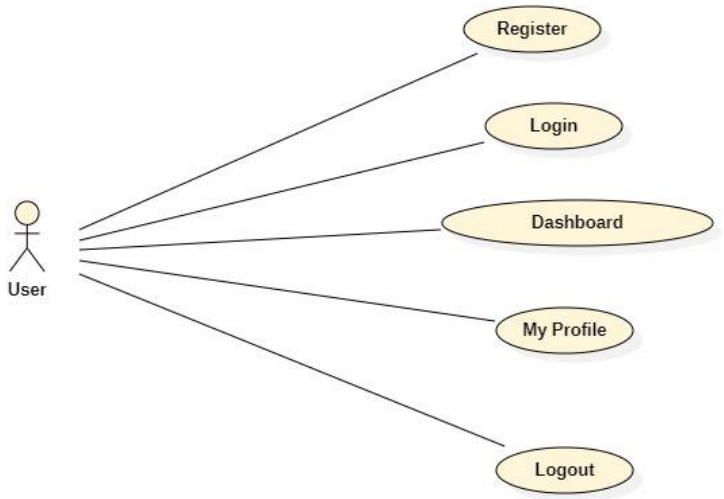
GOALS

The Primary goals in the design of the UML are as follows:

1. Provide users a ready-to-use, expressive visual modeling Language so that they can develop and exchange meaningful models.
2. Provide extendibility and specialization mechanisms to extend the core concepts.
3. Be independent of particular programming languages and development process.
4. Provide a formal basis for understanding the modeling language.
5. Encourage the growth of OO tools market.
6. Support higher level development concepts such as collaborations, frameworks, patterns and components.
7. Integrate best practices.

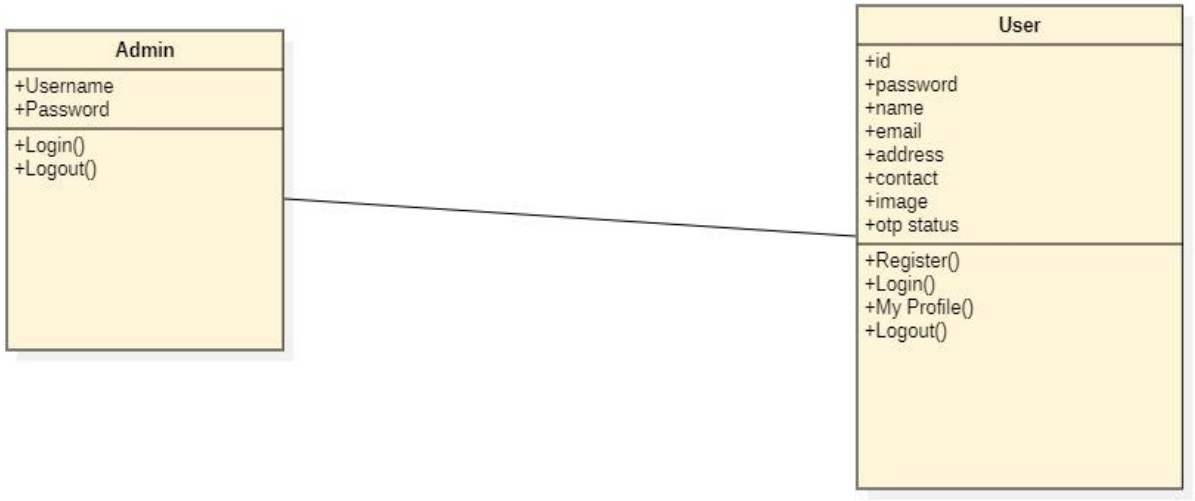
USE CASE DIAGRAM

A use case diagram in the Unified Modeling Language (UML) is a type of behavioral diagram defined by and created from a Use-case analysis. Its purpose is to present a graphical overview of the functionality provided by a system in terms of actors, their goals (represented as use cases), and any dependencies between those use cases. The main purpose of a use case diagram is to show what system functions are performed for which actor. Roles of the actors in the system can be depicted.



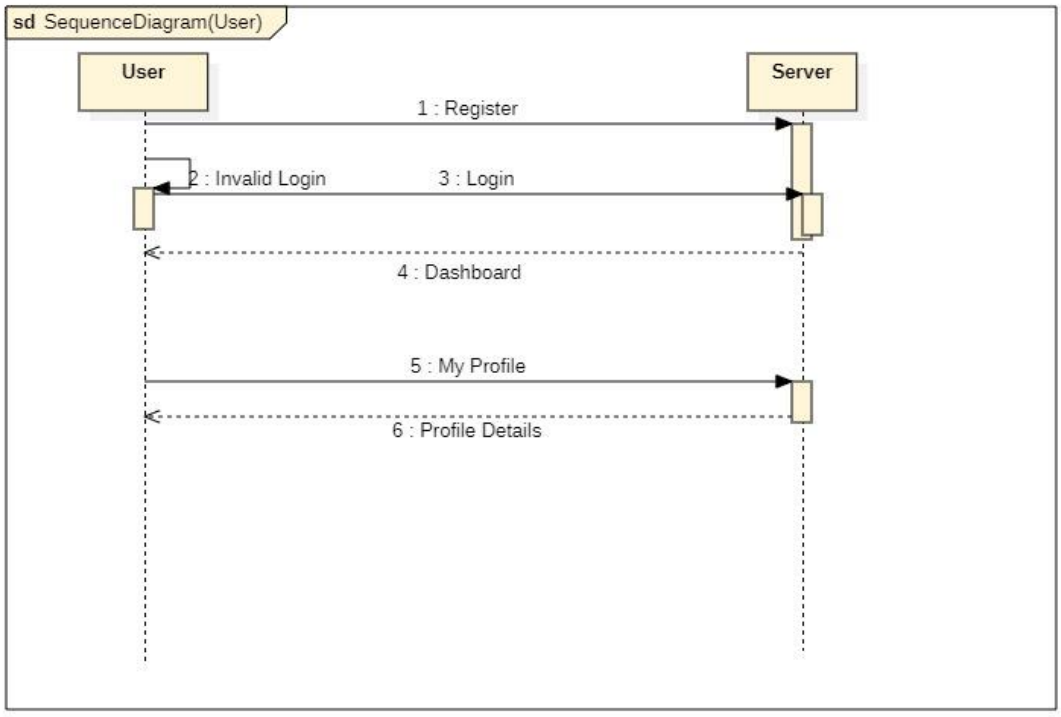
CLASS DIAGRAM

In software engineering, a class diagram in the Unified Modeling Language (UML) is a type of static structure diagram that describes the structure of a system by showing the system's classes, their attributes, operations (or methods), and the relationships among the classes. It explains which class contains information.



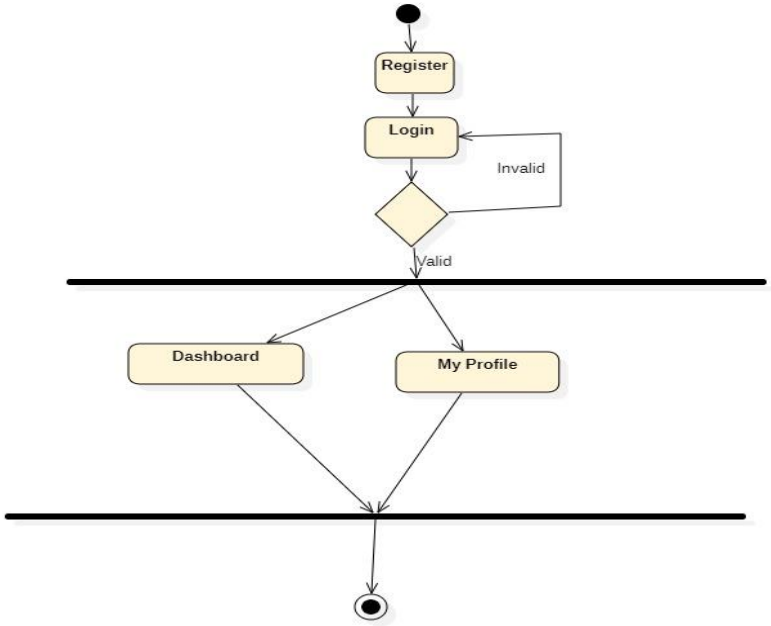
SEQUENCE DIAGRAM

A sequence diagram in Unified Modeling Language (UML) is a kind of interaction diagram that shows how processes operate with one another and in what order. It is a construct of a Message Sequence Chart. Sequence diagrams are sometimes called event diagrams, event scenarios, and timing diagrams.



ACTIVITY DIAGRAM

Activity diagrams are graphical representations of workflows of stepwise activities and actions with support for choice, iteration and concurrency. In the Unified Modeling Language, activity diagrams can be used to describe the business and operational step-by-step workflows of components in a system. An activity diagram shows the overall flow of control.



DEPLOYMENT DIAGRAM

Deployment Diagram is a type of diagram that specifies the physical hardware on which the software system will execute. It also determines how the software is deployed on the underlying hardware. It maps software pieces of a system to the device that are going to execute it.

The deployment diagram maps the software architecture created in design to the physical system architecture that executes it. In distributed systems, it models the distribution of the software across the physical nodes.

The software systems are manifested using various artifacts, and then they are mapped to the execution environment that is going to execute the software such as nodes. Many nodes are involved in the deployment diagram; hence, the relation between them is represented using communication paths.

There are two forms of a deployment diagram.

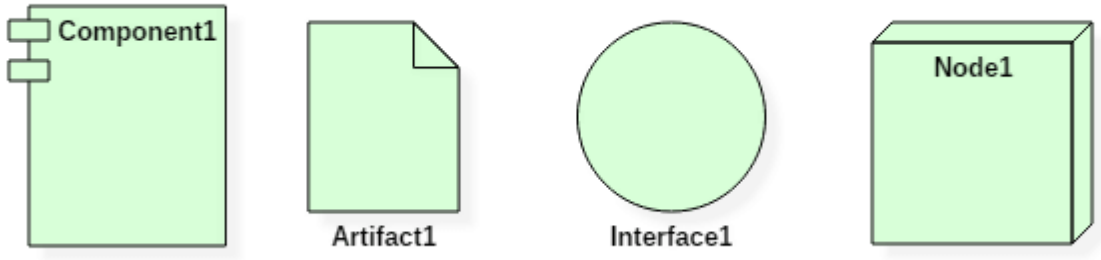
- Descriptor form
    - It contains nodes, the relationship between nodes and artifacts.
- Instance form

- It contains node instance, the relationship between node instances and artifact instance.
- An underlined name represents node instances.

Purpose of a deployment diagram

Deployment diagrams are used with the sole purpose of describing how software is deployed into the hardware system. It visualizes how software interacts with the hardware to execute the complete functionality. It is used to describe software to hardware interaction and vice versa.

Deployment Diagram Symbol and notations



Deployment Diagram Notations

CHAPTER-7

INPUT AND OUTPUT DESIGN

7.1 INPUT DESIGN

The input design is the link between the information system and the user. It comprises the developing specification and procedures for data preparation and those steps are necessary to put transaction data in to a usable form for processing can be achieved by inspecting the computer to read data from a written or printed document or it can occur by having people keying the data directly into the system. The design of input focuses on controlling the amount of input required, controlling the errors, avoiding delay, avoiding extra steps and keeping the process simple. The input is designed in such a way so that it provides security and ease of use with retaining the privacy. Input Design considered the following things:

- What data should be given as input?
- How the data should be arranged or coded?
- The dialog to guide the operating personnel in providing input.
- Methods for preparing input validations and steps to follow when error occur.

OBJECTIVES

1.Input Design is the process of converting a user-oriented description of the input into a computer-based system. This design is important to avoid errors in the data input process and show the correct direction to the management for getting correct information from the computerized system.

2.It is achieved by creating user-friendly screens for the data entry to handle large volume of data. The goal of designing input is to make data entry easier and to be free from errors. The data entry screen is designed in such a way that all the data manipulates can be performed. It also provides record viewing facilities.

3.When the data is entered it will check for its validity. Data can be entered with the help of screens. Appropriate messages are provided as when needed so that the user will not be in maize of instant. Thus the objective of input design is to create an input layout that is easy to follow

7.2 OUTPUT DESIGN

A quality output is one, which meets the requirements of the end user and presents the information clearly. In any system results of processing are communicated to the users and to other system through outputs. In output design it is determined how the information is to be displaced for immediate need and also the hard copy output. It is the most important and direct source information to the user. Efficient and intelligent output design improves the system's relationship to help user decision-making.

1. Designing computer output should proceed in an organized, well thought out manner; the right output must be developed while ensuring that each output element is designed so that people will find the system can use easily and effectively. When analysis design computer output, they should Identify the specific output that is needed to meet the requirements.

2.Select methods for presenting information.

3.Create document, report, or other formats that contain information produced by the system.

The output form of an information system should accomplish one or more of the following objectives.

- Convey information about past activities, current status or projections of the
- Future.
- Signal important events, opportunities, problems, or warnings.
- Trigger an action.
- Confirm an action.

CHAPTER-8

IMPLEMENTATION

8.1 MODULES

- User Interaction Module
- Artificial Intelligence (AI) and Knowledge Base Module
- Healthcare Functionality Module
- Communication and Multi-Modal Interaction Module
- Security and Integration Module

8.1.1 MODULE DESCRIPTION

User Interaction Module

This module encompasses the user interface and interaction components. It allows users to engage with the chatbot using both text and voice commands. It includes features for processing user queries, understanding intent, and providing responses in a user-friendly manner.

Artificial Intelligence (AI) and Knowledge Base Module

The AI and Knowledge Base module is the core intelligence of the system. It includes Natural Language Processing (NLP) algorithms for interpreting user queries and a real-time knowledge base in JSON format. This module enables the chatbot to retrieve and process relevant healthcare information to respond to user inquiries.

