Activity 2: the health guiding bot!

Research:

An electrical switch is a basic device used to control the flow of electricity in a circuit. When the switch is in the ON position, the circuit is closed and electricity flows. When the switch is in the OFF position, the circuit is open and electricity stops flowing. This simple mechanism helps operate lights, fans, and many electrical appliances. In programming, this idea is often used to teach conditional statements, where an input value decides which output should be shown. For example, if the input is 1 the program displays ON, and if the input is 0 the program displays OFF. This is how switching logic is introduced in C programming.

In the same way, the health guiding bot program works by checking the user's inputs and switching to the correct output based on conditions. Just like a switch turns ON or OFF depending on its position, this program checks every health-related input and decides whether the user is following a healthy routine or needs improvement. The program takes four inputs from the user: exercise sessions, junk food intake, yoga sessions, and sleep hours. Each of these values is compared with a healthy range. If any value does not meet the required level, the program switches to an improvement message. If all values are correct, the program switches to the final output that the user is healthy. This simple condition-checking method is similar to how an electrical switch changes its state based on the input.

The code uses basic if statements to check the conditions. These if statements perform the same function that a switch does. They read the input and then decide the correct output. This makes the logic easy to understand and works well for a beginner-level C program. The overall idea is to simulate a decision-making system where different inputs lead to different outputs. This matches the purpose of the original electrical switch simulation task but expands it into a more useful and meaningful application.

Sources used for research

1. GeeksforGeeks – Electrical Switch:
    https://www.geeksforgeeks.org/electric-switch

2. GeeksforGeeks – C if else statements:
    https://www.geeksforgeeks.org/c-if-else-decision-making

3. W3Schools.in – Switch statement in C:
    https://www.w3schools.in/c-programming/decision-making/switch

Analysis (methodology):

The program works by taking four different health-related inputs from the user. These inputs include the number of exercise sessions per week, how often junk food is eaten, the number of yoga sessions, and the hours of sleep per night. Each of these values is stored in separate variables. After taking the inputs, the program checks each one using simple if conditions.

Each condition compares the user's input with a healthy range. If the value does not meet the expected level, the program marks the person as unhealthy and prints a message suggesting improvement. If all values satisfy the healthy range, the program prints that the user is maintaining a healthy lifestyle.

Ideation:

The idea behind this project is to create a simple program that guides a person about their daily health habits. By taking basic inputs such as exercise, sleep, and food intake, the program can decide whether the user is following a healthy routine or needs improvement. The goal is to use conditional statements to check each input and switch to the correct output, similar to how a basic switch changes its state based on inputs.

Algorithms:

1.Start
2.Declare variables for exercise, junk food, yoga, sleep, and a variable to mark healthy status
3.Set the healthy status to 1
4.Ask the user to enter exercise sessions per week and read the input
5.Ask the user to enter junk food intake per week and read the input
6.Ask the user to enter yoga sessions per week and read the input

7.Ask the user to enter sleep hours per night and read the input
8.If exercise is less than 3, mark healthy as 0 and display an improvement message
9.If junk food intake is more than 2, mark healthy as 0 and display an improvement message
10.If yoga sessions are less than 2, mark healthy as 0 and display an improvement message
11.If sleep hours are less than 7, mark healthy as 0 and display an improvement message
12.If healthy is still 1, display that the user is maintaining a healthy lifestyle
13.Stop

Build:

```c
#include <stdio.h>

int main() {

  int exercise, junk_food, yoga, sleep;

    int healthy = 1;      // assume healthy

  printf("How many exercise sessions per week? ");

    scanf("%d", &exercise);

    printf("How many times you eat junk food per week? ");

    scanf("%d", &junk_food);

  printf("How many yoga sessions per week? ");

    scanf("%d", &yoga);

  printf("How many hours do you sleep per night? ");

    scanf("%d", &sleep);

    printf("\n----- Health Report -----\n");

    if (exercise < 3) {

       healthy = 0;

       printf("• Try to exercise at least 3 times a week.\n");

    }
```

```c
if (junk_food > 2) {

    healthy = 0;

    printf("• Reduce junk food to not more than 2 times a week.\n");

}



if (yoga < 2) {

    healthy = 0;

    printf("• Practice yoga at least 2 times a week.\n");

}



if (sleep < 7) {

    healthy = 0;

    printf("• You should sleep at least 7 hours daily.\n");

}



if (healthy == 1) {

printf("Great! You are maintaining a healthy lifestyle. Keep it up!\n");

}
```

```
    return 0;

}
```

Testings :

Output

```
How many exercise sessions per week? 1
How many times you eat junk food per week? 3
How many yoga sessions per week? 5
How many hours do you sleep per night? 8

----- Health Report -----
• Try to exercise at least 3 times a week.
• Reduce junk food to not more than 2 times a week.


=== Code Execution Successful ===
```

implimentation: