Southern Luzon State University
College Of Engineering
Computer Engineering Department

PROGRAMMING PROJECT

CpE05 - Object Oriented Programming
SY 2023-2024

Name: MASAGNAY, Daneil Carlo V. Date: 06/06/24

Section/Schedule: BSCpE II-IF TUE/THU – 10:30AM – 1:30PM Score:_____

TITLE:

Basic Health Problem A.I. Consultant

BENEFICIARY:

Community

OBJECTIVE:

The Basic Health Problem A.I. Consultant aims to close the healthcare access gap by providing an easily accessible and user-friendly platform for individuals to receive guidance on common health concerns. The program uses artificial intelligence (A.I.) algorithms to analyze user-provided symptoms and demographic data in order to provide personalized recommendations for over-the-counter medication and dosages.

PROBLEM DEFINITION:

Many communities have limited access to healthcare services, and individuals may struggle to identify and address common health issues in a timely manner. Furthermore, understanding appropriate medication and dosage for specific ailments, particularly for non-prescription drugs, can be challenging.

PROGRAM DESCRIPTION:

The Basic Health Problem A.I. Consultant is a software application that helps people assess their health concerns and determine the best course of action. The program includes a graphical user interface (GUI) where users can enter their symptoms and age.

When the program receives user input, it employs artificial intelligence (AI). Algorithms for analyzing symptoms and demographic data. Based on this analysis, it makes recommendations for common health issues and suggests appropriate over-the-counter medications, as well as recommended dosages based on the user's age.

The GUI improves the user experience by offering an easy interface for entering symptoms and viewing recommendations. By providing this preliminary guidance, the program hopes to empower people to make informed decisions about their health and seek appropriate medical attention when necessary. Finally, the Basic Health Problem A.I. Consultant helps to raise health awareness and ensure timely access to healthcare resources in the community.

