Abstract

SimpSymps: A health symptom checker that allows users to self-diagnose health problems, learn about possible treatments, and find nearby hospitals and pharmacies if required. Our team created SimpSymps by using Python libraries including BeautifulSoup, Regex, Pandas, and JSON. We used several techniques such as API calls, and web scraping to design this symptom checker. SimpSymps could help authorities regulate the inflow of people in hospitals especially in times of crisis such as COVID-19 and provide guidance to those undergoing preliminary symptoms.

User Instructions and Expectations

*Prompt 1: ﻿Do you wish to continue? (Y/N)*

Once the user initiates the program, a welcome menu is displayed giving a quick overview of the expectations from the program. The user can then choose to continue or terminate the program.

The following instructions are related to different iterations of the program.

**Iteration 1**

*Prompt 2: Are you currently bleeding, experiencing blackouts, or difficulty moving? (Y/N)*

The program asks if one is experiencing conditions that require immediate attention. This functionality is introduced to guide the user to locate pharmacies, hospitals or doctors nearby.

The program displays another menu requiring input from the user to choose from the following:

﻿ *Prompt 2.1:*

What would you like?

1. Get List of Pharmacies or Hospital Near Me.

2. Get list of Doctors for virtual consultation.

3. Quit

Further prompts from the user are dependent on which choice they make.

User selects 1:

*Prompt 2.2: ﻿Enter your address, neighborhood or zip code*

The user may choose to enter a numeric zipcode (15218) or a neighborhood (Shadyside, Pittsburgh)

﻿*Prompt 2.3: Enter 1 for Pharmacy or 2 for Hospital*

Outputs:

* a CSV file is generated with the required information or the program ends.
* The menu is displayed again.

User selects 2:

*Prompt 2.4: ﻿Enter the specialty you want to search e.g. neurology*

Here the user needs to input the specialty his or her condition is associated with. The program assumes that the user would be equipped with the knowledge that ‘cardiology’ is the specific specialty for heart disease or ‘psychiatry’ would fall be referred to for anxiety.

*Prompt 2.5: Enter your State (e.g. PA)*

User inputs the abbreviated version of the state he is in.

Outputs:

* a CSV file is generated with the required information or the program ends.
* The menu is displayed again.

**Iteration 2**

*Prompt 3: ﻿Please enter most prominent symptom you're experiencing right now:*

If the user enters ‘N’ for *prompt 2*, he/she is immediately asked to name one prominent symptom they are experiencing. The program then generates a match and displays additional symptoms to check for which the user is continuously prompted until he confirms the list matches his current symptoms (via Yes [Y] or No [N] entries).

Outputs:

* ﻿ A plot is generated displaying the top 10 most frequent symptoms related to the symptom the user chose initially
* A CSV file of the top matched diagnosis is downloaded for reference.
* A summary of top five conditions associated with the symptoms is displayed.

**Iteration 3**

*Prompt 4:* *﻿Please type the relevant number to retrieve information related to disease (or 'Q' to quit and move to the next part):*

the user can then retrieve information related to the top 5 diagnosis list directly on the console by entering the numeric digits 1 to 5; or quit to move on to the next part.

Output:

* Console displays a summary of the condition selected

**Iteration 4**

*Prompt 5: ﻿Would you like information about Pharmacies/Hospitals in your vicinity or Doctors online? (Y/N):*

If the user inputs ‘N’, the program is terminated.

**Iteration 5**

On entering ‘Y’ to Prompt 5, the user has further choices as per the following menu in iteration 1.

﻿What would you like?

1. Get List of Pharmacies or Hospital Near Me.

2. Get list of Doctors for virtual consultation.

3. Quit

[See iteration 1 for further instructions]