VITYARTHI PROJECT

FOR INTRODUCTION TO PROBLEM SOLVING AND PROGRAMMING

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SUBJECT : INTRODUCTION TO PROBLEM SOLVING AND PROGRAMMING

SUBJECT CODE: CSE1021

PROJECT NAME: JAUNDICE INPECTION

SUBMITTED ON: 22 NOV. 2025

1. Introduction

This project is a Python-based Health Symptom Analyzer designed to help users quickly assess potential health risks. The system collects basic user information, asks questions about common symptoms, calculates a risk score, and generates a visual pie chart showing the percentage of “Safe” vs “In Danger.” This simple tool demonstrates practical use of Python functions, conditional statements, and data visualization using Matplotlib.

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2. Problem Statement

Many people are unsure whether their symptoms are serious enough to require medical attention. There is a need for a simple, interactive program that can guide users by evaluating their symptoms and giving a basic risk indication along with an easy-to-understand visual representation.

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3. Functional Requirements

1. The system must accept the user's name.

2. The system must display a list of symptoms and take y/n inputs from the user.

3. The system must calculate a score based on the number of symptoms.

4. It must determine a health status message (e.g., Take Rest, Visit a Doctor).

5. It must generate a pie chart showing danger vs safe percentage.

6. It must return/print the user's health risk category.

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4. Non-Functional Requirements

1. Usability: The system should be simple and easy for beginners to use.

2. Reliability: Inputs must be validated using .lower() to avoid errors.

3. Performance: Output and chart generation must be fast.

4. Portability: Should run on any device with Python and Matplotlib installed.

5. Maintainability: Code should be modular using functions.

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5. System Architecture

Input Layer:

User provides name

User answers y/n for symptoms

Processing Layer:

Score calculation

Condition-based classification

Chart data generation

Output Layer:

Health status message

Pie chart showing danger vs safe percentage

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6. Workflow Diagram (Text Form)

Start

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Ask User Name

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Display Symptoms List

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User Inputs Y/N for Each Symptom

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Calculate Score

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Determine Health Status

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Generate Pie Chart (Danger vs Safe)

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Display Results

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End

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7. Rationale

The project aims to provide a quick, beginner-friendly health assessment tool using Python programming fundamentals. It was chosen because it combines logic, user interaction, and data visualization, making it perfect for students learning Python.

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8. Implementation Details

Implemented using Python functions (user_name(), get_symptoms(), show_pie_chart()).

Symptoms stored in a list and iterated using a for loop.

Score increments for every “y” input.

matplotlib.pyplot used to generate a colored pie chart.

Conditional statements classify user into risk categories.

Modular code ensures readability and easy debugging.

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9. Testing Approach

Unit Testing: Tested each function separately (name input, scoring logic, chart display).

Input Testing: Checked inputs like Y, y, N, n, and invalid entries.

Boundary Testing: Scores like 0, 3, 5, and >5 verified for correct status output.

Visualization Test: Verified pie chart displays correct percentages.

10. Challenges Faced

Handling indentation errors in Python.

Accidentally calling symptom function twice, causing repeat questions.

Ensuring score is returned properly from functions.

Managing pie chart display issues on some systems.

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11. Learnings & Key Takeaways

Importance of correct indentation in Python.

How to structure programs using functions.

Handling user input effectively.

Basics of data visualization with Matplotlib.

How to convert logic into meaningful output and charts.

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12. Future Enhancements

Add a GUI using Tkinter or PyQt.

Include more symptoms and weighted scoring.

Add a PDF report generator for user results.

Connect to a database for storing user history.

Implement AI/ML-based prediction model.

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13. References

Books:

“Let Us Python” by Yashavant Kanetkar

“Python Programming” – Reema Thareja

“Artificial Intelligence” – V. V. VYTIARTHI

YouTube Channels:

