A circuit board

Description automatically generatedCircuit Diagram

Theory

Concept Used: The push button has been used as goal posts, and of all three only one is functional. The concept of push button and led blinking is used to show the goal post being hit in the game of football. The pin connected to the push button and the arduino board and the breadboard to connect the circuit. The resistors are connected to the push button and negative power pin to stop the reverse flow of current.

Learning and Observations:

1. Connecting the wires and push button to the uno board to complete the circuit
2. Use of resistor in the push button and why it is needed and the consequence if the resistor is not connected
3. The use of the pin on the board and the benefit of using the 13th pin and the ground pin beside the one.

Problem and Troubleshooting:

1. The connection of the resistor, it was initially difficulty to connect then took reference from the resource present on the BEEE website.
2. The connection of the led in 13th pin, it was not required but to make the subject more effective, decided to add the led
3. During writing the code the state of the pin was to be set zero and will change accordingly as the button is pressed.
4. The loop section of the code, the debouncing effect caused the points to increase more than once, when pressed once, to solve this increased the delay to 50 milliseconds.

Precautions:

1. Care should be taken while connecting the led to the terminal
2. The pushbutton should be connected to the pin along with the resistor, to prevent the return current.

Learning Outcomes:

1. Using the pushbuttons to create a game.
2. Loops to check for the state and use the button click to add score.
3. To control the state of the button to make a custom user control system.