SOURCE CODE:

```
//MASAGNAY, Daneil Carlo V.

import java.awt.*;
import java.awt.event.ActionEvent;
import java.awt.event.ActionListener;
import javax.swing.*;
import javax.swing.border.TitledBorder;

public class BasicHealthProblemAIConsultant //main class
{
   public static void main(String[] args)
```

```
    {
        Project p = new Project(); // Create an instance of the Project class and call the Start method
        p.Start();
    }
}

class Project // Definition of the Project class
{
        // Declare instance variables for various health-related parameters
        // apply encapsulation
        private int overallResult, clickedCount, Age;
        private String medication, allergy, cold, flu, conjunctivitis, diarrhea, headaches, stomachaches, nausea_vomiting, checkup;

    // Start method to set up the GUI
    void Start()
    {
        // Create the main JFrame window
        JFrame mainGUI = new JFrame();
        mainGUI.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
        mainGUI.setLocation(420, 10);
        mainGUI.setSize(750, 800);
        mainGUI.setTitle("Basic Health Problem AI Consultant");

        // Set the icon of the window
        ImageIcon icon = new ImageIcon("res/images/mainPageIconYellow.png");

        // Create a BackgroundPanel with a background image
        ImageIcon backgroundImage = new ImageIcon("res/images/mainPageBg.jpg");
        BackgroundPanel backgroundPanel = new BackgroundPanel(backgroundImage.getImage());
        backgroundPanel.setLayout(null);

        // Define a custom color for text
        Color textColor = new Color(214, 146, 46);

        // Create the "Start" button
        JButton Start = new JButton("Start");
        Start.addActionListener(new ActionListener()
        {
            public void actionPerformed(ActionEvent e)
            {
                // Call the start method when the "Start" button is clicked
                start();
                // Close the main window
                mainGUI.dispose();
            }
        });

        // Create the "Exit" button
        JButton Exit = new JButton("Exit");
        Exit.addActionListener(new ActionListener()
        {
            public void actionPerformed(ActionEvent e)
            {
                // Exit the application when the "Exit" button is clicked
                System.exit(0);
            }
        });

        // Set button properties (focusable, bounds, background color, foreground color, font)
```

```
        Start.setFocusable(false);
        Exit.setFocusable(false);

        Start.setBounds(470, 420, 120, 40);
        Exit.setBounds(600, 420, 120, 40);

        Start.setBackground(Color.WHITE);
        Start.setForeground(textColor);
        Start.setFont(new Font("Arial", Font.BOLD, 20));
        Exit.setBackground(Color.WHITE);
        Exit.setForeground(textColor);
        Exit.setFont(new Font("Arial", Font.BOLD, 20));

        // Add buttons to the background panel
        backgroundPanel.add(Start);
        backgroundPanel.add(Exit);

        // Set the icon and content pane of the main window
        mainGUI.setIconImage(icon.getImage());
        mainGUI.setContentPane(backgroundPanel);

        // Make the main window visible
        mainGUI.setVisible(true);
    }


    void start() {
        // Create a new JFrame window
        JFrame start = new JFrame();
        start.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
        start.setLocation(420, 10);
        start.setSize(750, 800);
        start.setTitle("Basic Health Problem AI Consultant");

        // Set the icon for the window
        ImageIcon icon = new ImageIcon("res/images/mainPageIconYellow.png");

        // Create a BackgroundPanel with a background image
        ImageIcon backgroundImage = new ImageIcon("res/images/startPageBg.jpg");
        BackgroundPanel backgroundPanel = new
BackgroundPanel(backgroundImage.getImage());
        backgroundPanel.setLayout(null);

        // Define a custom color for text
        Color textColor = new Color(214, 146, 46);

        // Create the "About" button
        JButton About = new JButton("About");
        About.addActionListener(new ActionListener() {
            public void actionPerformed(ActionEvent e) {
                // Call the About method when the "About" button is clicked
                About();
            }
        });

        // Create the "Continue" button
        JButton Continue = new JButton("Continue");
        Continue.setBounds(470, 420, 120, 40);
        Continue.addActionListener(new ActionListener() {
            public void actionPerformed(ActionEvent e) {
                // Call the Input method when the "Continue" button is clicked
                Input();
```

```
            // Close the current window
            start.dispose();
        }
    });

    // Create the "Exit" button
    JButton Exit = new JButton("Exit");
    Exit.addActionListener(new ActionListener() {
        public void actionPerformed(ActionEvent e) {
            // Exit the application when the "Exit" button is clicked
            System.exit(0);
        }
    });

    // Set button properties (focusable, bounds, background color, foreground color, font)
    About.setFocusable(false);
    Continue.setFocusable(false);
    Exit.setFocusable(false);

    About.setBounds(20, 375, 120, 40);
    Continue.setBounds(160, 375, 120, 40);
    Exit.setBounds(300, 375, 120, 40);

    // Add buttons to the background panel
    backgroundPanel.add(About);
    backgroundPanel.add(Continue);
    backgroundPanel.add(Exit);

    About.setBackground(Color.WHITE);
    About.setForeground(textColor);
    About.setFont(new Font("Arial", Font.BOLD, 20));

    Continue.setBackground(Color.WHITE);
    Continue.setForeground(textColor);
    Continue.setFont(new Font("Arial", Font.BOLD, 20));

    Exit.setBackground(Color.WHITE);
    Exit.setForeground(textColor);
    Exit.setFont(new Font("Arial", Font.BOLD, 20));

    // Set the icon and content pane of the window
    start.setIconImage(icon.getImage());
    start.setContentPane(backgroundPanel);

    // Make the window visible
    start.setVisible(true);
}


void About() {
    // Create a new JFrame window for the "About" section
    JFrame about = new JFrame();
    about.setLocation(70, 10);
    about.setSize(300, 400);
    about.setTitle("About the Developer");

    // Set the icon for the window
    ImageIcon icon = new ImageIcon("res/images/mainPageIconYellow.png");

    // Create a BackgroundPanel with a background image
    ImageIcon backgroundImage = new ImageIcon("res/images/aboutPageBg.jpg");
```

```
        BackgroundPanel backgroundPanel = new BackgroundPanel(backgroundImage.getImage());
        backgroundPanel.setLayout(null);

        // Define a custom color for text
        Color textColor = new Color(214, 146, 46);

        // Create labels and a text area for the developer's information
        JLabel title = new JLabel("ABOUT THE DEVELOPER");
        JLabel name = new JLabel("MASAGNAY, Daneil Carlo V.");
        JTextArea description = new JTextArea("This program was developed by Daneil Carlo V. Masagnay, a student at Southern Luzon State University, currently pursuing a degree in Computer Engineering.");

        // Create the "Exit" button
        JButton Exit = new JButton("Exit");
        Exit.addActionListener(new ActionListener() {
            public void actionPerformed(ActionEvent e) {
                // Close the "About" window when the "Exit" button is clicked
                about.dispose();
            }
        });

        // Set button properties (focusable)
        Exit.setFocusable(false);

        // Set the properties of the title label
        title.setForeground(textColor);
        title.setFont(new Font("Arial", Font.BOLD, 18));

        // Set the properties of the name label
        name.setForeground(textColor);
        name.setFont(new Font("Arial", Font.BOLD, 14));

        // Set the properties of the description text area
        description.setForeground(textColor);
        description.setFont(new Font("Arial", Font.PLAIN, 12));
        description.setWrapStyleWord(true);
        description.setLineWrap(true);
        description.setEditable(false);
        description.setOpaque(false);
        description.setBorder(BorderFactory.createTitledBorder(
            BorderFactory.createLineBorder(textColor), "Description", TitledBorder.LEFT, TitledBorder.TOP, new Font("Arial", Font.BOLD, 12), textColor));

        // Set the bounds (position and size) of each component
        title.setBounds(30, 25, 250, 30);
        name.setBounds(20, 160, 250, 30);
        description.setBounds(18, 190, 250, 100);
        Exit.setBounds(90, 300, 120, 40);

        // Add the components to the background panel
        backgroundPanel.add(title);
        backgroundPanel.add(name);
        backgroundPanel.add(description);
        backgroundPanel.add(Exit);

        // Set the properties of the "Exit" button
        Exit.setBackground(Color.WHITE);
        Exit.setForeground(textColor);
        Exit.setFont(new Font("Arial", Font.BOLD, 20));
```

```
        // Set the icon and content pane of the window
        about.setIconImage(icon.getImage());
        about.setContentPane(backgroundPanel);

        // Make the window visible
        about.setVisible(true);
    }


    void Input()
    {
        JFrame input = new JFrame(); // Create a new JFrame for input
        input.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
        input.setLocation(420, 10);
        input.setSize(750, 800);
        input.setTitle("Basic Health Problem AI Consultant");
        // Set the icon for the JFrame
        ImageIcon icon = new ImageIcon("res/images/mainPageIconYellow.png");

        // Create a background panel with an image
        ImageIcon backgroundImage = new ImageIcon("res/images/inputPageBg.jpg");
        BackgroundPanel backgroundPanel = new
BackgroundPanel(backgroundImage.getImage());
        backgroundPanel.setLayout(null);

        // Define text color
        Color textColor = new Color(214,146,46);

        // Create and customize the JTextArea for symptoms
        JTextArea symptomTextArea = new JTextArea();
        symptomTextArea.setEditable(false);
        symptomTextArea.setLineWrap(true);
        symptomTextArea.setWrapStyleWord(true);
        symptomTextArea.setForeground(textColor);
        symptomTextArea.setFont(new Font("Arial", Font.PLAIN, 14));
        symptomTextArea.setForeground(textColor);
        symptomTextArea.setBackground(Color.WHITE);
        symptomTextArea.setText("          1. Sneezing\t\t\t2. Runny or stuffy nose\r\n" +
                                "          3. Itchy or watery eyes\t\t4. Itchy throat or
ears\r\n" +
                                "          5. Fatigue\t\t\t6. Sore throat\r\n" +
                                "          7. Coughing\t\t\t8. Mild body aches\r\n" +
                                "          9. Fever\t\t\t10. Chills\r\n" +
                                "          11. Headache\t\t\t12. Frequent, loose, watery
stools\r\n" +
                                "          13. Nausea\t\t\t14. Abdominal cramps\r\n" +
                                "          15. Severe body aches\t\t16. Increased
tearing\r\n" +
                                "          17. Itchy or gritty feeling\t\t18. Discomfort or
pain in the abdominal area\r\n" +
