

VIT-SMART BRIDGE IoT EXTERNSHIP PROGRAM

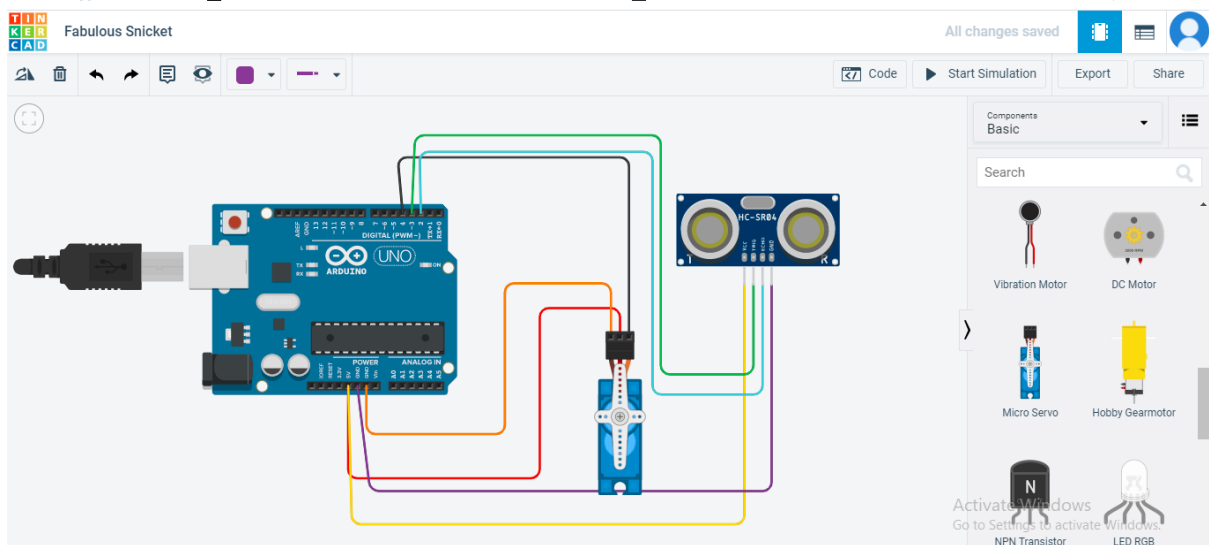
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Assignment-2:

Develop an "Automatic garage door opening system". Use an Ultrasonic sensor to detect if there is a vehicle in front of the garage. if any vehicle is detected open the garage door (rotate the servo motor) for some time and close it.

Circuit Diagram:(tinker card.com)



Code:

```
// C++ code
```

```
//
```

```
#include<Servo.h>
```

```
Servo s;
```

```
void setup()
{
  pinMode(3, OUTPUT);
  pinMode(2, INPUT);
  Serial.begin(9600);
  s.attach(4); //attaching D3 pin to servo motor
}

void loop()
{
  digitalWrite(3, LOW);
  digitalWrite(3, HIGH);
  delayMicroseconds(10);
  digitalWrite(3, LOW);
  float dur = pulseIn(2, HIGH);
  float dis = (dur / 2)/29.1;
  if(dis < 100){
    s.write(180);
    Serial.println("vehicle detected in less than 100 CM,opening the door");
    Serial.println(dis);
    delay(1000);
  }
  else if(dis > 100){
    s.write(0);
    Serial.println("Vehicle not detected");
    Serial.println(dis);
    delay(1000);
  }
}
```

```
}  
  
}
```

```
1 // C++ code  
2 //  
3 #include<Servo.h>  
4 Servo s;  
5 void setup()  
6 {  
7   pinMode(3, OUTPUT);  
8   pinMode(2, INPUT);  
9   Serial.begin(9600);  
10  s.attach(4); //attaching D3 pin to servo motor  
11 }  
12 void loop()  
13 {  
14   digitalWrite(3, LOW);  
15   digitalWrite(3, HIGH);  
16   delayMicroseconds(10);  
17   digitalWrite(3, LOW);  
18   float dur = pulseIn(2, HIGH);  
19   float dis = (dur / 2)/29.1;  
20   Serial.println(dis);  
21 }
```

Output:

```
Serial Monitor  
Vehicle not detected  
113.28  
Vehicle not detected  
113.28  
Vehicle not detected  
113.28  
Vehicle not detected  
111.87  
Vehicle not detected  
113.09  
Vehicle not detected  
111.87  
Vehicle not detected  
113.28  
Vehicle not detected  
112.58  
Vehicle not detected  
113.28  
Vehicle not detected  
113.28  
Vehicle not detected  
112.58  
Vehicle not detected  
113.25  
Vehicle not detected  
111.87  
Vehicle not detected  
111.87
```

Activate Windows
Go to Settings to activate Windows.