Healthcare Functionality Module

This module incorporates various healthcare functionalities such as symptom diagnosis, doctor recommendations, and immediate measure suggestions. It leverages predictive analysis capabilities to anticipate potential health issues based on user-provided data. The module is designed to assist users in making informed decisions about their health.

Communication and Multi-Modal Interaction Module

The Communication module integrates speech recognition and Text-to-Speech (TTS) functionalities. It enables users to interact with the chatbot through voice commands and receive

responses in both text and speech formats. This multi-modal interaction enhances user experience and accessibility.

Security and Integration Module

The Security and Integration module addresses privacy concerns and system integration challenges. It includes measures such as data encryption, user authentication, and adherence to healthcare privacy regulations (e.g., HIPAA). Additionally, it facilitates integration with other hospital management systems or electronic health records, ensuring seamless data flow and security.

CHAPTER-9

SOFTWARE ENVIRONMENT

9.1 PYTHON

What is Python programming language?

Python is a **high-level, general-purpose, interpreted** programming language.

1) High-level

Python is a high-level programming language that makes it easy to learn. Python doesn't require you to understand the details of the computer in order to develop programs efficiently.

2) General-purpose

Python is a general-purpose language. It means that you can use Python in various domains including:

- Web applications
- Big data applications
- Testing
- Automation
- Data science, machine learning, and AI
- Desktop software
- Mobile apps

The targeted language like SQL which can be used for querying data from relational databases.

3) Interpreted

Python is an interpreted language. To develop a Python program, you write Python code into a file called source code.

To execute the source code, you need to convert it to the machine language that the computer can understand. And the Python **interpreter** turns the source code, line by line, once at a time, into the machine code when the Python program executes.

Compiled languages like Java and C# use a **compiler** that compiles the whole source code before the program executes.

Why Python

Python increases your productivity. Python allows you to solve complex problems in less time and fewer lines of code. It's quick to make a prototype in Python.

Python becomes a solution in many areas across industries, from web applications to data science and machine learning.

Python is quite easy to learn in comparison with other programming languages. Python syntax is clear and beautiful.

Python has a large ecosystem that includes lots of libraries and frameworks.

Python is cross-platform. Python programs can run on Windows, Linux, and macOS.

Python has a huge community. Whenever you get stuck, you can get help from an active community.

Python developers are in high demand.

History of Python

- Python was created by Guido Van Rossum.
- The design began in the late 1980s and was first released in February 1991.

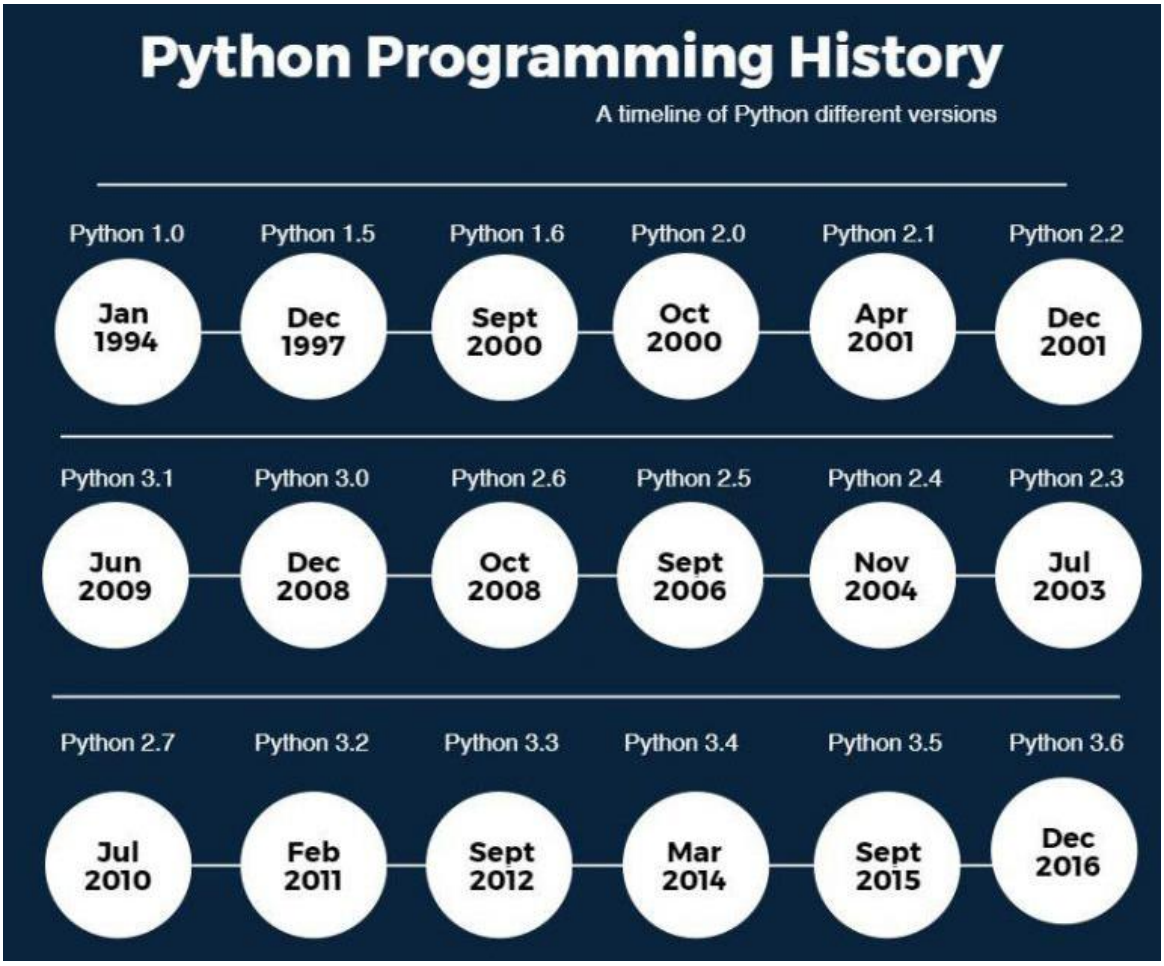
Why the name Python?

No. It wasn't named after a dangerous snake. Rossum was fan of a comedy series from late 70s. The name "Python" was adopted from the same series "Monty Python's Flying Circus".

Python Version History

Implementation started - December 1989

Internal releases – 1990

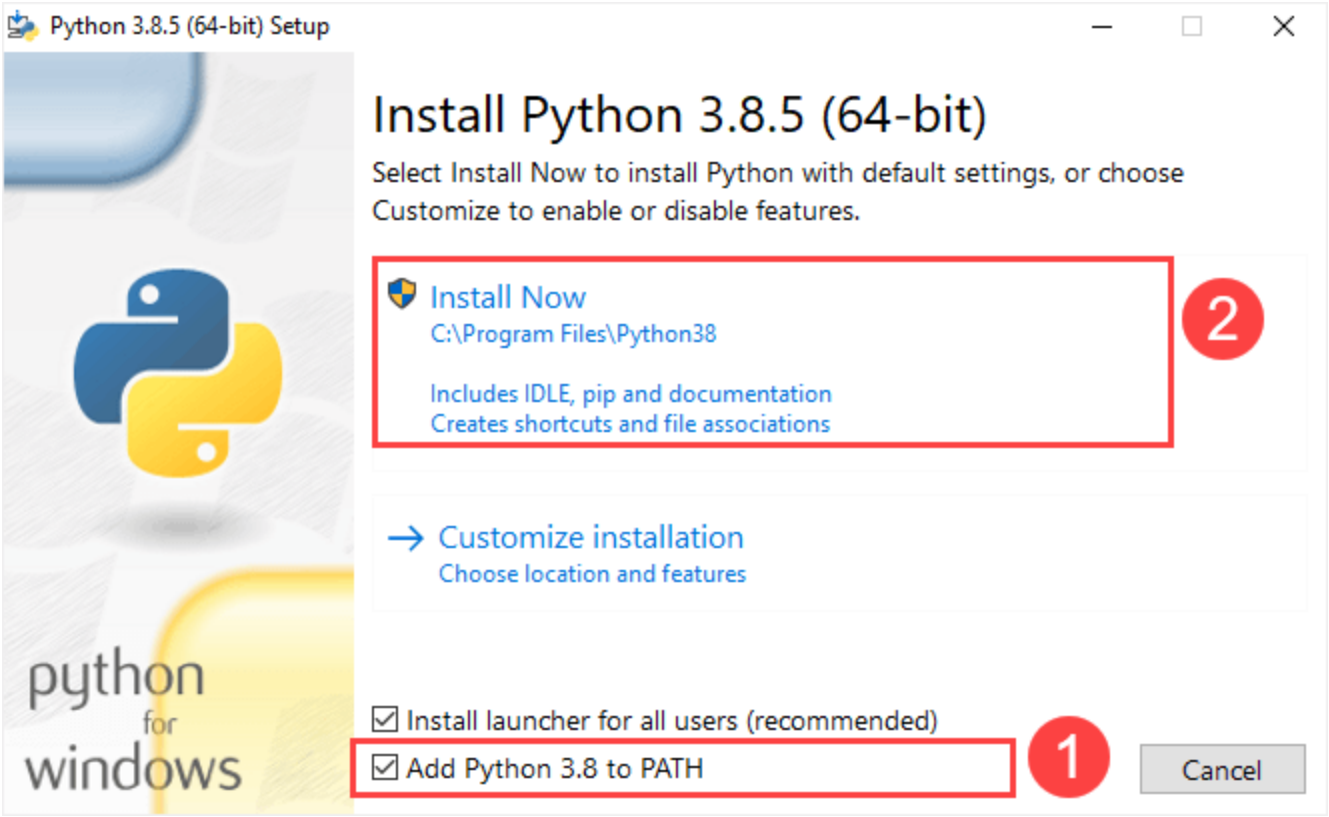


Install Python on Windows

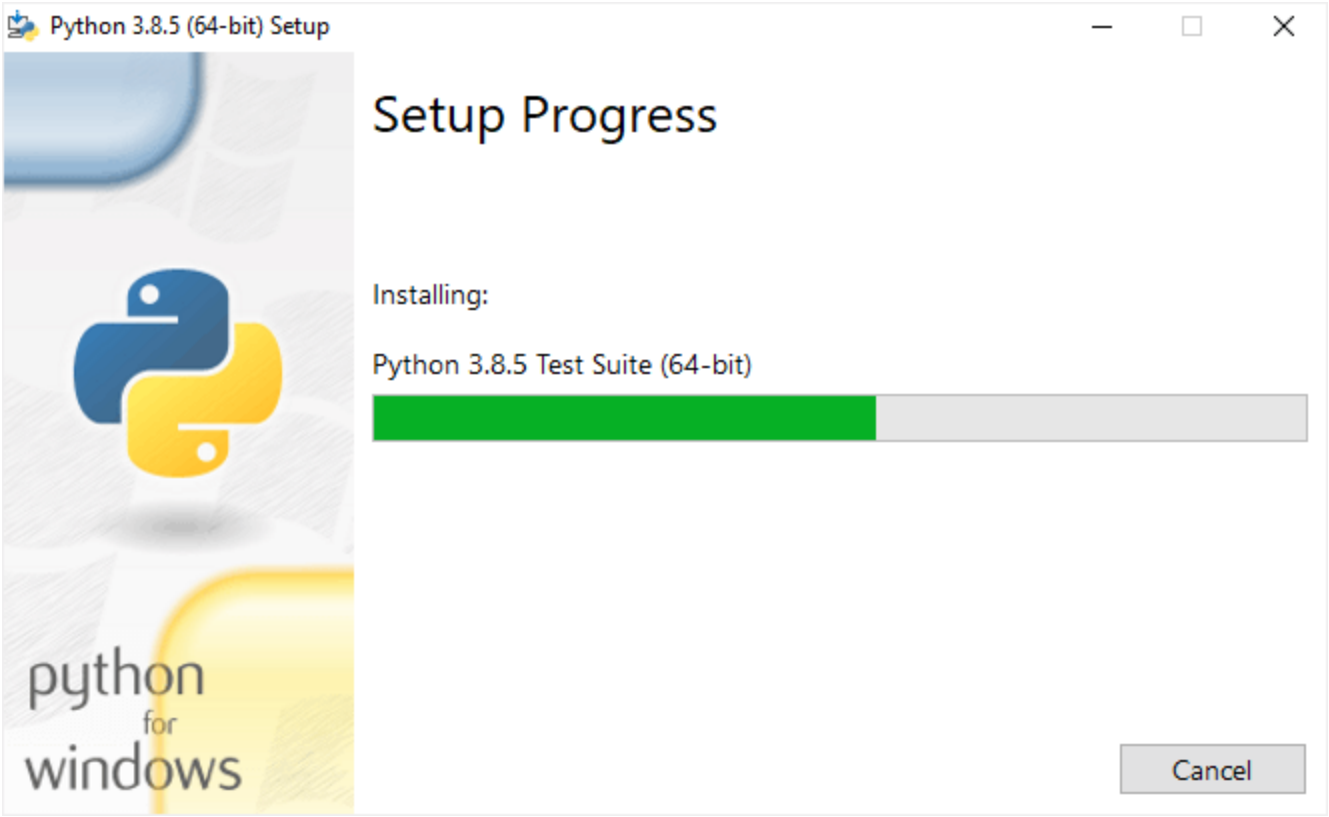
First, download the latest version of Python from the download page.

Second, double-click the installer file to launch the setup wizard.