                        "          19. Bloating\t\t\t20. Discharge (clear, white, yellow, or green)\r\n"
+
                        "          21. Vomiting\t\t\t22. Pain or discomfort in the head or neck\r\n" +
                        "          23. Redness in the white of the eye or inner eyelid\r\n" +
                        "          24. Tension headache: Dull, aching pain on both sides of the
head\r\n" +
                        "          25. Migraine: Intense, throbbing pain often on one side of the
head\r\n" +
                                                "          26. Feeling of queasiness or unease in
the stomach\r\n");
        // Create a titled border for the JTextArea
        TitledBorder border = BorderFactory.createTitledBorder(
```

```
            BorderFactory.createLineBorder(textColor),
            "List of Symptoms",
            TitledBorder.LEFT,
            TitledBorder.TOP,
            new Font("Arial", Font.BOLD, 18),
            textColor
        );
        symptomTextArea.setBorder(border);

        // Create a JLabel for instructions
        JLabel instruction = new JLabel("Click on all the number of symptoms that you are experiencing.");

        // Create JToggleButtons for each symptom number
        // ActionListener increments overallResult and clickedCount when toggled
        JToggleButton A = new JToggleButton("1");
        A.addActionListener(new ActionListener() {
            public void actionPerformed(ActionEvent e) {
                overallResult += 1;
                clickedCount++;
            }
        });

        JToggleButton B = new JToggleButton("2");
        B.addActionListener(new ActionListener() {
            public void actionPerformed(ActionEvent e) {
                overallResult += 2;
                clickedCount++;
            }
        });

        JToggleButton C = new JToggleButton("3");
        C.addActionListener(new ActionListener() {
            public void actionPerformed(ActionEvent e) {
                overallResult += 3;
                clickedCount++;
            }
        });

        JToggleButton D = new JToggleButton("4");
        D.addActionListener(new ActionListener() {
            public void actionPerformed(ActionEvent e) {
                overallResult += 4;
                clickedCount++;
            }
        });

        JToggleButton E = new JToggleButton("5");
        E.addActionListener(new ActionListener() {
            public void actionPerformed(ActionEvent e) {
                overallResult += 5;
                clickedCount++;
            }
        });

        JToggleButton F = new JToggleButton("6");
        F.addActionListener(new ActionListener() {
            public void actionPerformed(ActionEvent e) {
                overallResult += 6;
                clickedCount++;
            }
        });
```

```
JToggleButton G = new JToggleButton("7");
G.addActionListener(new ActionListener() {
    public void actionPerformed(ActionEvent e) {
        overallResult += 7;
        clickedCount++;
    }
});

JToggleButton H = new JToggleButton("8");
G.addActionListener(new ActionListener() {
    public void actionPerformed(ActionEvent e) {
        overallResult += 8;
        clickedCount++;
    }
});

JToggleButton I = new JToggleButton("9");
G.addActionListener(new ActionListener() {
    public void actionPerformed(ActionEvent e) {
        overallResult += 9;
        clickedCount++;
    }
});

JToggleButton J = new JToggleButton("10");
J.addActionListener(new ActionListener() {
    public void actionPerformed(ActionEvent e) {
        overallResult += 10;
        clickedCount++;
    }
});

JToggleButton K = new JToggleButton("11");
K.addActionListener(new ActionListener() {
    public void actionPerformed(ActionEvent e) {
        overallResult += 11;
        clickedCount++;
    }
});

JToggleButton L = new JToggleButton("12");
L.addActionListener(new ActionListener() {
    public void actionPerformed(ActionEvent e) {
        overallResult += 12;
        clickedCount++;
    }
});

JToggleButton M = new JToggleButton("13");
M.addActionListener(new ActionListener() {
    public void actionPerformed(ActionEvent e) {
        overallResult += 13;
        clickedCount++;
    }
});

JToggleButton N = new JToggleButton("14");
N.addActionListener(new ActionListener() {
    public void actionPerformed(ActionEvent e) {
        overallResult += 14;
        clickedCount++;
```

```
        }
    });

    JToggleButton O = new JToggleButton("15");
    O.addActionListener(new ActionListener() {
        public void actionPerformed(ActionEvent e) {
            overallResult += 15;
            clickedCount++;
        }
    });

    JToggleButton P = new JToggleButton("16");
    P.addActionListener(new ActionListener() {
        public void actionPerformed(ActionEvent e) {
            overallResult += 16;
            clickedCount++;
        }
    });

    JToggleButton Q = new JToggleButton("17");
    Q.addActionListener(new ActionListener() {
        public void actionPerformed(ActionEvent e) {
            overallResult += 17;
            clickedCount++;
        }
    });

    JToggleButton R = new JToggleButton("18");
    R.addActionListener(new ActionListener() {
        public void actionPerformed(ActionEvent e) {
            overallResult += 18;
            clickedCount++;
        }
    });

    JToggleButton S = new JToggleButton("19");
    S.addActionListener(new ActionListener() {
        public void actionPerformed(ActionEvent e) {
            overallResult += 19;
            clickedCount++;
        }
    });

    JToggleButton T = new JToggleButton("20");
    T.addActionListener(new ActionListener() {
        public void actionPerformed(ActionEvent e) {
            overallResult += 20;
            clickedCount++;
        }
    });

    JToggleButton U = new JToggleButton("21");
    U.addActionListener(new ActionListener() {
        public void actionPerformed(ActionEvent e) {
            overallResult += 21;
            clickedCount++;
        }
    });

    JToggleButton V = new JToggleButton("22");
    V.addActionListener(new ActionListener() {
        public void actionPerformed(ActionEvent e) {
```

```
            overallResult += 22;
            clickedCount++;
        }
    });

    JToggleButton W = new JToggleButton("23");
    W.addActionListener(new ActionListener() {
        public void actionPerformed(ActionEvent e) {
            overallResult += 23;
            clickedCount++;
        }
    });

    JToggleButton X = new JToggleButton("24");
    X.addActionListener(new ActionListener() {
        public void actionPerformed(ActionEvent e) {
            overallResult += 24;
            clickedCount++;
        }
    });

    JToggleButton Y = new JToggleButton("25");
    Y.addActionListener(new ActionListener() {
        public void actionPerformed(ActionEvent e) {
            overallResult += 25;
            clickedCount++;
        }
    });

    JToggleButton Z = new JToggleButton("26");
    Z.addActionListener(new ActionListener() {
        public void actionPerformed(ActionEvent e) {
            overallResult += 26;
            clickedCount++;
        }
    });

    // Create JLabel and JTextField for age input
    JLabel ageText = new JLabel("Age: ");
    JTextField ageTextField = new JTextField(3);

    // Create JButton for getting result
    JButton Result = new JButton("Get Result");
    // ActionListener parses age input and processes result
        Result.addActionListener(new ActionListener()
        {
                public void actionPerformed(ActionEvent e)
                {
                        Age = Integer.parseInt(ageTextField.getText());
                        process(overallResult, clickedCount, Age);
                        input.dispose();
                }
        });
     // Create JButton for exiting the application
    JButton Exit = new JButton("Exit");
    // ActionListener exits the application
        Exit.addActionListener(new ActionListener()
        {
                public void actionPerformed(ActionEvent e)
                {
                        System.exit(0);
                }
```

```
        });
        // Set components not focusable
    A.setFocusable(false);
    B.setFocusable(false);
    C.setFocusable(false);
    D.setFocusable(false);
    E.setFocusable(false);
    F.setFocusable(false);
    G.setFocusable(false);
    H.setFocusable(false);
    I.setFocusable(false);
    J.setFocusable(false);
    K.setFocusable(false);
    L.setFocusable(false);
    M.setFocusable(false);
    N.setFocusable(false);
    O.setFocusable(false);
    P.setFocusable(false);
    Q.setFocusable(false);
    R.setFocusable(false);
    S.setFocusable(false);
    T.setFocusable(false);
    U.setFocusable(false);
    V.setFocusable(false);
    W.setFocusable(false);
    X.setFocusable(false);
    Y.setFocusable(false);
    Z.setFocusable(false);
    Result.setFocusable(false);
    Exit.setFocusable(false);

    // Set bounds for components
    symptomTextArea.setBounds(20, 185, 700, 290);

    instruction.setBounds(64, 465, 600, 50);
    //first row
    A.setBounds(64, 505, 50, 50);
    B.setBounds(134, 505, 50, 50);
    C.setBounds(204, 505, 50, 50);
    D.setBounds(274, 505, 50, 50);
    E.setBounds(344, 505, 50, 50);
    F.setBounds(414, 505, 50, 50);
    G.setBounds(484, 505, 50, 50);
    H.setBounds(554, 505, 50, 50);
    I.setBounds(624, 505, 50, 50);

    //second row
    J.setBounds(64, 570, 50, 50);
    K.setBounds(134, 570, 50, 50);
    L.setBounds(204, 570, 50, 50);
    M.setBounds(274, 570, 50, 50);
    N.setBounds(344, 570, 50, 50);
    O.setBounds(414, 570, 50, 50);
    P.setBounds(484, 570, 50, 50);
    Q.setBounds(554, 570, 50, 50);
    R.setBounds(624, 570, 50, 50);
    //third row
    S.setBounds(64, 635, 50, 50);
    T.setBounds(134, 635, 50, 50);
    U.setBounds(204, 635, 50, 50);
    V.setBounds(274, 635, 50, 50);
    W.setBounds(344, 635, 50, 50);
```

```
X.setBounds(414, 635, 50, 50);
Y.setBounds(484, 635, 50, 50);
Z.setBounds(554, 635, 50, 50);

ageText.setBounds(75, 700, 150, 40);
ageTextField.setBounds(134, 700, 50, 40);

Result.setBounds(420, 700, 150, 40);
Exit.setBounds(580, 700, 120, 40);

// Add components to background panel
backgroundPanel.add(symptomTextArea);
backgroundPanel.add(instruction);
backgroundPanel.add(A);
backgroundPanel.add(B);
backgroundPanel.add(C);
backgroundPanel.add(D);
backgroundPanel.add(E);
backgroundPanel.add(F);
backgroundPanel.add(G);
backgroundPanel.add(H);
backgroundPanel.add(I);
backgroundPanel.add(J);
backgroundPanel.add(K);
backgroundPanel.add(L);
backgroundPanel.add(M);
backgroundPanel.add(N);
backgroundPanel.add(O);
backgroundPanel.add(P);
backgroundPanel.add(Q);
backgroundPanel.add(R);
backgroundPanel.add(S);
backgroundPanel.add(T);
backgroundPanel.add(U);
backgroundPanel.add(V);
backgroundPanel.add(W);
backgroundPanel.add(X);
backgroundPanel.add(Y);
backgroundPanel.add(Z);
backgroundPanel.add(ageText);
backgroundPanel.add(ageTextField);
backgroundPanel.add(Result);
backgroundPanel.add(Exit);

// Customize appearance of components
instruction.setForeground(Color.WHITE);
instruction.setFont(new Font("Arial", Font.BOLD, 20));
A.setBackground(Color.WHITE);
A.setForeground(textColor);
A.setFont(new Font("Arial", Font.BOLD, 20));
B.setBackground(Color.WHITE);
B.setForeground(textColor);
B.setFont(new Font("Arial", Font.BOLD, 20));
C.setBackground(Color.WHITE);
C.setForeground(textColor);
