

# SIMULATION OF ELECTRICAL SWITCH

**Problem statement:** Design a C program to simulate the operation of an electrical switch where the program takes input values, either 0 or 1 representing off or on. Using a suitable conditional statement, the program should interpret input values and display corresponding conditions as on or off. Additionally, the program should be able to handle invalid inputs and provide appropriate error messages.

**Research:** Used Microsoft Bing to search for a fully automatic water level controller.

**Analyse:** Now the task is how to integrate the c program in such a way that it will cut

the water supply off once the tank is filled till the desired volume of water is filled.

We can write a simple if / then condition in the C program to achieve our goal. Turn the water pump on once the water level is below 50. Turn the water pump off once the water level is above 50.

### **Ideate:**

A simple interface containing the following boxes to fill.

1. Dimensions of container/ tank.
2. Desired maximum volume of water.
3. Desired minimum volume of water.
4. A manual on/ off switch.

### **Build:**

```
#include <stdio.h>
```

```
int main() {
```

```
int water_level;  
printf("Input upper water  
level.(0-100)");  
scanf("%d",& water_level);  
if(water_level<50){  
    printf("Turn ON the water pump.");  
}  
else{  
    printf("Turn OFF the water pump.");  
}  
  
return 0;  
}
```

### **Testing:**

**Case 1:** Water level below 50:

Input upper water level.(0-100)20

Turn ON the water pump.

**Case 2:** Water level 50:

Input upper water level.(0-100)

50

Turn OFF the water pump.

**Case 3:** Water level more than 50:

Input upper water level.(0-100)70

Turn OFF the water pump.

**Implement:**

Uploaded project on GitHub.