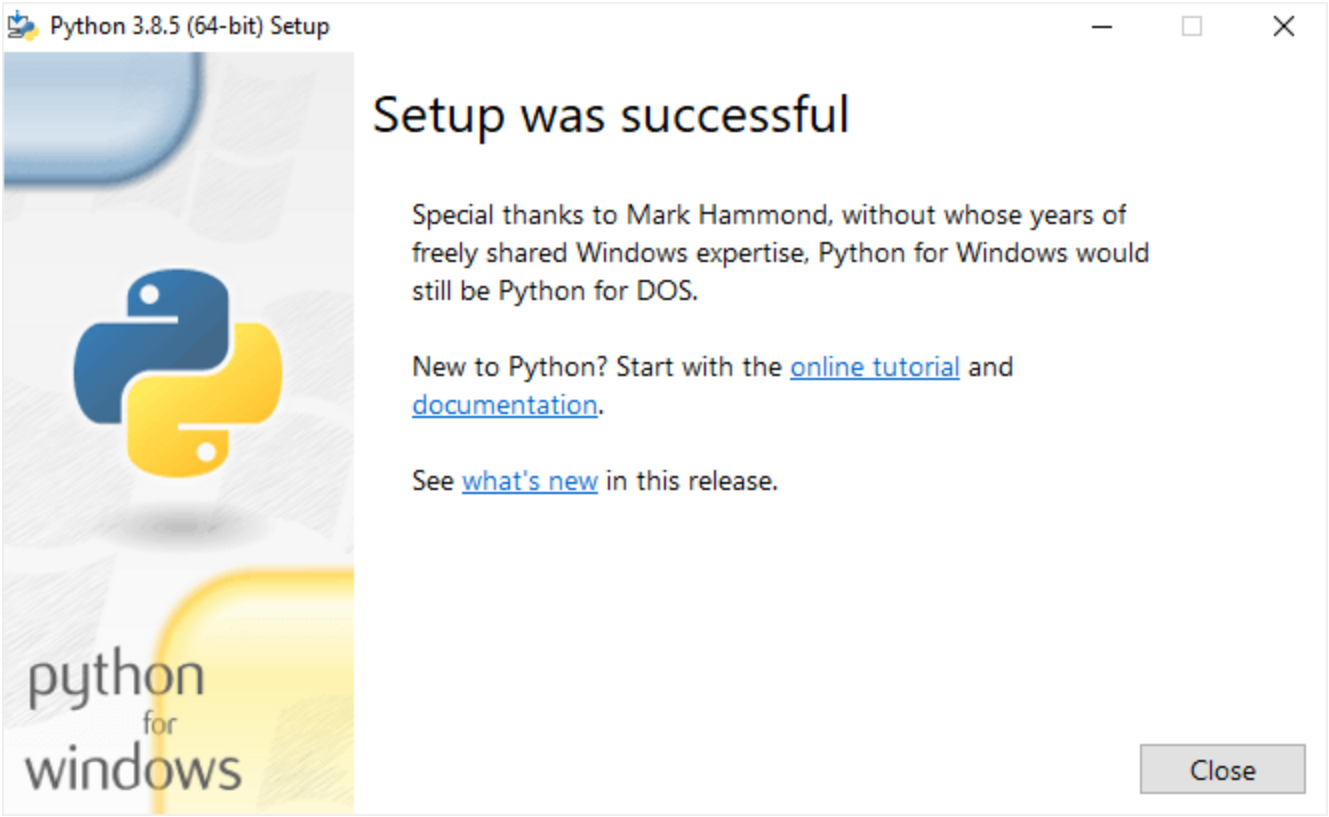
In the setup window, you need to check the **Add Python 3.8 to PATH** and click Install Now to begin the installation.



It'll take a few minutes to complete the setup.

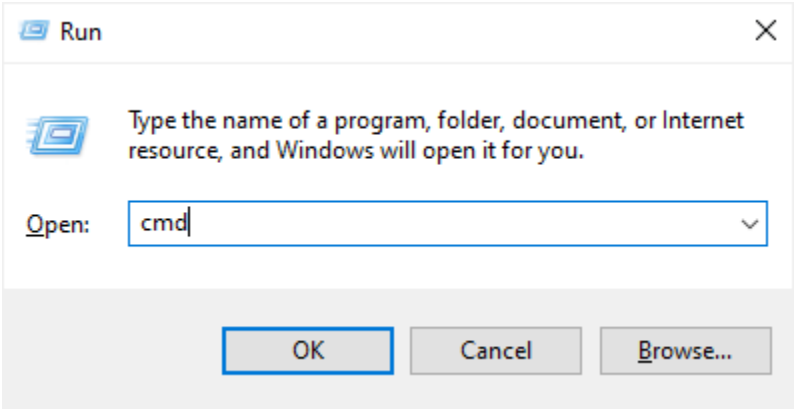


Once the setup completes, you'll see the following window:

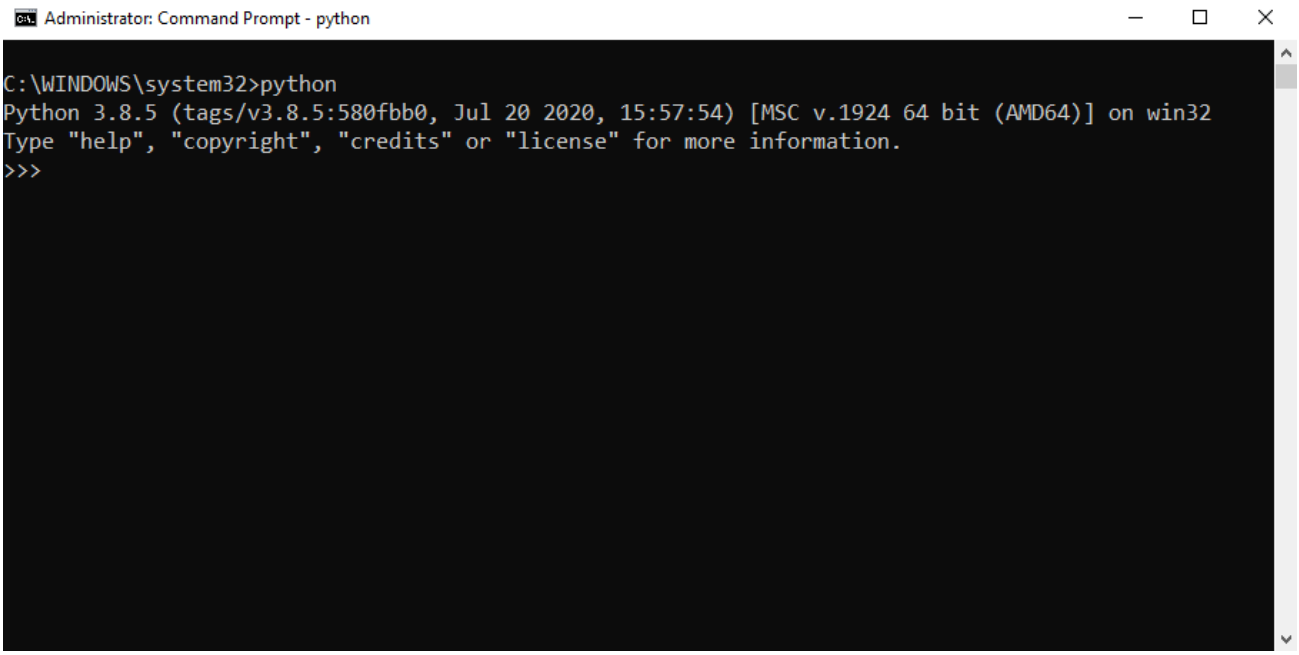


Verify the installation

To verify the installation, you open the Run window and type cmd and press Enter:



In the Command Prompt, type python command as follows:



If you see the output like the above screenshot, you've successfully installed Python on your computer.

To exit the program, you type Ctrl-Z and press Enter.

If you see the following output from the Command Prompt after typing the python command:

'python' is not recognized as an internal or external command,
operable program or batch file.

Likely, you didn't check the **Add Python 3.8 to PATH** checkbox when you install Python.

Install Python on macOS

It's recommended to install Python on macOS using an official installer. Here are the steps:

- First, download a Python release for macOS.
- Second, run the installer by double-clicking the installer file.
- Third, follow the instruction on the screen and click the Next button until the installer completes.

Install Python on Linux

Before installing Python 3 on your Linux distribution, you check whether Python 3 was already installed by running the following command from the terminal:

```
python3 --version
```

If you see a response with the version of Python, then your computer already has Python 3 installed. Otherwise, you can install Python 3 using a package management system.

For example, you can install Python 3.10 on Ubuntu using apt:

```
sudo apt install python3.10
```

To install the newer version, you replace 3.10 with that version.

A quick introduction to the Visual Studio Code

Visual Studio Code is a lightweight source code editor. The Visual Studio Code is often called VS Code. The VS Code runs on your desktop. It's available for Windows, macOS, and Linux.

VS Code comes with many features such as IntelliSense, code editing, and extensions that allow you to edit Python source code effectively. The best part is that the VS Code is open-source and free.

Besides the desktop version, VS Code also has a browser version that you can use directly in your web browser without installing it.

This tutorial teaches you how to set up Visual Studio Code for a Python environment so that you can edit, run, and debug Python code.

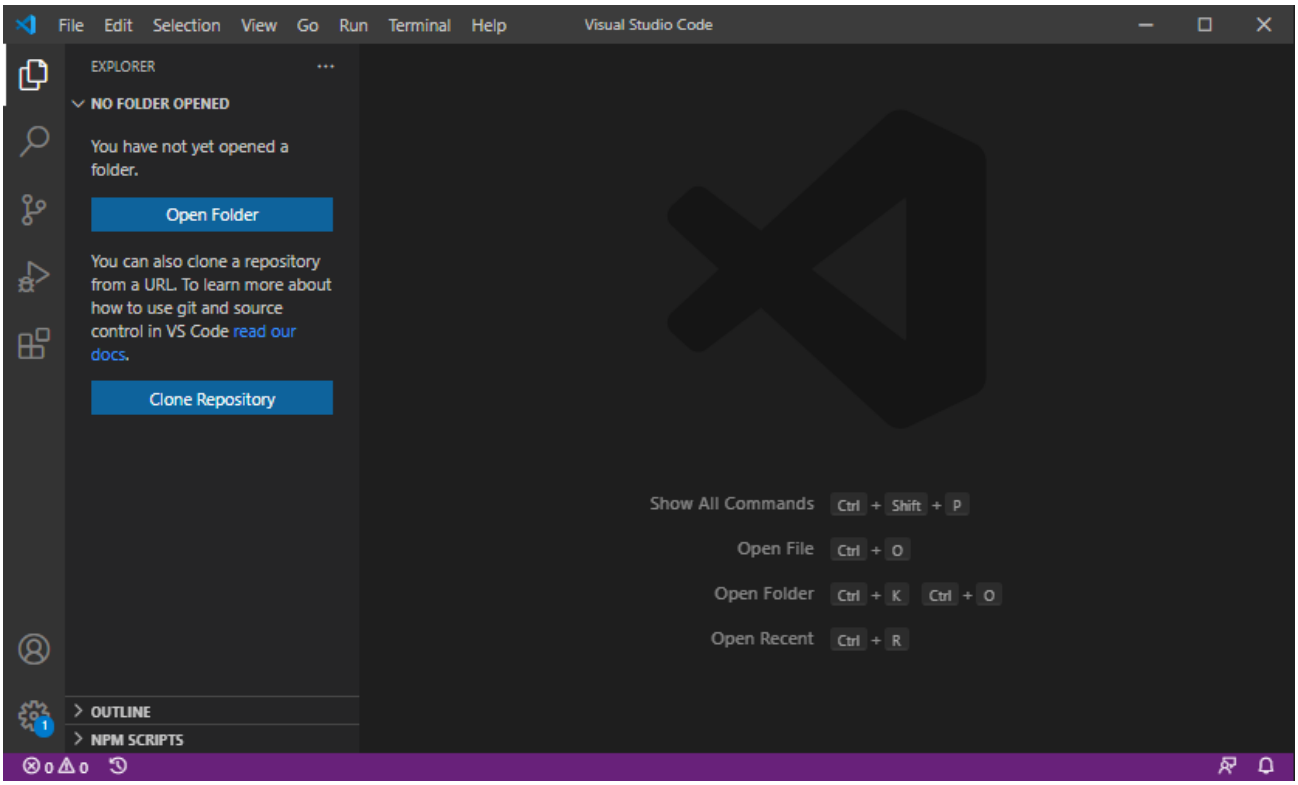
Setting up Visual Studio Code

To set up the VS Code, you follow these steps:

First, navigate to the VS Code official website and download the VS code based on your platform (Windows, macOS, or Linux).

Second, launch the setup wizard and follow the steps.

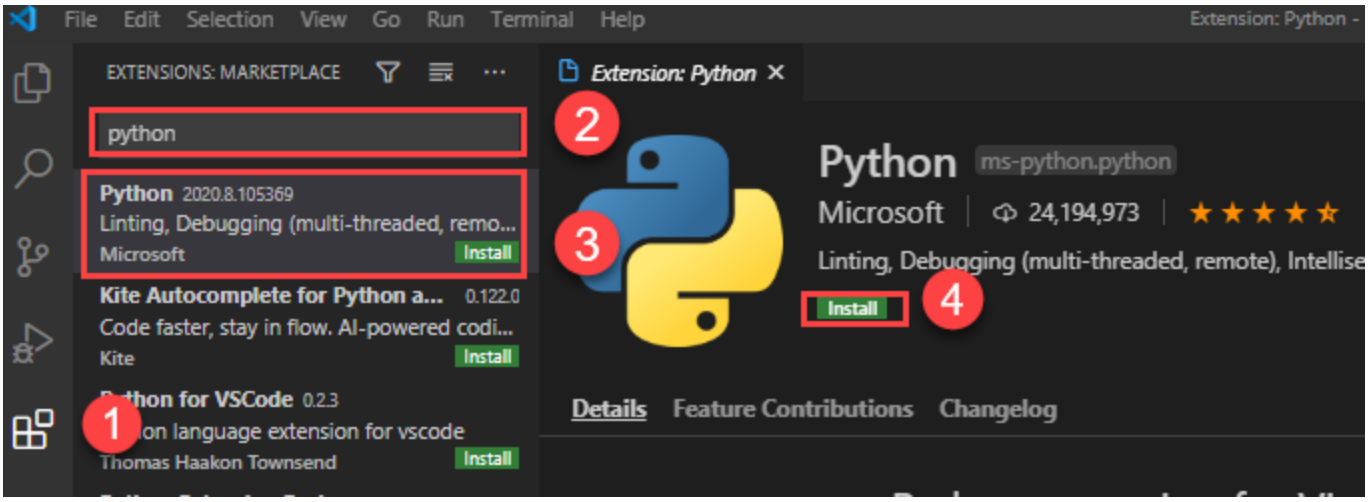
Once the installation completes, you can launch the VS code application:



Install Python Extension

To make the VS Code works with Python, you need to install the Python extension from the Visual Studio Marketplace.