C.setFont(new Font("Arial", Font.BOLD, 20));
D.setBackground(Color.WHITE);
D.setForeground(textColor);
D.setFont(new Font("Arial", Font.BOLD, 20));
E.setBackground(Color.WHITE);
E.setForeground(textColor);
E.setFont(new Font("Arial", Font.BOLD, 20));
```

```
F.setBackground(Color.WHITE);
F.setForeground(textColor);
F.setFont(new Font("Arial", Font.BOLD, 20));
G.setBackground(Color.WHITE);
G.setForeground(textColor);
G.setFont(new Font("Arial", Font.BOLD, 20));
H.setBackground(Color.WHITE);
H.setForeground(textColor);
H.setFont(new Font("Arial", Font.BOLD, 20));
I.setBackground(Color.WHITE);
I.setForeground(textColor);
I.setFont(new Font("Arial", Font.BOLD, 20));
J.setBackground(Color.WHITE);
J.setForeground(textColor);
J.setFont(new Font("Arial", Font.BOLD, 14));
K.setBackground(Color.WHITE);
K.setForeground(textColor);
K.setFont(new Font("Arial", Font.BOLD, 14));
L.setBackground(Color.WHITE);
L.setForeground(textColor);
L.setFont(new Font("Arial", Font.BOLD, 14));
M.setBackground(Color.WHITE);
M.setForeground(textColor);
M.setFont(new Font("Arial", Font.BOLD, 14));
N.setBackground(Color.WHITE);
N.setForeground(textColor);
N.setFont(new Font("Arial", Font.BOLD, 14));
O.setBackground(Color.WHITE);
O.setForeground(textColor);
O.setFont(new Font("Arial", Font.BOLD, 14));
P.setBackground(Color.WHITE);
P.setForeground(textColor);
P.setFont(new Font("Arial", Font.BOLD, 14));
Q.setBackground(Color.WHITE);
Q.setForeground(textColor);
Q.setFont(new Font("Arial", Font.BOLD, 14));
R.setBackground(Color.WHITE);
R.setForeground(textColor);
R.setFont(new Font("Arial", Font.BOLD, 14));
S.setBackground(Color.WHITE);
S.setForeground(textColor);
S.setFont(new Font("Arial", Font.BOLD, 14));
T.setBackground(Color.WHITE);
T.setForeground(textColor);
T.setFont(new Font("Arial", Font.BOLD, 14));
U.setBackground(Color.WHITE);
U.setForeground(textColor);
U.setFont(new Font("Arial", Font.BOLD, 14));
V.setBackground(Color.WHITE);
V.setForeground(textColor);
V.setFont(new Font("Arial", Font.BOLD, 14));
W.setBackground(Color.WHITE);
W.setForeground(textColor);
W.setFont(new Font("Arial", Font.BOLD, 14));
X.setBackground(Color.WHITE);
X.setForeground(textColor);
X.setFont(new Font("Arial", Font.BOLD, 14));
Y.setBackground(Color.WHITE);
Y.setForeground(textColor);
Y.setFont(new Font("Arial", Font.BOLD, 14));
Z.setBackground(Color.WHITE);
Z.setForeground(textColor);
```

```
        Z.setFont(new Font("Arial", Font.BOLD, 14));
        ageText.setForeground(textColor);
        ageText.setFont(new Font("Arial", Font.BOLD, 14));
        ageTextField.setBackground(Color.WHITE);
        ageTextField.setForeground(textColor);
        ageTextField.setFont(new Font("Arial", Font.BOLD, 14));
        Result.setBackground(Color.WHITE);
        Result.setForeground(textColor);
        Result.setFont(new Font("Arial", Font.BOLD, 20));
        Exit.setBackground(Color.WHITE);
        Exit.setForeground(textColor);
        Exit.setFont(new Font("Arial", Font.BOLD, 20));

        // Set icon and content pane for input JFrame
        input.setIconImage(icon.getImage());
        input.setContentPane(backgroundPanel);
        input.setVisible(true);
    }

    void process(int sum, int count, int age) // get the value of sum, count, and age
    {
            // Check if symptoms and overall result fall within certain ranges to determine potential
health issues
            // Determine medication dosage based on age
            // Generate information for potential health problem
            // Pass the results to getResult method
            if ((count>2)&&(count<6)&&(sum>5)&&(sum<16))
                    {
                    if ((age>1)&&(age<6))
                    {
                            medication = "Dosage: 5 mg once daily";
                    }
                    if (age>5)
                    {
                            medication = "Dosage: 10 mg once daily";
                    }

                            allergy = "You Probably have allergies. \n"
                                    + "[Allergies] Immune system reaction to allergens
causing symptoms like sneezing and itching.\r\n"
                                    + "To make sure, these are the following symptoms:\n"
                                    + "•     Runny or stuffy nose\r\n"
                                    + "•     Sneezing\r\n"
                                    + "•     Sore throat\r\n"
                                    + "•     Coughing\r\n"
                                    + "•     Mild body aches\r\n"
                                    + "Medication:  Loratadine (Antihistamine)\n"
                                    + medication + "\n\n";

                            getResult(allergy, cold, flu, conjunctivitis, diarrhea, headaches,
stomachaches, nausea_vomiting, checkup);
                    }
                    if ((count>2)&&(count<6)&&(sum>8)&&(sum<25))
                    {
                            if ((age>1)&&(age<7))
                            {
                                    medication = "Dosage: 120 mg to 250 mg per dose every 4-6
hours";
                            }
                            if ((age>6)&&(age<13))
                            {
```

```
                                medication = "Dosage: 250 mg to 500 mg per dose every 4-6
hours";
                        }
                        if (age>12)
                        {
                                medication = "Dosage: 500 mg to 1000 mg per dose every 4-6
hours";
                        }
                        cold = "You Probably have cold. \n"
                                + "[Cold] Common viral infection affecting the nose and
throat.\r\n"
                                + "To make sure, these are the following symptoms:\n"
                                + "•    Sneezing\r\n"
                                + "•    Runny or stuffy nose\r\n"
                                + "•    Itchy or watery eyes\r\n"
                                + "•    Itchy throat or ears\r\n"
                                + "•    Fatigue\r\n"
                                + "Medication: Paracetamol (Acetaminophen)\n"
                                + medication + "\n\n";

                        getResult(allergy, cold, flu, conjunctivitis, diarrhea, headaches,
stomachaches, nausea_vomiting, checkup);
                }
                if ((count>2)&&(count<6)&&(sum>23)&&(sum<51))
                {
                        if ((age>1)&&(age<7))
                        {
                                medication = "Dosage: 120 mg to 250 mg per dose every 4-6
hours";
                        }
                        if ((age>6)&&(age<13))
                        {
                                medication = "Dosage: 250 mg to 500 mg per dose every 4-6
hours";
                        }
                        if (age>12)
                        {
                                medication = "Dosage: 500 mg to 1000 mg per dose every 4-6
hours";
                        }
                        flu = "You probably have Flu. \n"
                                + "[Flu] Respiratory illness caused by influenza viruses.\r\n"
                                + "To make sure, these are the following symptoms:\n"
                                + "•    Fever\r\n"
                                + "•    Chills\r\n"
                                + "•    Fatigue\r\n"
                                + "•    Headache\r\n"
                                + "•    Severe body aches\r\n"
                                + "Medication: Paracetamol (Acetaminophen)\n"
                                + medication + "\n\n";

                        getResult(allergy, cold, flu, conjunctivitis, diarrhea, headaches,
stomachaches, nausea_vomiting, checkup);
                }
                if ((count>1)&&(count<5)&&(sum>32)&&(sum<77)) //
                {
                        conjunctivitis = "You probably have Conjuctivitis(Pink Eye). \n"
                                                + "[Conjunctivitis (Pink Eye] Inflammation of the
outermost layer of the eye.\r\n"
                                                + "To make sure, these are the following
symptoms:\n"
```

```
                                        + "•  Redness in the white of the eye or inner eyelid\r\n"
                                        + "•  Increased tearing\r\n"
                                        + "•  Itchy or gritty feeling\r\n"
                                        + "•  Discharge (clear, white, yellow, or green)\r\n"
                                        + "Medication: Eye drops \n"
                                        + "Dosage: Apply 1-2 drops to the affected eye as needed for relief \n\n";

                        getResult(allergy, cold, flu, conjunctivitis, diarrhea, headaches, stomachaches, nausea_vomiting, checkup);
                }
                if ((count>1)&&(count<5)&&(sum>25)&&(sum<59))
                {
                        if (age==2)
                                medication = "Use pediatric formulations or as directed by a healthcare professional";
                        if ((age>2)&&(age<7))
                                medication = "Dosage: 50-100 mL (1/4 to 1/2 of a standard cup) after each loose stool";
                        if ((age>6)&&(age<13))
                                medication = "Dosage: 100-200 mL (1/2 to 1 standard cup) after each loose stool";
                        if (age>12)
                                medication = "Dosage: 200 mL (1 standard cup) after each loose stool";
                        diarrhea = "You probably have Diarrhea. \n"
                                        +  "[Diarrhea] Frequent and watery bowel movements.\r\n"
                                        + "To make sure, these are the following symptoms:\n"
                                        + "•  Frequent, loose, watery stools\r\n"
                                        + "•  Abdominal cramps\r\n"
                                        + "•  Nausea\r\n"
                                        + "•  Bloating\r\n"
                                        + "Medication: Oral Rehydration Solution (ORS)\n"
                                        + medication + "\n\n";
                        getResult(allergy, cold, flu, conjunctivitis, diarrhea, headaches, stomachaches, nausea_vomiting, checkup);
                }
                if ((count>0)&&(count<4)&&(sum>46)&&(sum<72))
                {
                        if ((age>1)&&(age<7))
                        {
                                medication = "Dosage: 120 mg to 250 mg per dose every 4-6 hours";
                        }
                        if ((age>6)&&(age<13))
                        {
                                medication = "Dosage: 250 mg to 500 mg per dose every 4-6 hours";
                        }
                        if (age>12)
                        {
                                medication = "Dosage: 500 mg to 1000 mg per dose every 4-6 hours";
                        }
                        headaches = "You probably have Headaches. \n"
                                        + "[Headaches] Pain in the head or upper neck.\r\n"
                                        + "To make sure, these are the following symptoms:\n"
                                        + "•  Pain or discomfort in the head or neck\r\n"
```