CodeWithHarry

Telusko

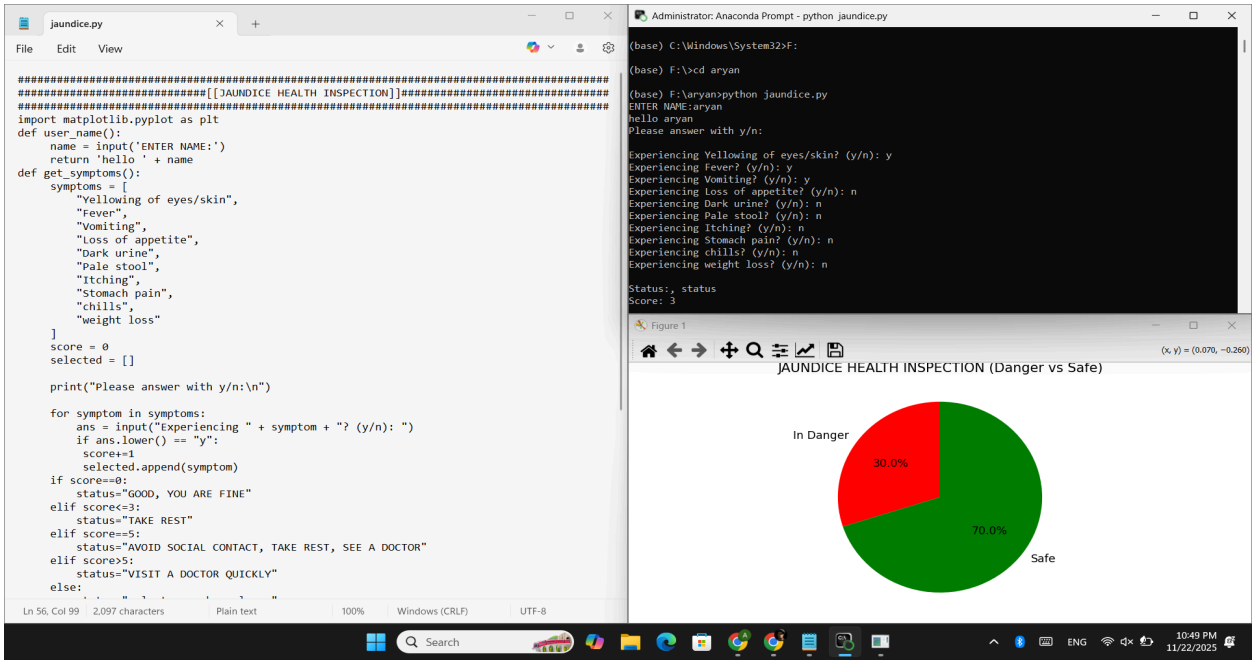
FreeCodeCamp

ProgrammingWithMosh

Online Resources:

Matplotlib Official Documentation

Python.org Tutorials


jaundice.py
File Edit View
##########[[JAUNDICE HEALTH INSPECTION]]##########
import matplotlib.pyplot as plt
def user_name():
name = input('ENTER NAME:')
return 'hello ' + name
def get_symptoms():
symptoms = [
"Yellowing of eyes/skin",
"Fever",
"Vomiting",
"Loss of appetite",
"Dark urine",
"Pale stool",
"Itching",
"Stomach pain",
"chills",
"weight loss"
]
score = 0
selected = []
print("Please answer with y/n:\n")
for symptom in symptoms:
ans = input("Experiencing " + symptom + "? (y/n): ")
if ans.lower() == "y":
score+=1
selected.append(symptom)
if score==0:
status="GOOD, YOU ARE FINE"
elif score<=3:
status="TAKE REST"
elif score==5:
status="AVOID SOCIAL CONTACT, TAKE REST, SEE A DOCTOR"
elif score>5:
status="VISIT A DOCTOR QUICKLY"
else:
Ln 56, Col 99 2,097 characters Plain text 100% Windows (CRLF) UTF-8
Administrator: Anaconda Prompt - python jaundice.py
(base) C:\Windows\System32>F:
(base) F:\>cd aryan
(base) F:\aryan>python jaundice.py
ENTER NAME:aryan
hello aryan
Please answer with y/n:
Experiencing Yellowing of eyes/skin? (y/n): y
Experiencing Fever? (y/n): y
Experiencing Vomiting? (y/n): y
Experiencing Loss of appetite? (y/n): n
Experiencing Dark urine? (y/n): n
Experiencing Pale stool? (y/n): n
Experiencing Itching? (y/n): n
Experiencing Stomach pain? (y/n): n
Experiencing chills? (y/n): n
Experiencing weight loss? (y/n): n
Status:, status
Score: 3
Figure 1
(x, y) = (0.070, −0.260)
JAUNDICE HEALTH INSPECTION (Danger vs Safe)
In Danger
30.0%
70.0%
Safe
Search
ENG
10:49 PM
11/22/2025