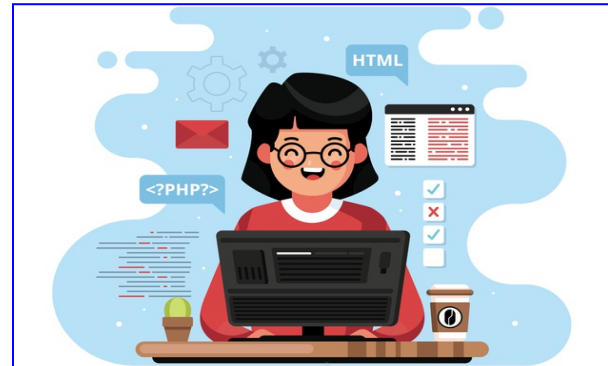


Electronic Voting Machine-2



What is our GOAL for this CLASS?

In this class, we learned how to design an electronic voting Machine on an OLED display. Also, we learnt how the result is calculated and displayed the results on the OLED display.

What did we ACHIEVE in the class TODAY?

- We learned Algorithm of EVM
- We learned how to calculate and display result

Which CONCEPTS/ CODING BLOCKS did we cover today?

1. We learned about the algorithm of the EVM machine, and then we displayed results at last after writing the calculation algorithm.
2. Logic of the Electronic Voting Machine
 - When we press a button, it will increment the vote count of a particular party
 - In **ezButton.h** library, the method **digitalRead()** is there which will be used to read the state of a button.

How did we DO the activities?

1. Firstly, initiate a new variable named **voting_completed**.

```
int voting_completed = 0;
```

Use this variable to store the state of voting completion. If it's value is 0, the voting procedure is still going on.

2. Users should be able to vote only when the initial texts have been displayed i.e. after **flag** is 1 and when the **voting_completed** variable is 0.

```
if (voting_completed == 0 && flag==1) {  
  
}
```

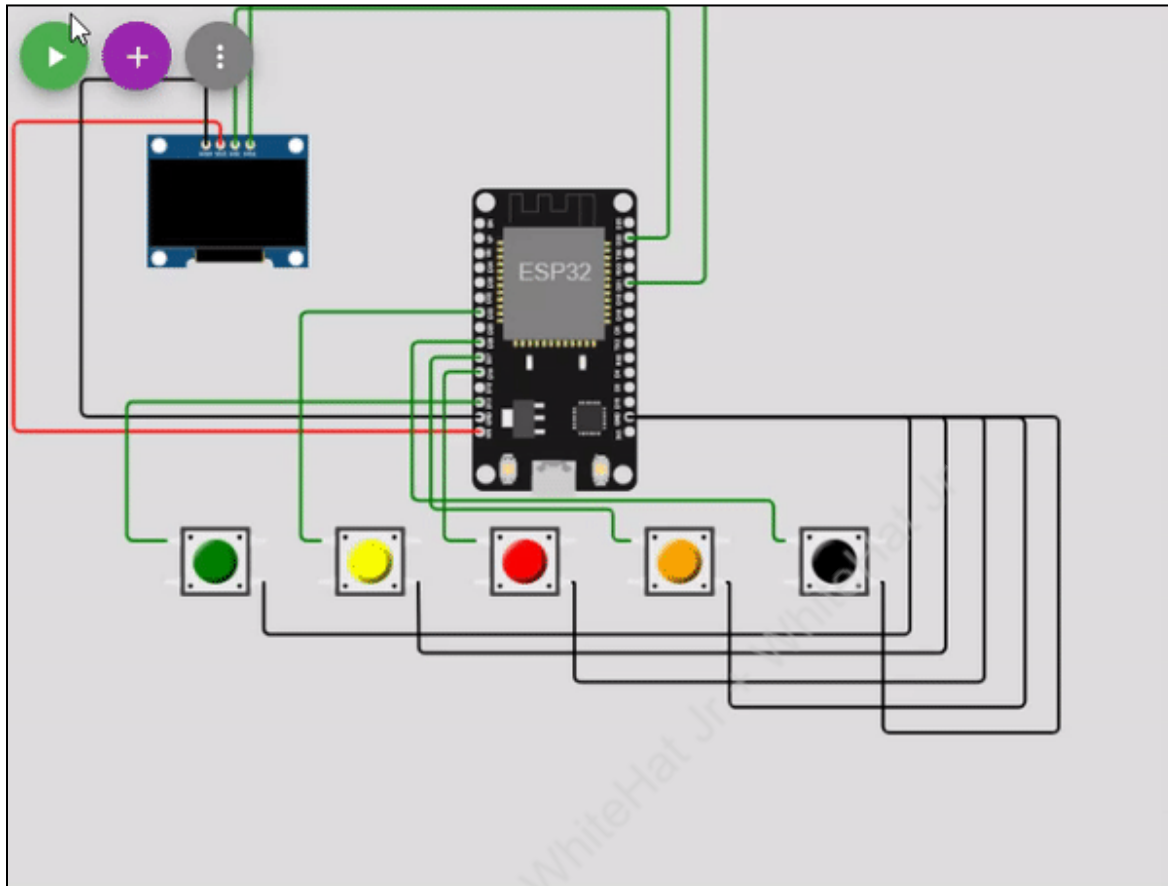
3. In the **loop()** method, write code to check if the button1 is pressed or not. To do this, use the **isPressed()** method. The **isPressed()** method returns true only when the button is pressed.
If the **button1** is pressed, increase the **vote1** variable by 1 and print the value of **vote1** on the **serial monitor**.

```
if (voting_completed == 0 && flag==1) {  
  if (button1.isPressed()) {  
    vote1++;  
    Serial.println(vote1);  
  }  
}
```