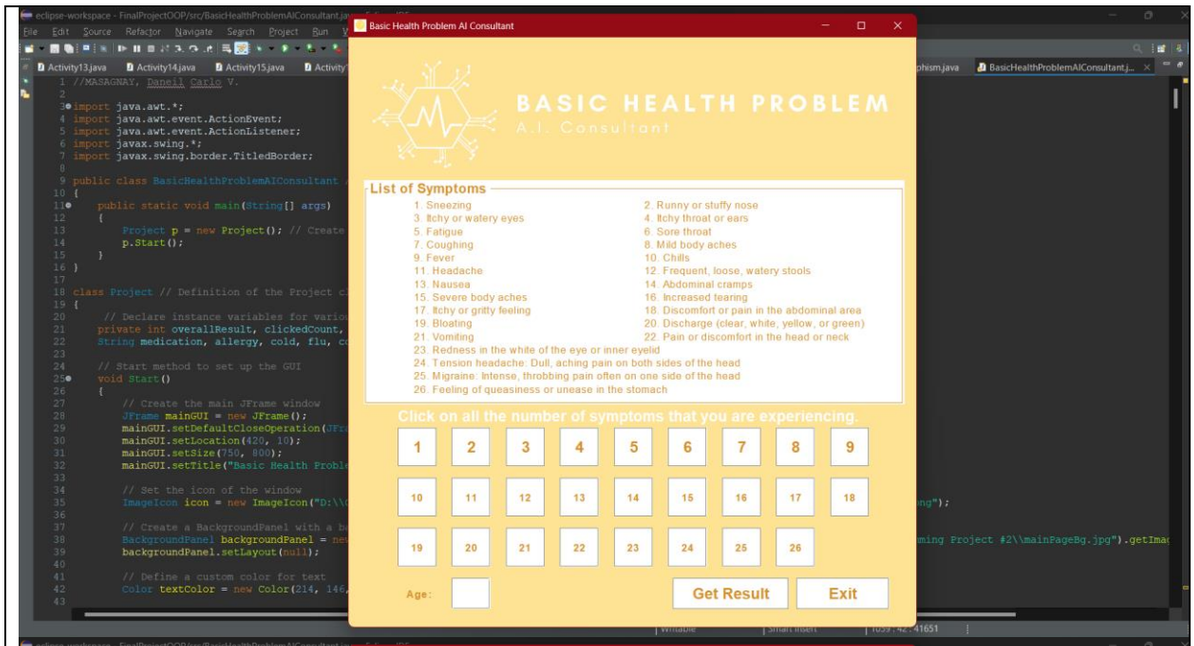
```
                                        + "•  Tension headache: Dull, aching pain on both sides of the head\r\n"
                                        + "•  Migraine: Intense, throbbing pain often on one side of the head\r\n"
                                        + "Medication: Paracetamol (Acetaminophen)\n"
                                        + medication + "\n\n";
                        getResult(allergy, cold, flu, conjunctivitis, diarrhea, headaches, stomachaches, nausea_vomiting, checkup);

                }
                if ((count>1)&&(count<5)&&(sum>26)&&(sum<65))
                {
                        if (age==2)
                                medication = "Consult with a pediatrician for appropriate dosage based on weight";
                        if ((age>2)&&(age<13))
                                medication = "Dosage: 40 mg to 80 mg per dose as needed, up to four times a day";
                        if (age>12)
                                medication = "Dosage: 40 mg to 360 mg per dose as needed, up to four times a day";
                        stomachaches = "You probably have Stomach Aches. \n"
                                        + "[Stomach Aches] Discomfort or pain in the abdominal area.\r\n"
                                        + "To make sure, these are the following symptoms:\n"
                                        + "•  Discomfort or pain in the abdominal area\r\n"
                                        + "•  Cramping\r\n"
                                        + "•  Nausea\r\n"
                                        + "•  Bloating\r\n"
                                        + "Medication: Simethicone (Antiflatulent)\n"
                                        + medication + "\n\n";
                        getResult(allergy, cold, flu, conjunctivitis, diarrhea, headaches, stomachaches, nausea_vomiting, checkup);
                }
                if ((count>0)&&(count<3)&&(sum>21)&&(sum<48))
                {
                        if ((age>1)&&(age<7))
                                medication = "Consult a pediatrician";
                        if ((age>6)&&(age<13))
                        {
                                medication = "Dosage: 12.5 mg to 25 mg every 6-8 hours";
                        }
                        if (age>12)
                        {
                                medication = "Dosage: 25 mg to 50 mg every 4-6 hours";
                        }
                        nausea_vomiting = "You probably have Nausea and Vomiting. \n"
                                                + "[Nausea and Vomiting] Feeling of queasiness or expulsion of stomach contents.\r\n"
                                                + "To make sure, these are the following symptoms:\n"
                                                + "•  Feeling of queasiness or unease in the stomach\r\n"
                                                + "•  Vomiting (forceful expulsion of stomach contents)\r\n"
                                                + "Medication: Dimenhydrinate (Antiemetic)\n"
                                                + medication + "\n\n";
                        getResult(allergy, cold, flu, conjunctivitis, diarrhea, headaches, stomachaches, nausea_vomiting, checkup);
```