The following picture illustrates the steps:



- First, click the **Extensions** tab.
- Second, type the python extension pack keyword on the search input.
- Third, click the Python extension pack. It'll show detailed information on the right pane.
- Finally, click the **Install** button to install the Python extension.

Now, you're ready to develop the first program in Python.

Creating a new Python project

First, create a new folder called helloworld.

Second, launch the VS code and open the helloworld folder.

Third, create a new app.py file and enter the following code and save the file:

```
print('Hello, World!')
```

Code language:Python(python)

The print() is a built-in function that displays a message on the screen. In this example, it'll show the message 'Hello, Word!'.

What is a function

When you sum two numbers, that’s a function. And when you multiply two numbers, that’s also a function.

Each function takes your inputs, applies some rules, and returns a result.

In the above example, the print() is a function. It accepts a string and shows it on the screen.

Python has many built-in functions like the print() function to use them out of the box in your program.

In addition, Python allows you to define your functions, which you’ll learn how to do it later.

Executing the Python Hello World program

To execute the app.py file, you first launch the Command Prompt on Windows or Terminal on macOS or Linux.

Then, navigate to the helloworld folder.

After that, type the following command to execute the app.py file:

```
python app.py
```
Code language:Python(python)

If you use macOS or Linux, you use python3 command instead:

```
python3 app.py
```
Code language:CSS(css)

If everything is fine, you’ll see the following message on the screen:

```
Hello, World!
```
Code language:Python(python)

If you use VS Code, you can also launch the Terminal within the VS code by:

- Accessing the menu **Terminal > New Terminal**
- Or using the keyboard shortcut Ctrl+Shift+`.

Typically, the backtick key (`) locates under the Esc key on the keyboard.

Python IDLE

Python IDLE is the Python Integration Development Environment (IDE) that comes with the Python distribution by default.

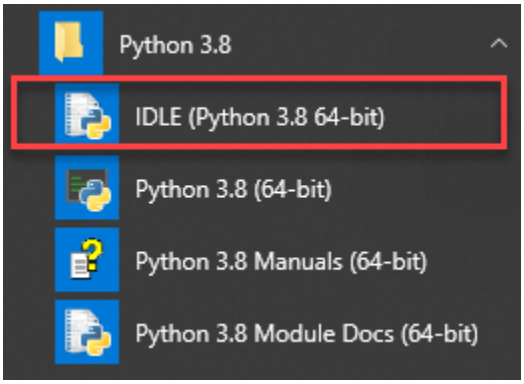
The Python IDLE is also known as an interactive interpreter. It has many features such as:

- Code editing with syntax highlighting
- Smart indenting
- And auto-completion

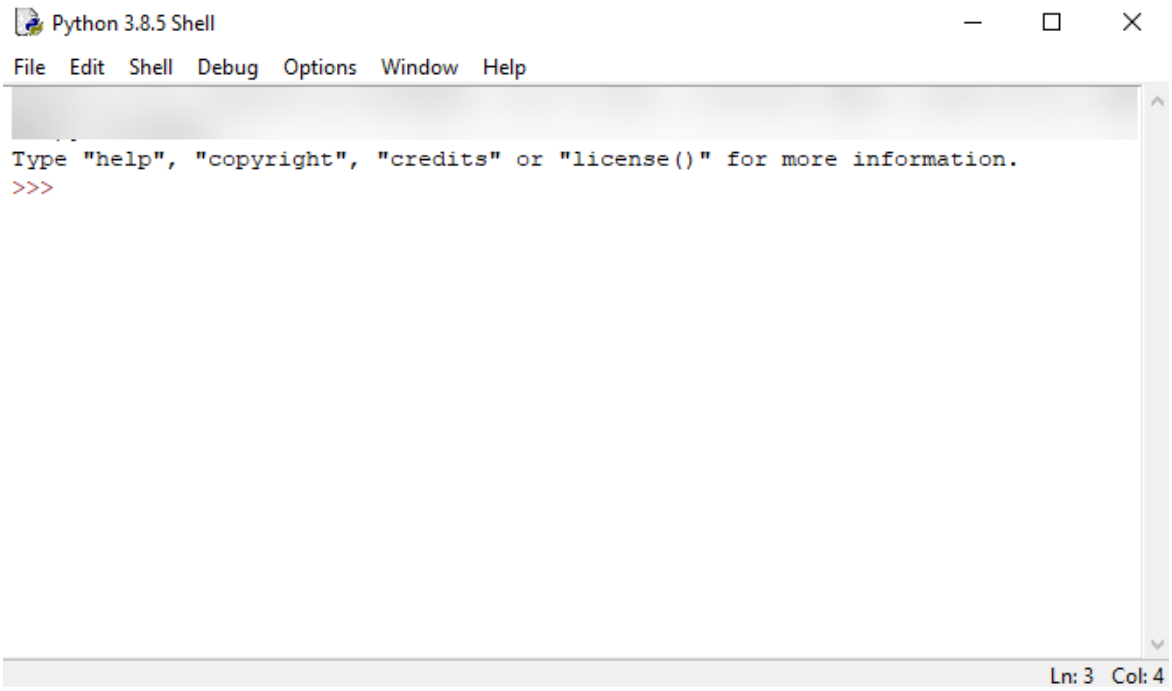
In short, the Python IDLE helps you experiment with Python quickly in a trial-and-error manner.

The following shows you step by step how to launch the Python IDLE and use it to execute the Python code:

First, launch the Python IDLE program:

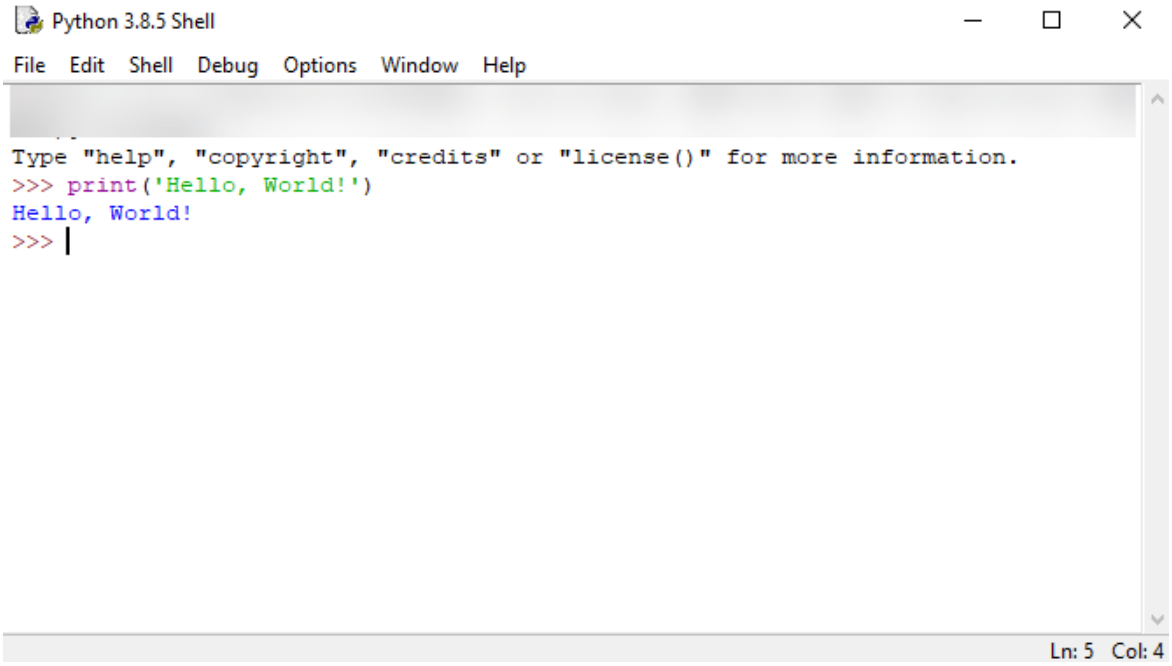


A new Python Shell window will display as follows:



Now, you can enter the Python code after the cursor >>> and press Enter to execute it.

For example, you can type the code print('Hello, World!') and press Enter, you'll see the message Hello, World! immediately on the screen:



Python Syntax

Whitespace and indentation

If you've been working in other programming languages such as Java, C#, or C/C++, you know that these languages use semicolons (;) to separate the statements.

However, Python uses whitespace and indentation to construct the code structure.

The following shows a snippet of Python code:

```
# define main function to print out something
defmain():
i = 1
    max = 10
while (i< max):
        print(i)
i = i + 1
# call function main
main()
```

The meaning of the code isn't important to you now. Please pay attention to the code structure instead.

At the end of each line, you don't see any semicolon to terminate the statement. And the code uses indentation to format the code.

By using indentation and whitespace to organize the code, Python code gains the following advantages:

- First, you'll never miss the beginning or ending code of a block like in other programming languages such as Java or C#.
- Second, the coding style is essentially uniform. If you have to maintain another developer's code, that code looks the same as yours.

- Third, the code is more readable and clearer in comparison with other programming languages.

Comments

The comments are as important as the code because they describe why a piece of code was written.

When the Python interpreter executes the code, it ignores the comments.

In Python, a single-line comment begins with a hash (#) symbol followed by the comment. For example:

```
# This is a single line comment in Python
```

Continuation of statements

Python uses a newline character to separate statements. It places each statement on one line.

However, a long statement can span multiple lines by using the backslash (\) character.

The following example illustrates how to use the backslash (\) character to continue a statement in the second line:

```
if (a == True) and (b == False) and \
   (c == True):
print("Continuation of statements")
```

Identifiers

Identifiers are names that identify variables, functions, modules, classes, and other objects in Python.

The name of an identifier needs to begin with a letter or underscore (_). The following characters can be alphanumeric or underscore.

Python identifiers are case-sensitive. For example, the counter and Counter are different identifiers.

In addition, you cannot use Python keywords for naming identifiers.

Keywords

Some words have special meanings in Python. They are called keywords.

The following shows the list of keywords in Python:

```
Falseclassfinallyisreturn
Nonecontinueforlambdatry
Truedeffromnonlocalwhile
anddelglobalnotwith
aselififoryield
assertelseimportpass
breakexceptinraise
```

Python is a growing and evolving language. So, its keywords will keep increasing and changing.

Python provides a special module for listing its keywords called keyword.

To find the current keyword list, you use the following code:

```
import keyword

print(keyword.kwlist)
```

String literals

Python uses single quotes ('), double quotes ("), triple single quotes (''') and triple-double quotes (""") to denote a string literal.

The string literal need to be surrounded with the same type of quotes. For example, if you use a single quote to start a string literal, you need to use the same single quote to end it.

The following shows some examples of string literals:

```
s = 'This is a string'
print(s)
s = "Another string using double quotes"
print(s)
s = ''' string can span
        multiple line '''
print(s)
```