4. Reference code:

```
72   oled.setCursor(2, 32);      // set position to display  
73   oled.println("C - Red");    // display on OLED  
74   oled.setCursor(2, 48);     // set position to display  
75   oled.println("D - Orange");  
76   oled.display();  
77   flag=1;  
78 }  
79  
80   if (voting_completed == 0 && flag==1) {  
81     if (button1.isPressed()) {  
82       vote1++;  
83       Serial.println(vote1);  
84     }  
85   }  
86  
87   delay(10);  
88 }
```

Reference Output:



[Click here](#) to view the reference video.

5. Now, when **button2** is pressed, **vote2** will increase,
when **button3** is pressed, **vote3** will increase,
when **button4** is pressed, **vote4** will increase.
Finally, when **button5** is pressed, the voting will be completed and we will increase **voting_completed** value to 1.

```

if (voting_completed == 0 && flag==1) {
  if (button1.isPressed()) {
    vote1++;
  }
  else if (button2.isPressed()) {
    vote2++;
  }
  else if (button3.isPressed()) {
    vote3++;
  }
  else if (button4.isPressed()) {
    vote4++;
  }
  else if (button5.isPressed()) {
    voting_completed = 1;
  }
}

```

6. To show the number of votes for each team, define a new method named **show_votes()** and call it when **button5** is pressed.

```

else if (button4.isPressed()) {
  vote4++;
}
else if (button5.isPressed()) {
  voting_completed = 1;
  show_votes();
}
}
delay(10);
}

void show_votes() {
}

```

7. In the the **show_votes()** method, display each team's name and their corresponding number of votes.

```
void show_votes() {  
    oled.clearDisplay();  
    oled.setTextSize(2);  
    oled.setTextColor(WHITE);  
  
    oled.setCursor(2, 0);  
    oled.print("A - ");  
    oled.setCursor(50, 0);  
    oled.print(vote1);  
  
    oled.setCursor(2, 16);  
    oled.println("B - ");  
    oled.setCursor(50, 16);  
    oled.print(vote2);  
  
    oled.setCursor(2, 32);  
    oled.println("C - ");  
    oled.setCursor(50, 32);  
    oled.print(vote3);  
  
    oled.setCursor(2, 48);  
    oled.println("D - ");  
    oled.setCursor(50, 48);  
    oled.print(vote4);  
    oled.display();  
}
```

8. Now, define the **determine_winner()** method which will determine the winner and display it on the **OLED display**.

- Set the textSize, textColor and setCursor first.

```
oled.clearDisplay();  
oled.setTextSize(3);  
oled.setTextColor(WHITE);  
oled.setCursor(1, 10);
```

- For each team, check if this team's number of votes is greater than the other 3 teams. To write this, define an if-else ladder.

```
if (vote1 > vote2 && vote1 > vote3 && vote1 > vote4)
|   oled.print("A won!");
else if (vote2 > vote1 && vote2 > vote3 && vote2 > vote4)
|   oled.print("B won!");
else if (vote3 > vote1 && vote3 > vote2 && vote3 > vote4)
|   oled.print("C won!");
else if (vote4 > vote1 && vote4 > vote2 && vote4 > vote3)
|   oled.print("D won!");
```

- If none of these conditions are true, that means some of these teams have the same number of votes. We can print "tie" in this case.

```
else
|   oled.print("Tie!");
```