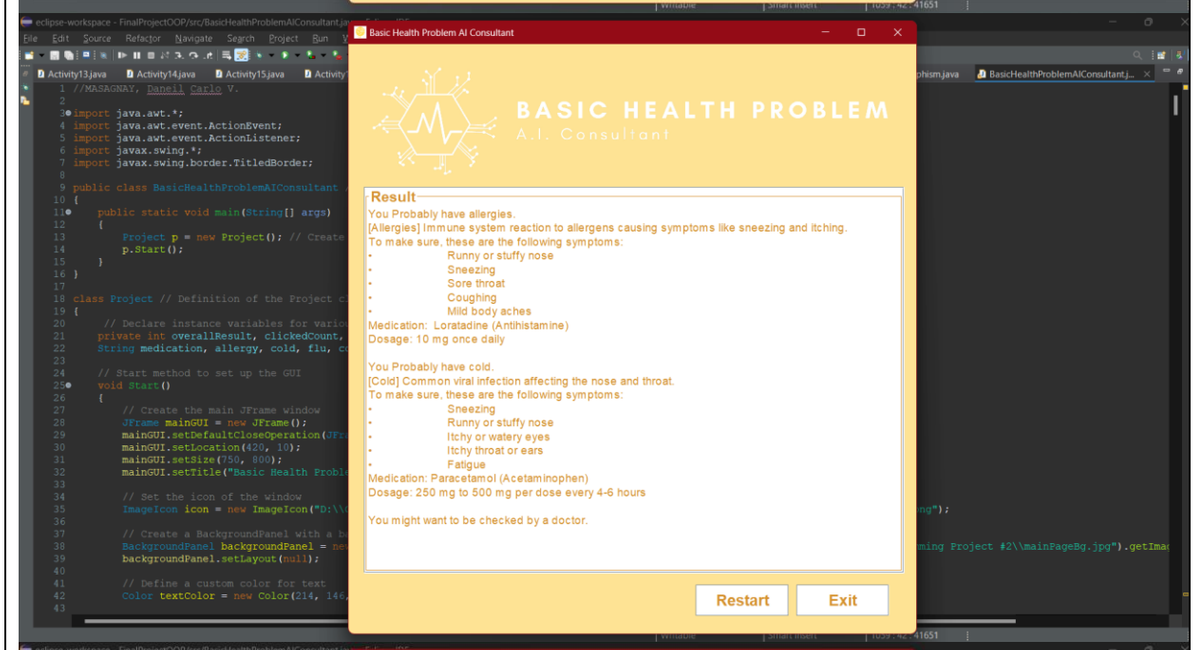
```
                }
                else // If no specific health issue matches, suggest a checkup
                {
                        checkup = "You might want to be checked by a doctor.";
                }
                // Pass the results to getResult method
                getResult(allergy, cold, flu, conjunctivitis, diarrhea, headaches, stomachaches,
nausea_vomiting, checkup);

    }

    // get the value of the string
    void getResult(String allergy, String cold, String flu, String conjunctivitis, String diarrhea,
String headaches, String stomachaches, String nausea_vomiting, String checkup)
    {
        // Create a JFrame for displaying the results
        JFrame result = new JFrame();
        result.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
        result.setLocation(420, 10);
        result.setSize(750, 800);
        result.setTitle("Basic Health Problem AI Consultant");

        // Load an image icon for the JFrame
        ImageIcon icon = new ImageIcon("res/images/mainPageIconYellow.png");

        // Create a background panel with an image background
        ImageIcon backgroundImage = new ImageIcon("res/images/inputPageBg.jpg");
        BackgroundPanel backgroundPanel = new
BackgroundPanel(backgroundImage.getImage());
        backgroundPanel.setLayout(null);

        // Set text color for the results
        Color textColor = new Color(214,146,46);

        // Check if each result is null and assign an empty string if so
        if (allergy == null)
        {
            allergy = "";
        }
        if (cold == null)
        {
            cold = "";
        }
        if (flu == null)
        {
            flu = "";
        }
        if (conjunctivitis == null)
        {
            conjunctivitis = "";
        }
        if (diarrhea == null)
        {
            diarrhea = "";
        }
        if (headaches == null)
        {
            headaches = "";
        }
        if (stomachaches == null)
        {
            stomachaches = "";
```