9.2 SOURCE CODE

MAIN-HOME.JSP

```
{% load static %}
<!DOCTYPE html>
<html lang="zxx">
<head>
  <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
  <meta name="description" content="">
  <meta name="author" content="codebook.in">

  <title>Home Page</title>

  <!-- bootstrap.min css -->
  <link rel="stylesheet" href="{% static 'mainapp/plugins/bootstrap/css/bootstrap.min.css' %}">
  <!-- Icon Font CSS -->
  <link rel="stylesheet" href="{% static 'mainapp/plugins/icofont/icofont.min.css' %}">
```

```
  <!-- Slick Slider  CSS -->
  <link rel="stylesheet" href="{% static 'mainapp/plugins/slick-carousel/slick/slick.css' %}">
  <link rel="stylesheet" href="{% static 'mainapp/plugins/slick-carousel/slick/slick-theme.css' %}">

  <!-- Main Stylesheet -->
  <link rel="stylesheet" href="{% static 'mainapp/css/style.css' %}">

  <script src="https://unpkg.com/sweetalert/dist/sweetalert.min.js"></script>
</head>

<body id="top">
  {% if messages %}
  {% for message in messages %}
     {% if message.level == DEFAULT_MESSAGE_LEVELS.SUCCESS %}
        <script>swal({
              title: "Success!",
              text: "{{message}}",
              icon: "success",
              button: "OK",
           });
        </script>

     {% elif message.level == DEFAULT_MESSAGE_LEVELS.WARNING %}
        <script>swal({
              title: "Warning :)",
              text: "{{message}}",
              icon: "warning",
```

```
            button: "OK",


        });
    </script>
{% elif message.level == DEFAULT_MESSAGE_LEVELS.INFO %}
    <script>swal({
            title: "info :)",
            text: "{{message}}",
            icon: "info",
            button: "OK",
        });
    </script>
{% elif message.level == DEFAULT_MESSAGE_LEVELS.ERROR %}
    <script>swal({
            title: "error :)",
            text: "{{message}}",
            icon: "error",
            button: "OK",
        });
    </script>
{% endif %}
 {% endfor %}
{% endif %}

<header>

      <nav class="navbar navbar-expand-lg navigation" id="navbar">
```

```
            <div class="container">
                <a class="navbar-brand" href="{% url 'home' %}">
                    <img src="images/logo.png" alt="" class="img-fluid">
                </a>

                <button class="navbar-toggler collapsed" type="button" data-toggle="collapse" data-target="#navbarmain" aria-controls="navbarmain" aria-expanded="false" aria-label="Toggle navigation">
                    <span class="icofont-navigation-menu"></span>
                </button>

                <div class="collapse navbar-collapse" id="navbarmain">
                    <ul class="navbar-nav ml-auto">
                        <li class="nav-item active"><a class="nav-link" href="{% url 'home' %}">Home</a></li>
                        <li class="nav-item"><a class="nav-link" href="{% url 'user_login' %}">User</a></li>
                        <li class="nav-item"><a class="nav-link" href="{% url 'about' %}">About</a></li>
                        <li class="nav-item"><a class="nav-link" href="{% url 'contact' %}">Contact</a></li>
                    </ul>
                </div>
            </div>
        </nav>
    </header>
    <!-- Slider Start -->
    <section class="banner">
        <div class="container">
            <div class="row">
```

```
                    <div class="col-lg-6 col-md-12 col-xl-7">
                        <div class="block">
                            <div class="divider mb-3"></div>
                            <span class="text-uppercase text-sm letter-spacing ">Predicting Modes of Childbirth</span>
                            <h1 class="mb-3 mt-3">Your trusted health partner</h1>

                            <p class="mb-4 pr-5">A repudiandae ipsam labore ipsa voluptatum quidem quae laudantium quisquam aperiam maiores sunt fugit, deserunt rem suscipit placeat.</p>
                            <div class="btn-container ">
                                <a href="" target="_blank" class="btn btn-main-2 btn-icon btn-round-full">Make prediction<i class="icofont-simple-right ml-1  "></i></a>
                            </div>
                        </div>
                    </div>
                </div>
            </div>
        </section>
        <!-- slider end -->

        <section class="features">
            <div class="container">
                <div class="row">
                    <div class="col-lg-12">
                        <div class="feature-block d-lg-flex">
                            <div class="feature-item mb-5 mb-lg-0">
                                <div class="feature-icon mb-4">
                                    <i class="icofont-surgeon-alt"></i>
```

```
                    </div>
                    <span>24 Hours Service</span>
                    <h4 class="mb-3">Online Appoinment</h4>
                    <p class="mb-4">Get all time support for emergency. We have introduced the principle of family medicine.</p>
                    <a href="" class="btn btn-main btn-round-full">Make a appoinment</a>
                </div>

                <div class="feature-item mb-5 mb-lg-0">
                    <div class="feature-icon mb-4">
                        <i class="icofont-ui-clock"></i>
                    </div>
                    <span>Timing schedule</span>
                    <h4 class="mb-3">Working Hours</h4>
                    <ul class="w-hours list-unstyled">
                        <li class="d-flex justify-content-between">Sun - Wed : <span>8:00 - 17:00</span></li>
                        <li class="d-flex justify-content-between">Thu - Fri : <span>9:00 - 17:00</span></li>
                        <li class="d-flex justify-content-between">Sat - sun : <span>10:00 - 17:00</span></li>
                    </ul>
                </div>

                <div class="feature-item mb-5 mb-lg-0">
                    <div class="feature-icon mb-4">
                        <i class="icofont-support"></i>
                    </div>
```

```
                                        <span>Emegency Cases</span>
                                        <h4 class="mb-3">1-800-700-6200</h4>
                                        <p>Get all time support for emergency. We have introduced the principle of family medicine. Get connected with us for any urgency .</p>
                                    </div>
                                </div>
                            </div>
                        </div>
                    </section>

                    <section class="cta-section ">
                        <div class="container">
                            <div class="cta position-relative">
                                <div class="row">
                                    <div class="col-lg-3 col-md-6 col-sm-6">
                                        <div class="counter-stat">
                                            <i class="icofont-doctor"></i>
                                            <span class="h3">58</span>k
                                            <p>Happy People</p>
                                        </div>
                                    </div>
                                    <div class="col-lg-3 col-md-6 col-sm-6">
                                        <div class="counter-stat">
                                            <i class="icofont-flag"></i>
                                            <span class="h3">700</span>+
                                            <p>Surgery Comepleted</p>
                                        </div>
```

```
                    </div>

                    <div class="col-lg-3 col-md-6 col-sm-6">
                        <div class="counter-stat">
                            <i class="icofont-badge"></i>
                            <span class="h3">40</span>+
                            <p>Expert Doctors</p>
                        </div>
                    </div>
                    <div class="col-lg-3 col-md-6 col-sm-6">
                        <div class="counter-stat">
                            <i class="icofont-globe"></i>
                            <span class="h3">20</span>
                            <p>Worldwide Branch</p>
                        </div>
                    </div>
                </div>
            </div>
        </div>
</section>

<section class="section about">
        <div class="container">
            <div class="row align-items-center">
                <div class="col-lg-4 col-sm-6">
                    <div class="about-img">
                        <img src="{% static 'mainapp/images/about/img-1.jpg' %}"
alt="" class="img-fluid">
```

<img src="{% static 'mainapp/images/about/img-2.jpg' %}" alt="" class="img-fluid mt-4">

<img src="{% static 'mainapp/images/about/img-3.jpg' %}" alt="" class="img-fluid">

<h2 class="title-color">Personal care
& healthy living</h2>

We provide best leading medicle service Nulla perferendis veniam deleniti ipsum officia dolores repellat laudantium obcaecati neque.

Services

</section>

<section class="section service gray-bg">

```
                    <div class="section-title">
                        <h2>Award winning patient care</h2>
                        <div class="divider mx-auto my-4"></div>
                        <p>Lets know moreel necessitatibus dolor asperiores illum possimus sint voluptates incidunt molestias nostrum laudantium. Maiores porro cumque quaerat.</p>
                    </div>
                </div>
            </div>

            <div class="row">
                <div class="col-lg-4 col-md-6 col-sm-6">
                    <div class="service-item mb-4">
                        <div class="icon d-flex align-items-center">
                            <i class="icofont-laboratory text-lg"></i>
                            <h4 class="mt-3 mb-3">Laboratory services</h4>
                        </div>

                        <div class="content">
                            <p class="mb-4">Saepe nulla praesentium eaque omnis perferendis a doloremque.</p>
                        </div>
                    </div>
                </div>

                <div class="col-lg-4 col-md-6 col-sm-6">
                    <div class="service-item mb-4">
                        <div class="icon d-flex align-items-center">
```

```
                    <i class="icofont-heart-beat-alt text-lg"></i>
                    <h4 class="mt-3 mb-3">Heart Disease</h4>
                </div>
                <div class="content">
                    <p class="mb-4">Saepe nulla praesentium eaque omnis perferendis a doloremque.</p>
                </div>
            </div>
        </div>

        <div class="col-lg-4 col-md-6 col-sm-6">
            <div class="service-item mb-4">
                <div class="icon d-flex align-items-center">
                    <i class="icofont-tooth text-lg"></i>
                    <h4 class="mt-3 mb-3">Dental Care</h4>
                </div>
                <div class="content">
                    <p class="mb-4">Saepe nulla praesentium eaque omnis perferendis a doloremque.</p>
                </div>
            </div>
        </div>

        <div class="col-lg-4 col-md-6 col-sm-6">
            <div class="service-item mb-4">
                <div class="icon d-flex align-items-center">
                    <i class="icofont-crutch text-lg"></i>
```

```
                    <h4 class="mt-3 mb-3">Body Surgery</h4>
                </div>

                <div class="content">
                    <p class="mb-4">Saepe nulla praesentium eaque omnis perferendis a doloremque.</p>
                </div>
            </div>
        </div>

        <div class="col-lg-4 col-md-6 col-sm-6">
            <div class="service-item mb-4">
                <div class="icon d-flex align-items-center">
                    <i class="icofont-brain-alt text-lg"></i>
                    <h4 class="mt-3 mb-3">Neurology Sargery</h4>
                </div>
                <div class="content">
                    <p class="mb-4">Saepe nulla praesentium eaque omnis perferendis a doloremque.</p>
                </div>
            </div>
        </div>

        <div class="col-lg-4 col-md-6 col-sm-6">
            <div class="service-item mb-4">
                <div class="icon d-flex align-items-center">
                    <i class="icofont-dna-alt-1 text-lg"></i>
                    <h4 class="mt-3 mb-3">Gynecology</h4>
```

```
                                    </div>
                                    <div class="content">
                                        <p class="mb-4">Saepe nulla praesentium eaque omnis perferendis a doloremque.</p>
                                    </div>
                                </div>
                            </div>
                        </div>
                    </section>



<!-- footer Start -->
<footer class="footer section gray-bg">
    <div class="container">
        <div class="row">
            <div class="col-lg-4 mr-auto col-sm-6">
                <div class="widget mb-4 mb-lg-0">
                    <div class="logo mb-4">
                        <img src="images/logo3.PNG" alt="" class="img-fluid">
                    </div>
                    <p>Tempora dolorem voluptatum nam vero assumenda voluptate, facilis ad eos obcaecati tenetur veritatis eveniet distinctio possimus.</p>

                    <ul class="list-inline footer-socials mt-4">
```

<li class="list-inline-item">

<li class="list-inline-item">

<li class="list-inline-item">

<h4 class="text-capitalize mb-3">Get in Touch</h4>

Support Available for 24/7

<h4 class="mt-2">Support@email.com</h4>

Mon to Fri : 08:30 - 18:00

```
                                    </div>
                                    <h4 class="mt-2"><a href="tel:+23-345-67890">+23-456-6588</a></h4>
                                </div>
                            </div>
                        </div>
                    </div>

                    <div class="footer-btm py-2 mt-3">
                        <div class="row align-items-center justify-content-center">
                            <div class="col-lg-auto">
                                <div class="copyright">
                                    &copy; Copyright Reserved to <span class="text-color">Codebook</span>
                                </div>
                            </div>

                        </div>

                        <div class="row">
                            <div class="col-lg-4">
                                <a class="backtop js-scroll-trigger" href="#top">
                                    <i class="icofont-long-arrow-up"></i>
                                </a>
                            </div>
                        </div>
                    </div>
                </div>
```

```
</footer>
    <!--
    Essential Scripts
    =====================================-->
    <!-- Main jQuery -->
    <script src="{% static 'mainapp/plugins/jquery/jquery.js' %}"></script>
    <!-- Bootstrap 4.3.2 -->
    <script src="{% static 'mainapp/plugins/bootstrap/js/popper.js' %}"></script>
    <script src="{% static 'mainapp/plugins/bootstrap/js/bootstrap.min.js' %}"></script>
    <script src="{% static 'mainapp/plugins/counterup/jquery.easing.js' %}"></script>
    <!-- Slick Slider -->
    <script src="{% static 'mainapp/plugins/slick-carousel/slick/slick.min.js' %}"></script>
    <!-- Counterup -->
    <script src="{% static 'mainapp/plugins/counterup/jquery.waypoints.min.js' %}"></script>

    <script src="{% static 'mainapp/plugins/shuffle/shuffle.min.js' %}"></script>
    <script src="{% static 'mainapp/plugins/counterup/jquery.counterup.min.js' %}"></script>

    <script src="{% static 'mainapp/js/script.js' %}"></script>
    <script src="{% static 'mainapp/js/contact.js' %}"></script>

  </body>
  </html>
```

CHAPTER-10

RESULT/DISCUSSION

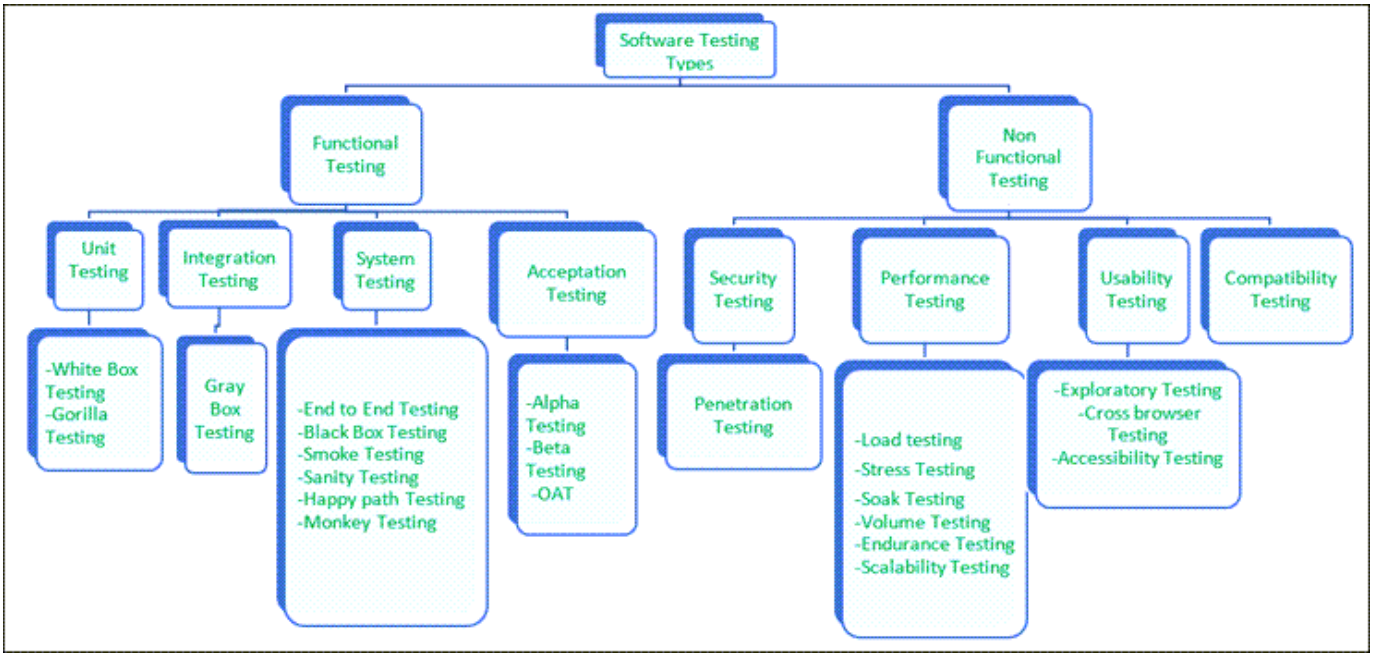
10.1 SYSTEM TESTING

Types of Software Testing: Different Testing Types with Details

We, as testers, are aware of the various types of Software Testing like Functional Testing, Non-Functional Testing, Automation Testing, Agile Testing, and their sub-types, etc.

