C++

Q1) **Creating Variables With Data Types**

More than 1 variable created and used in your project. Declare a variable and show use of any data type

```
int ledPin = 13;
float temperature = 28.5;
```

In our code, we created variables like `ledPin` (integer) and `temperature` (float). These variables store the LED pin number and a temperature value, showing the use of different data types in C++

Q2) Create A Conditional Statement

Implement one conditional statement using if statements. Must have basic syntax and working code

```
if (temperature > 30.0) {
  turnLedOn();
} else {
  turnLedOff();
}
```

The `if` statement checks whether the temperature is greater than a set value. Based on this condition, the Arduino decides whether to turn the LED on or off.

Q3) Creating and Calling Functions Implementation of one working function that has been invoked

```
void turnLedOn() {
  digitalWrite(ledPin, HIGH);
}
```

We created functions to turn the LED on and off. These functions are called inside the `loop()` function, demonstrating how functions are defined and used in an Arduino program.

Q4) Adding comments to Your Code At least one example of a single line or multi line comment in your code. The comment must explain what is being done

```
// This program demonstrates variables, conditionals, functions, and comments
int ledPin = 13;        // Integer variable to store LED pin number
float temperature = 28.5;  // Float variable to store temperature value
```

- The first line is a **single line comment** that explains the overall purpose of the program.

- The next two lines have **inline comments** next to variables to describe what each variable does.