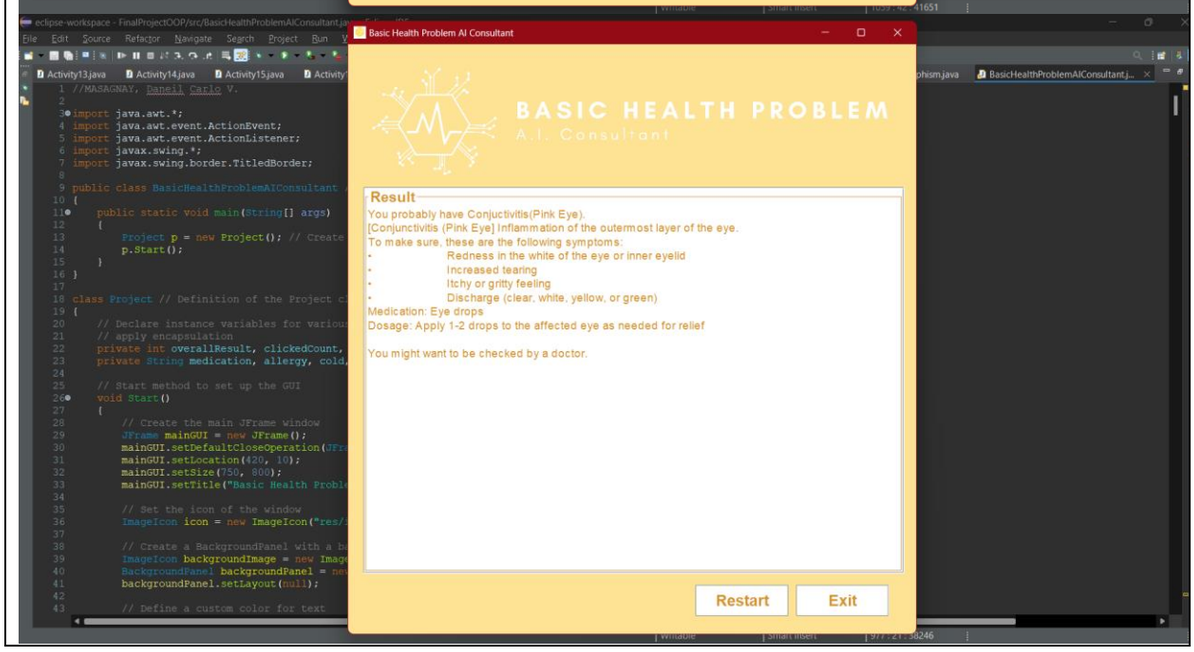
```
        }
        if (nausea_vomiting == null)
        {
            nausea_vomiting = "";
        }
        if (checkup == null)
        {
            checkup = "You might want to be checked by a doctor.";
        }
        // Create a JTextArea to display the results
        JTextArea resultTextArea = new JTextArea();
        resultTextArea.setEditable(false);
        resultTextArea.setLineWrap(true);
        resultTextArea.setWrapStyleWord(true);
        resultTextArea.setForeground(textColor);
        resultTextArea.setFont(new Font("Arial", Font.PLAIN, 15));
        resultTextArea.setForeground(textColor);
        resultTextArea.setBackground(Color.WHITE); // Transparent background
        resultTextArea.setText(allergy + cold + flu + conjunctivitis + diarrhea + headaches +
stomachaches + nausea_vomiting + checkup);

        // Create a titled border for the JTextArea
        TitledBorder border = BorderFactory.createTitledBorder(
                BorderFactory.createLineBorder(textColor),
                "Result",
                TitledBorder.LEFT,
                TitledBorder.TOP,
                new Font("Arial", Font.BOLD, 19), // Border font size
                textColor
        );
        resultTextArea.setBorder(border);

        // Create a JScrollPane to contain the JTextArea
        JScrollPane Result = new JScrollPane(resultTextArea);

        // Create buttons for restart and exit
        JButton Restart = new JButton("Restart");
        JButton Exit = new JButton("Exit");

        // Add action listeners to the buttons and call the methods and dispose the result jframe
        Restart.addActionListener(new ActionListener() {
            public void actionPerformed(ActionEvent e) {
                    resetValues();
                start();
                result.dispose();
            }
        });
        Exit.addActionListener(new ActionListener() {
            public void actionPerformed(ActionEvent e) {
                System.exit(0); // close the program
            }
        });

        // Set focusable false for the buttons
        Restart.setFocusable(false);
        Exit.setFocusable(false);

        // Set bounds for the components
        Result.setBounds(20, 185, 700, 500);
        Restart.setBounds(450, 700, 120, 40);
        Exit.setBounds(580, 700, 120, 40);
```

```
        // Add components to the background panel
        backgroundPanel.add(Result);
        backgroundPanel.add(Restart);
        backgroundPanel.add(Exit);

        // Set properties for the buttons
        Restart.setBackground(Color.WHITE);
        Restart.setForeground(textColor);
        Restart.setFont(new Font("Arial", Font.BOLD, 20));
        Exit.setBackground(Color.WHITE);
        Exit.setForeground(textColor);
        Exit.setFont(new Font("Arial", Font.BOLD, 20));

        // Set icon image for the JFrame and set the content pane
        result.setIconImage(icon.getImage());
        result.setContentPane(backgroundPanel);
        result.setVisible(true);
    }

    void resetValues()
    {
        // Reset integer values
        overallResult = 0;
        clickedCount = 0;
        Age = 0;

        // Reset string values
        medication = null;
        allergy = null;
        cold = null;
        flu = null;
        conjunctivitis = null;
        diarrhea = null;
        headaches = null;
        stomachaches = null;
        nausea_vomiting = null;
        checkup = null;
    }

    // Create a JPanel with background image functionality
    class BackgroundPanel extends JPanel
    {
        private Image backgroundImage;

        public BackgroundPanel(Image backgroundImage) {
            this.backgroundImage = backgroundImage;
        }

        @Override
        protected void paintComponent(Graphics g) {
            super.paintComponent(g);
            g.drawImage(backgroundImage, 0, 0, getWidth(), getHeight(), this);
        }
    }
}
```