Each type of testing has its own features, advantages, and disadvantages as well. However, in this tutorial, we have covered mostly each and every type of software testing which we usually use in our day-to-day testing life.

Different Types of Software Testing



Functional Testing

There are four main types of functional testing.

#1) Unit Testing

Unit testing is a type of software testing which is done on an individual unit or component to test its corrections. Typically, Unit testing is done by the developer at the application development phase. Each unit in unit testing can be viewed as a method, function, procedure, or object. Developers often use test automation tools such as NUnit, Xunit, JUnit for the test execution.
Unit testing is important because we can find more defects at the unit test level.

For example, there is a simple calculator application. The developer can write the unit test to check if the user can enter two numbers and get the correct sum for addition functionality.

a) White Box Testing

White box testing is a test technique in which the internal structure or code of an application is visible and accessible to the tester. In this technique, it is easy to find loopholes in the design of an application or fault in business logic. Statement coverage and decision coverage/branch coverage are examples of white box test techniques.

b) Gorilla Testing

Gorilla testing is a test technique in which the tester and/or developer test the module of the application thoroughly in all aspects. Gorilla testing is done to check how robust your application is.

For example, the tester is testing the pet insurance company's website, which provides the service of buying an insurance policy, tag for the pet, Lifetime membership. The tester can focus on any one module, let's say, the insurance policy module, and test it thoroughly with positive and negative test scenarios.

#2) Integration Testing

Integration testing is a type of software testing where two or more modules of an application are logically grouped together and tested as a whole. The focus of this type of testing is to find the defect on interface, communication, and data flow among modules. Top-down or Bottom-up approach is used while integrating modules into the whole system.

This type of testing is done on integrating modules of a system or between systems. For example, a user is buying a flight ticket from any airline website. Users can see flight details and payment information while buying a ticket, but flight details and payment processing are two different systems. Integration testing should be done while integrating of airline website and payment processing system.

a) Gray box testing

As the name suggests, gray box testing is a combination of white-box testing and black-box testing. Testers have partial knowledge of the internal structure or code of an application.

#3**) System Testing**

System testing is types of testing where tester evaluates the whole system against the specified requirements.

a) End to End Testing

It involves testing a complete application environment in a situation that mimics real-world use, such as interacting with a database, using network communications, or interacting with other hardware, applications, or systems if appropriate.

For example, a tester is testing a pet insurance website. End to End testing involves testing of buying an insurance policy, LPM, tag, adding another pet, updating credit card information on users' accounts, updating user address information, receiving order confirmation emails and policy documents.

b) Black Box Testing

Blackbox testing is a software testing technique in which testing is performed without knowing the internal structure, design, or code of a system under test. Testers should focus only on the input and output of test objects.

Detailed information about the advantages, disadvantages, and types of Black Box testing can be found here.

c) Smoke Testing

Smoke testing is performed to verify that basic and critical functionality of the system under test is working fine at a very high level.

Whenever a new build is provided by the development team, then the Software Testing team validates the build and ensures that no major issue exists. The testing team will ensure that the build is stable, and a detailed level of testing will be carried out further.

For example, tester is testing pet insurance website. Buying an insurance policy, adding another pet, providing quotes are all basic and critical functionality of the application. Smoke testing for this website verifies that all these functionalities are working fine before doing any in-depth testing.

d) Sanity Testing

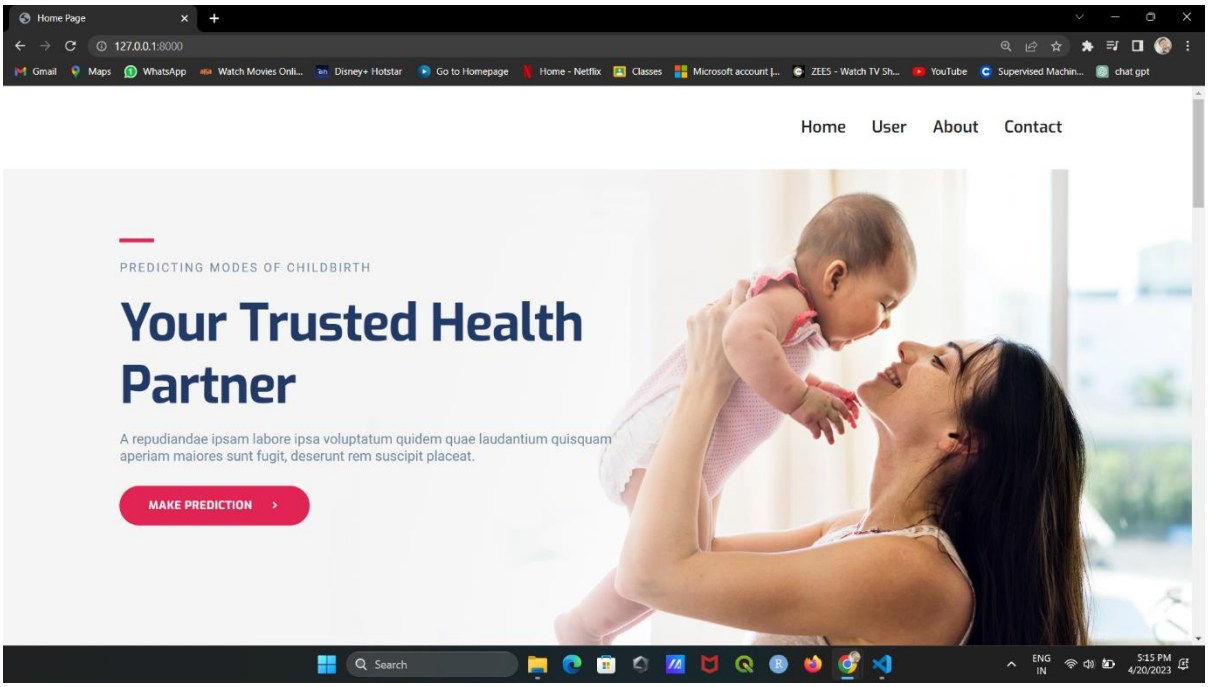
Sanity testing is performed on a system to verify that newly added functionality or bug fixes are working fine. Sanity testing is done on stable build. It is a subset of the regression test.

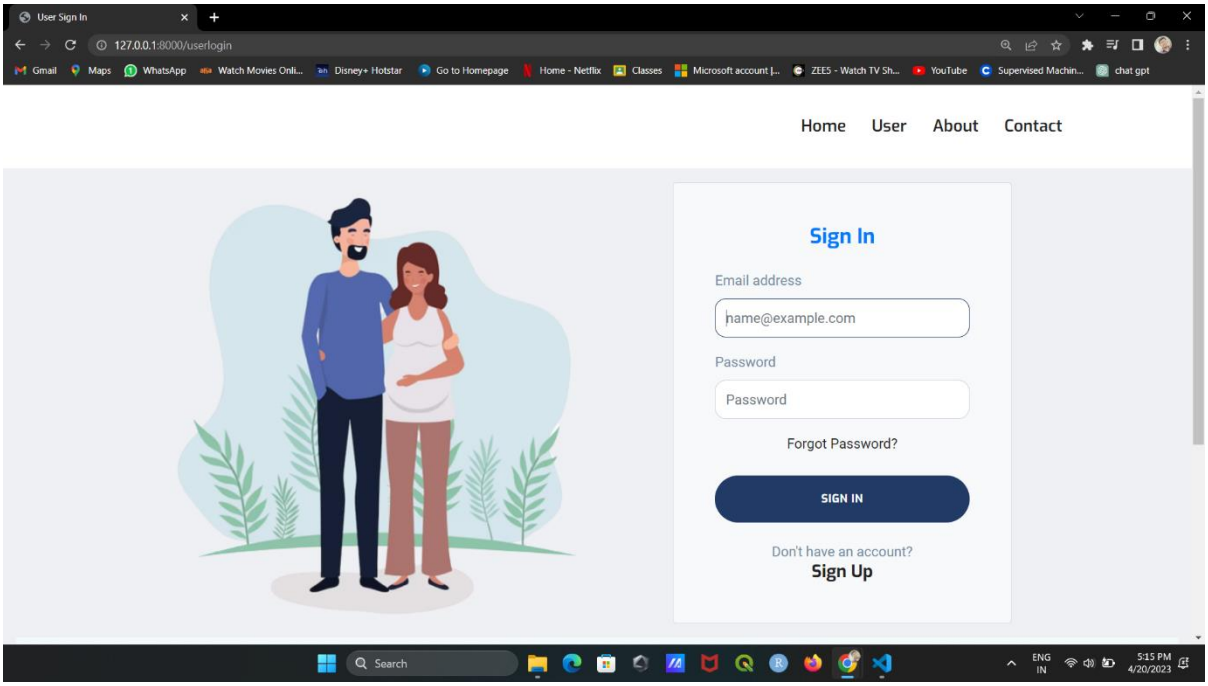
For example, a tester is testing a pet insurance website. There is a change in the discount for buying a policy for second pet. Then sanity testing is only performed on buying insurance policy module.

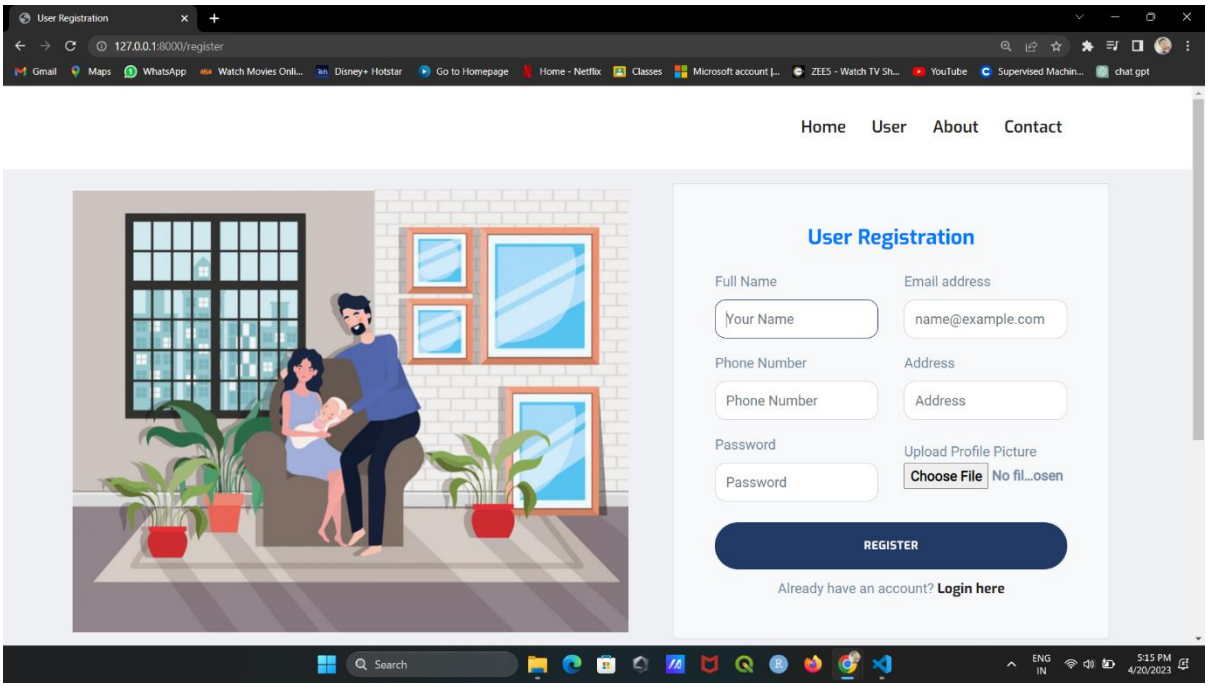
e) Happy path Testing

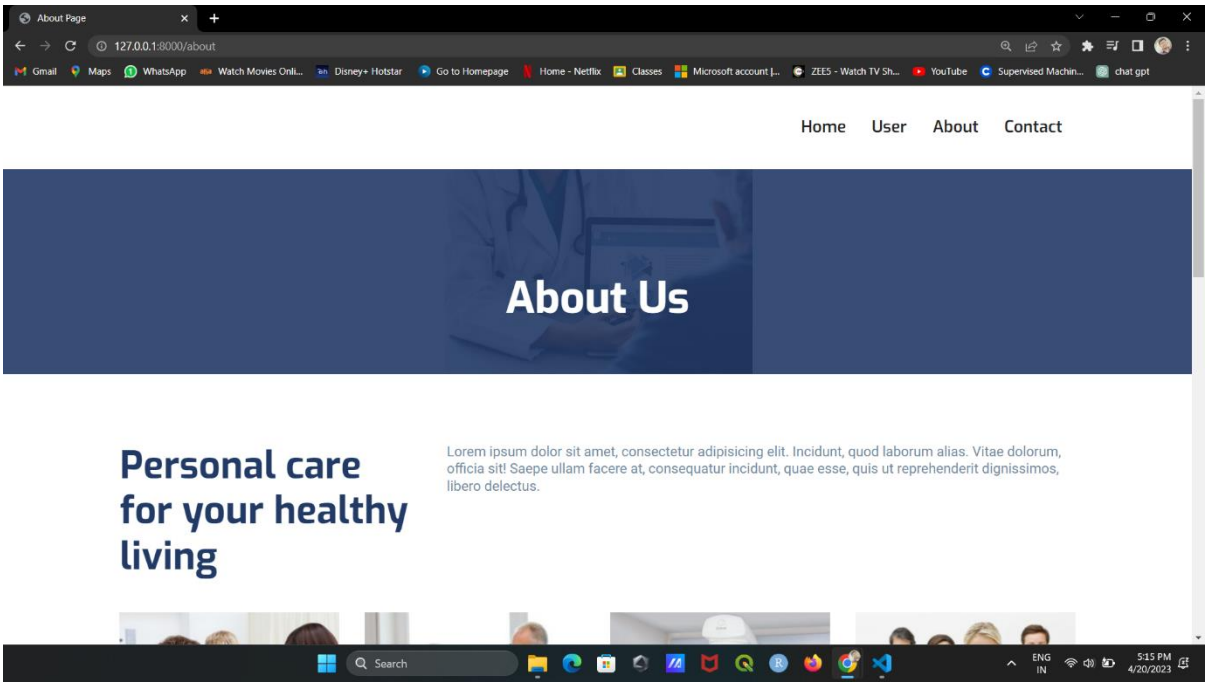
The objective of Happy Path Testing is to test an application successfully on a positive flow. It does not look for negative or error conditions. The focus is only on valid and positive inputs through which the application generates the expected output.