Reference Code:

```
void determine_winner() {
|   oled.clearDisplay();
|   oled.setTextSize(3);
|   oled.setTextColor(WHITE);
|   oled.setCursor(1, 10);

|   if ((vote1 > vote2 && vote1 > vote3 && vote1 > vote4))
|       oled.print("A won!");
|   else if (vote2 > vote1 && vote2 > vote3 && vote2 > vote4)
|       oled.print("B won!");
|   else if (vote3 > vote1 && vote3 > vote2 && vote3 > vote4)
|       oled.print("C won!");
|   else if (vote4 > vote1 && vote4 > vote2 && vote4 > vote3)
|       oled.print("D won!");
|   else
|       oled.print("Tie!");

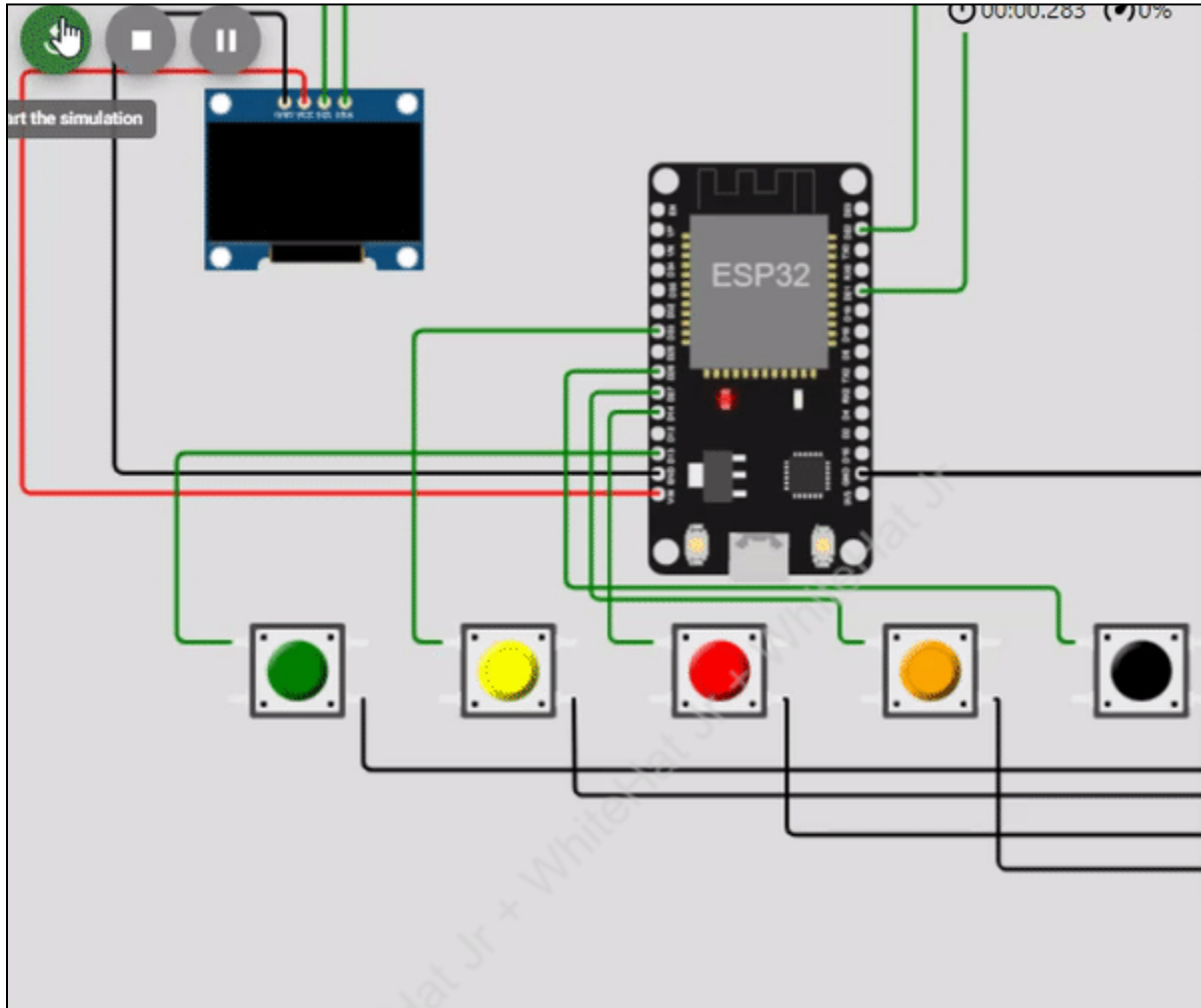
|   oled.display();
|   delay(1000);
}
```

Reference Output:

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What's NEXT?

In the **next class**, we will learn about **keypads**.

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Expand Your Knowledge

To know more about **different categories of OLED** [click here](#).