SAMPLE OUTPUT:


Basic Health Problem AI Consultant
BASIC HEALTH PROBLEM
A.I. Consultant
List of Symptoms
1. Sneezing
2. Runny or stuffy nose
3. Itchy or watery eyes
4. Itchy throat or ears
5. Fatigue
6. Sore throat
7. Coughing
8. Mild body aches
9. Fever
10. Chills
11. Headache
12. Frequent, loose, watery stools
13. Nausea
14. Abdominal cramps
15. Severe body aches
16. Increased tearing
17. Itchy or gritty feeling
18. Discomfort or pain in the abdominal area
19. Bloating
20. Discharge (clear, white, yellow, or green)
21. Vomiting
22. Pain or discomfort in the head or neck
23. Redness in the white of the eye or inner eyelid
24. Tension headache: Dull, aching pain on both sides of the head
25. Migraine: Intense, throbbing pain often on one side of the head
26. Feeling of queasiness or unease in the stomach
Click on all the number of symptoms that you are experiencing.
1 2 3 4 5 6 7 8 9
10 11 12 13 14 15 16 17 18
19 20 21 22 23 24 25 26
Age:
Get Result
Exit


Basic Health Problem AI Consultant
BASIC HEALTH PROBLEM
A.I. Consultant
Result
You Probably have allergies.
[Allergies] Immune system reaction to allergens causing symptoms like sneezing and itching.
To make sure, these are the following symptoms:
• Runny or stuffy nose
• Sneezing
• Sore throat
• Coughing
• Mild body aches
Medication: Loratadine (Antihistamine)
Dosage: 10 mg once daily
You Probably have cold.
[Cold] Common viral infection affecting the nose and throat.
To make sure, these are the following symptoms:
• Sneezing
• Runny or stuffy nose
• Itchy or watery eyes
• Itchy throat or ears
• Fatigue
Medication: Paracetamol (Acetaminophen)
Dosage: 250 mg to 500 mg per dose every 4-6 hours
You might want to be checked by a doctor.
Restart
Exit


Basic Health Problem AI Consultant
BASIC HEALTH PROBLEM
A.I. Consultant
Result
You probably have Conjuctivitis(Pink Eye).
[Conjunctivitis (Pink Eye] Inflammation of the outermost layer of the eye.
To make sure, these are the following symptoms:
• Redness in the white of the eye or inner eyelid
• Increased tearing
• Itchy or gritty feeling
• Discharge (clear, white, yellow, or green)
Medication: Eye drops
Dosage: Apply 1-2 drops to the affected eye as needed for relief
You might want to be checked by a doctor.
Restart
Exit

*I only included some of the output because there is so many output of this prediction program.