10.2 OUTPUT SCREENS:




User Sign In
127.0.0.1:8000/userlogin
Home
User
About
Contact
Sign In
Email address
name@example.com
Password
Password
Forgot Password?
SIGN IN
Don't have an account?
Sign Up


User Registration
127.0.0.1:8000/register
Home
User
About
Contact
User Registration
Full Name
Your Name
Email address
name@example.com
Phone Number
Phone Number
Address
Address
Password
Password
Upload Profile Picture
Choose File
No fil...osen
REGISTER
Already have an account? Login here


About Page
127.0.0.1:8000/about
Home
User
About
Contact
About Us
Personal care for your healthy living
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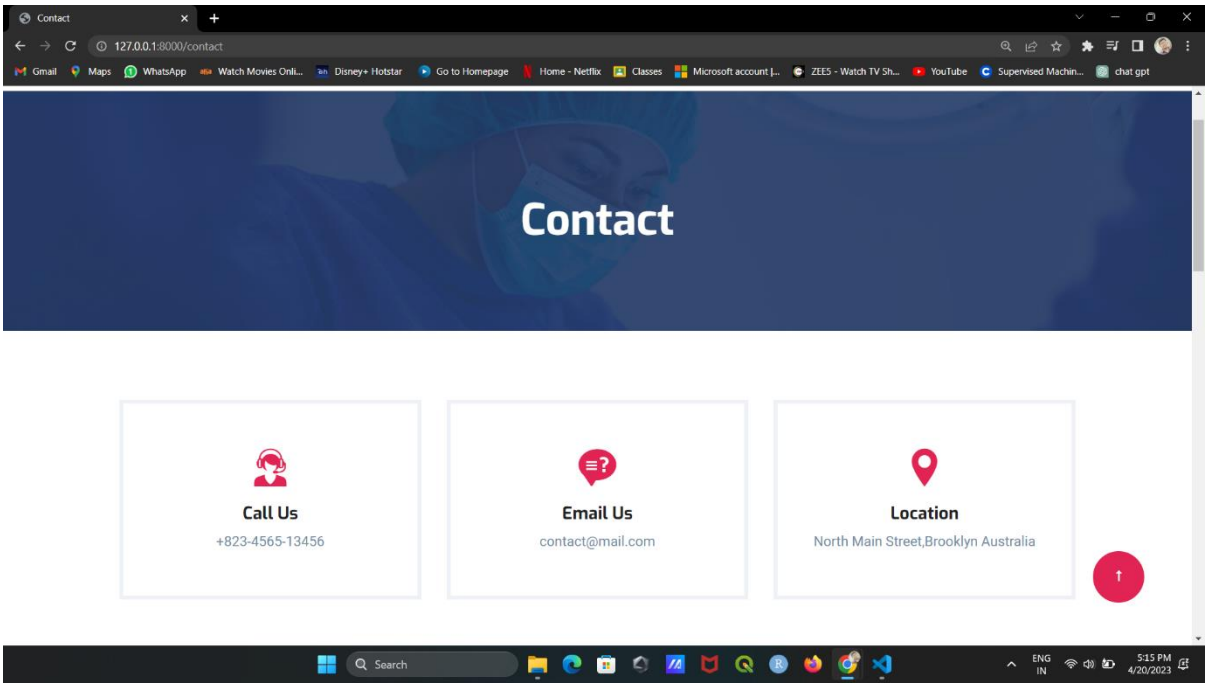
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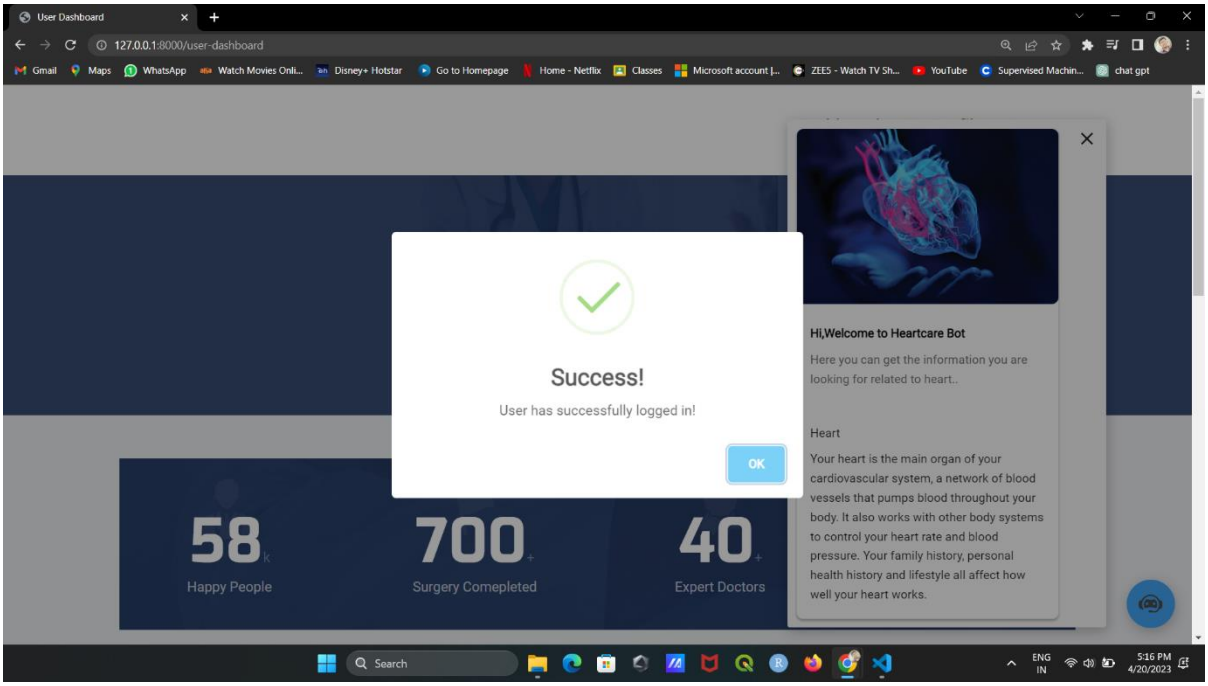
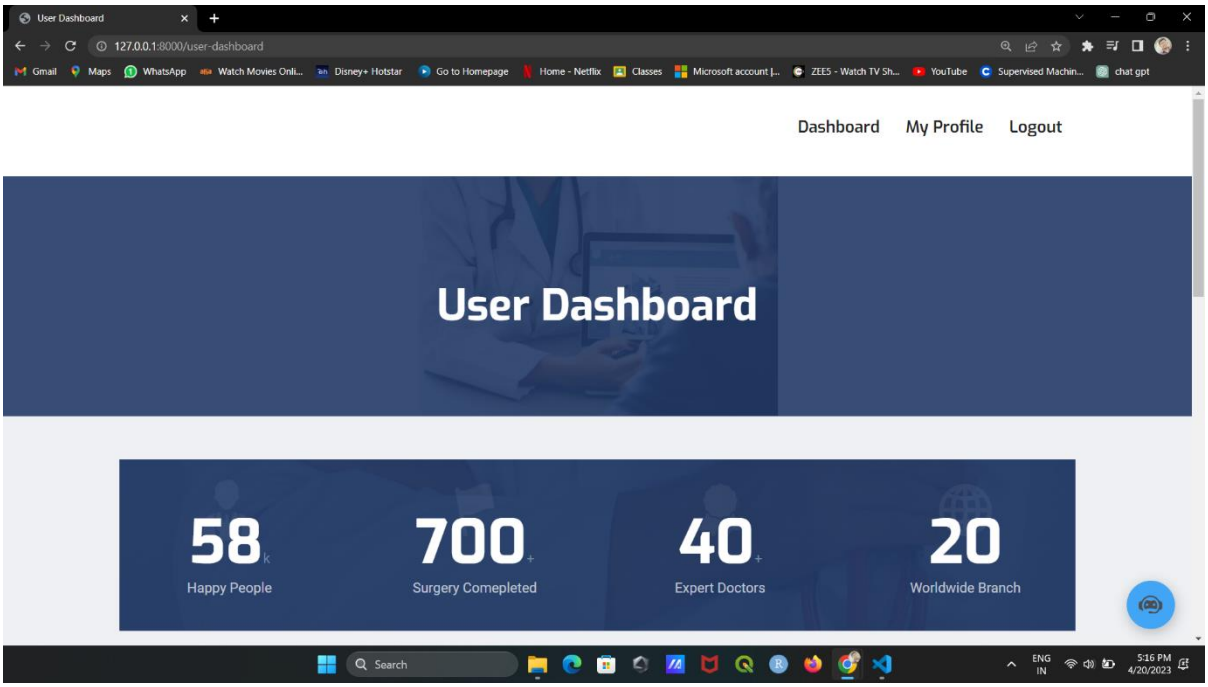
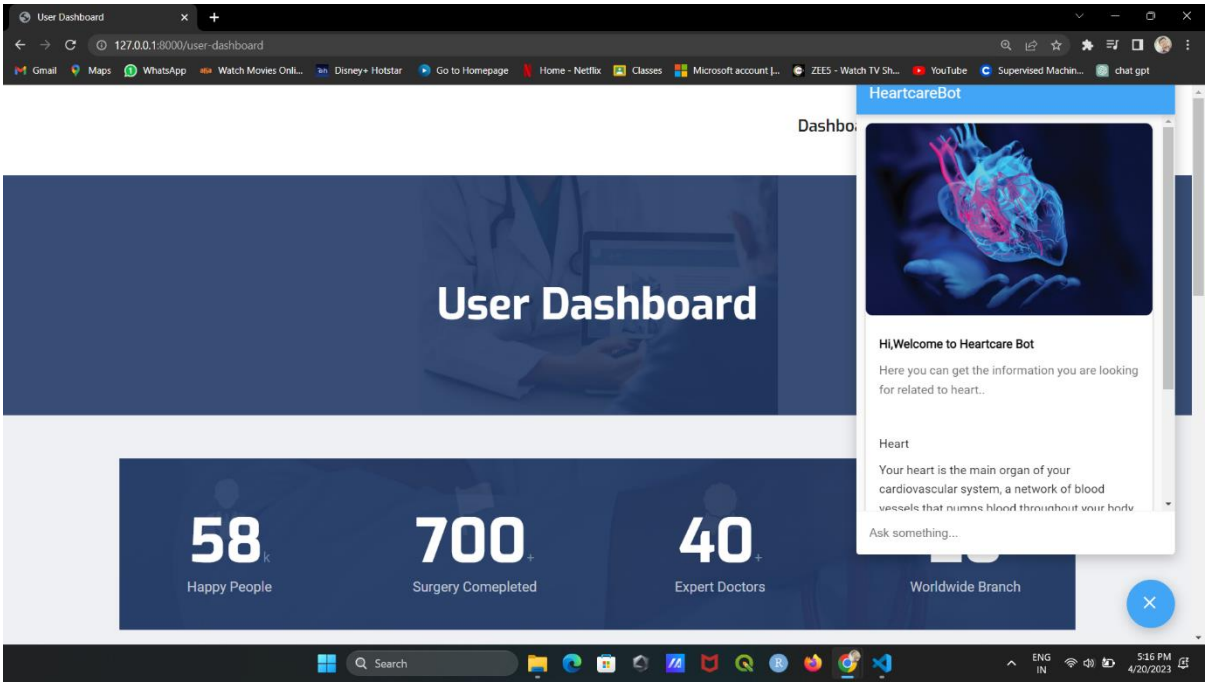
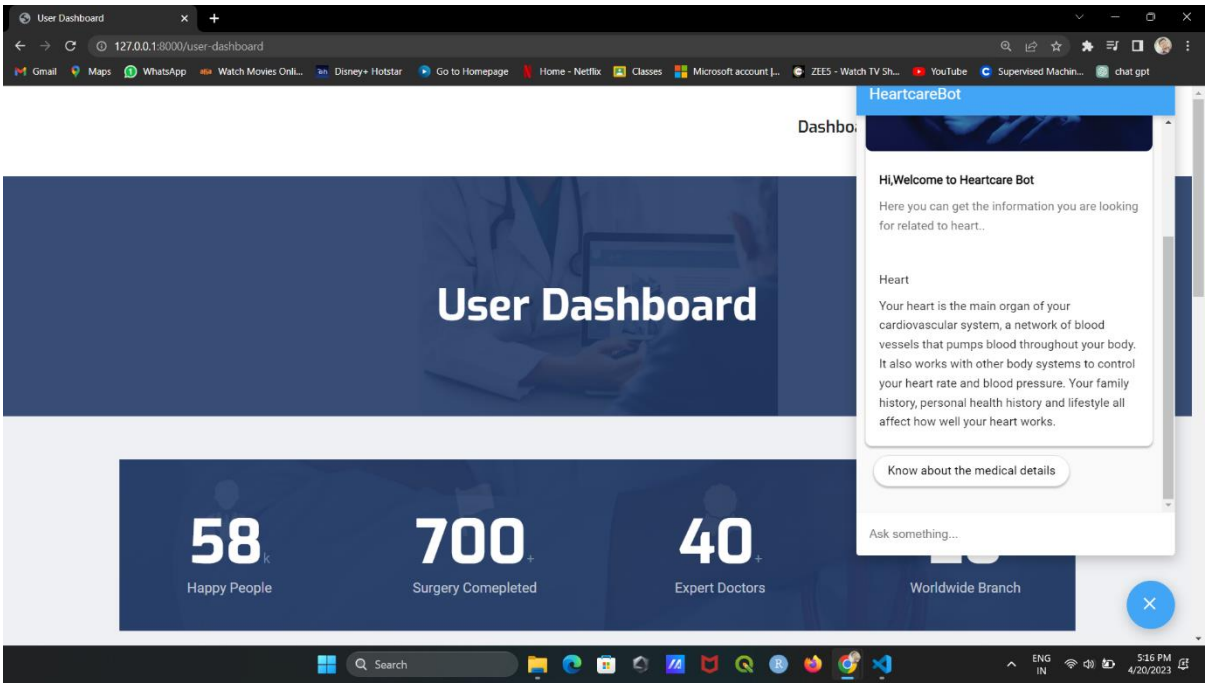
+823-4565-13456
Email Us
contact@mail.com
Location
North Main Street,Brooklyn Australia


User Dashboard
127.0.0.1:8000/user-dashboard
Success!
User has successfully logged in!
OK
Hi,Welcome to Heartcare Bot
Here you can get the information you are looking for related to heart..
Heart
Your heart is the main organ of your cardiovascular system, a network of blood vessels that pumps blood throughout your body. It also works with other body systems to control your heart rate and blood pressure. Your family history, personal health history and lifestyle all affect how well your heart works.
58k
Happy People
700+
Surgery Comepleted
40+
Expert Doctors


User Dashboard
127.0.0.1:8000/user-dashboard
Dashboard
My Profile
Logout
User Dashboard
58k
Happy People
700+
Surgery Comepleted
40+
Expert Doctors
20
Worldwide Branch


User Dashboard
127.0.0.1:8000/user-dashboard
HeartcareBot
Hi,Welcome to Heartcare Bot
Here you can get the information you are looking for related to heart..
Heart
Your heart is the main organ of your cardiovascular system, a network of blood
Ask something...
58k
Happy People
700+
Surgery Comepleted
40+
Expert Doctors
Worldwide Branch


User Dashboard
127.0.0.1:8000/user-dashboard
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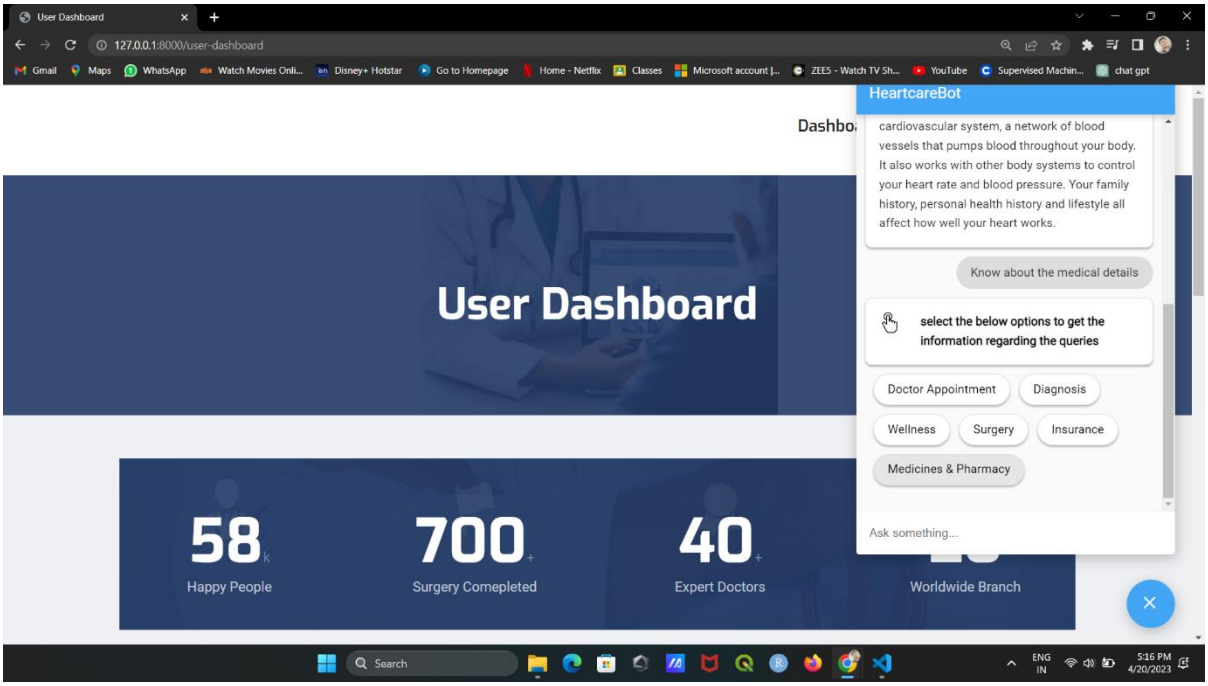
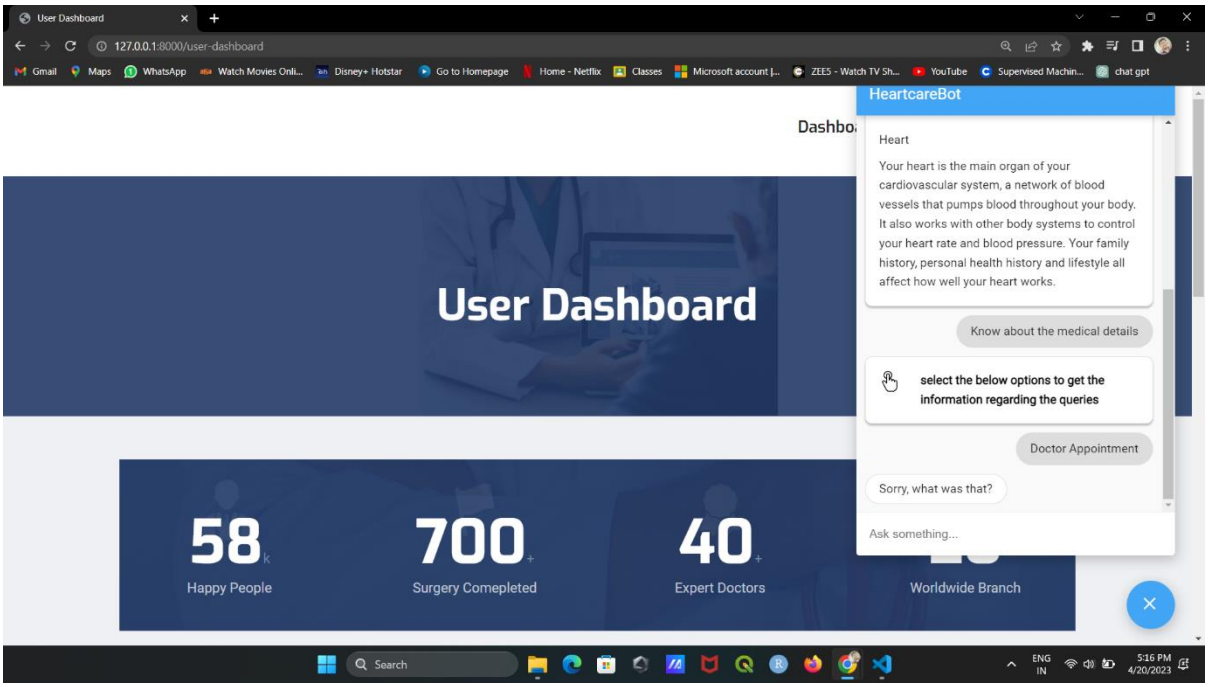
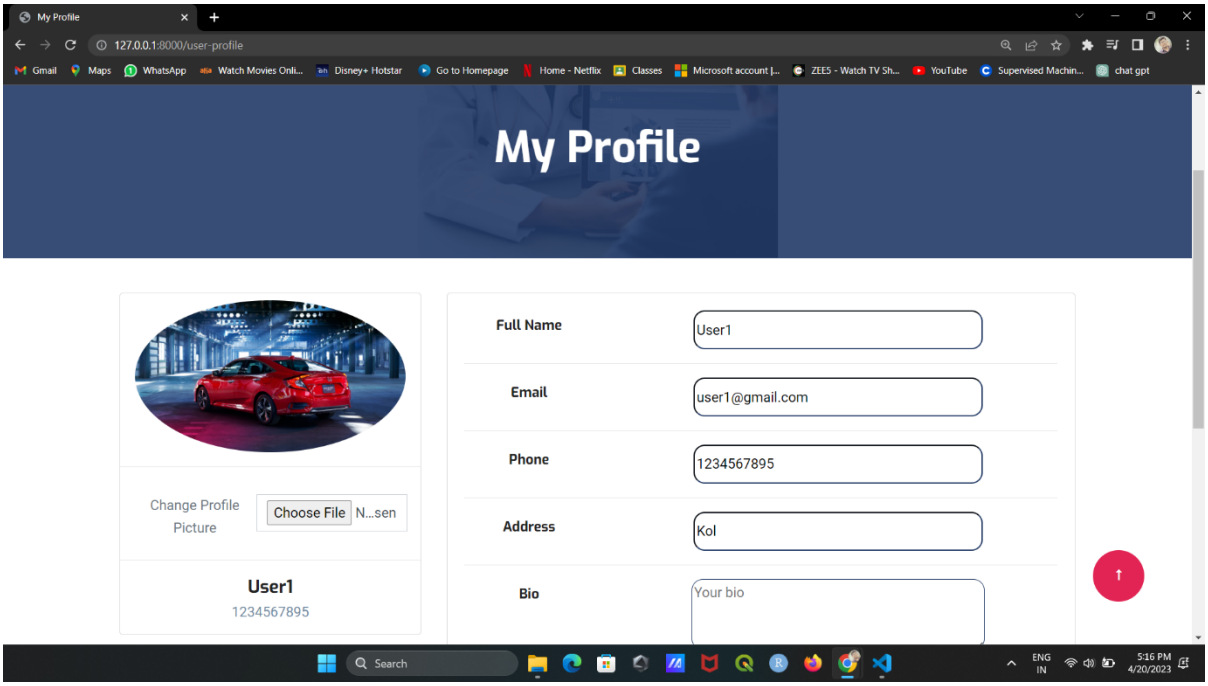
Hi,Welcome to Heartcare Bot
Here you can get the information you are looking for related to heart..
Heart
Your heart is the main organ of your cardiovascular system, a network of blood vessels that pumps blood throughout your body. It also works with other body systems to control your heart rate and blood pressure. Your family history, personal health history and lifestyle all affect how well your heart works.
Know about the medical details
Ask something...
58k
Happy People
700+
Surgery Comepleted
40+
Expert Doctors
Worldwide Branch


User Dashboard
127.0.0.1:8000/user-dashboard
HeartcareBot
cardiovascular system, a network of blood vessels that pumps blood throughout your body. It also works with other body systems to control your heart rate and blood pressure. Your family history, personal health history and lifestyle all affect how well your heart works.
Know about the medical details
select the below options to get the information regarding the queries
Doctor Appointment
Diagnosis
Wellness
Surgery
Insurance
Medicines & Pharmacy
Ask something...
58k
Happy People
700+
Surgery Comepleted
40+
Expert Doctors
Worldwide Branch


User Dashboard
127.0.0.1:8000/user-dashboard
HeartcareBot
Heart
Your heart is the main organ of your cardiovascular system, a network of blood vessels that pumps blood throughout your body. It also works with other body systems to control your heart rate and blood pressure. Your family history, personal health history and lifestyle all affect how well your heart works.
Know about the medical details
select the below options to get the information regarding the queries
Doctor Appointment
Sorry, what was that?
Ask something...
58k
Happy People
700+
Surgery Comepleted
40+
Expert Doctors
Worldwide Branch


My Profile
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My Profile
Change Profile Picture
Choose File
N...sen
User1
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Full Name
User1
Email
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Phone
1234567895
Address
Kol
Bio
Your bio
Search
ENG
IN
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4/20/2023

CHAPTER-11

CONCLUSION

Our hospital management system chatbot's main goal is to automate repetitive tasks in a user-friendly manner, allowing hospital employees to focus on important tasks and also enabling fast response for customers instead of waiting for an employee to solve their queries because they can interact with the bot at any time. Enabling speech recognition in our chatbot also facilitates a simple and quick conversation. The user-interactive UI makes it easier to navigate the website.

We put our application chatbot through its paces by experimenting with a number of various profiles. The results were satisfactory.

CHAPTER-12

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