-----dc motor---

```
int LeftMotorForward = 7; // Pin 7 has Left Motor connected on Arduino boards.

int LeftMotorReverse = 6; // Pin 6 has Left Motor connected on Arduino boards.

void setup()

{

  Serial.begin(9600);

  pinMode(LeftMotorForward, OUTPUT);

  pinMode(LeftMotorReverse, OUTPUT);

}


void loop() {

  // Forward

  digitalWrite(LeftMotorForward, HIGH);

  digitalWrite(LeftMotorReverse, LOW);

  delay(2000);


  // Reverse

  digitalWrite(LeftMotorReverse, HIGH);

  digitalWrite(LeftMotorForward, LOW);

  delay(2000);


  // Stop

  digitalWrite(LeftMotorReverse, LOW);

  digitalWrite(LeftMotorForward, LOW);

  delay(2000);

}


----------lcd display-----

#include <LiquidCrystal.h>

LiquidCrystal LCD(13,12,11,10,9, 8);


void setup() {

  // set up the LCD's number of columns and rows:
```

```
  LCD.begin(16, 2);
  // Print a message to the LCD.
  LCD.print("hello, world!");
}


void loop() {
  // Turn off the display:
  LCD.noDisplay();
  delay(500);
  // Turn on the display:
  LCD.display();
  delay(500);
}


-------bluetooth led-----


#define ledPin 13
int state = 0;
void setup() {
  pinMode(ledPin, OUTPUT);
  digitalWrite(ledPin, LOW);
  Serial.begin(9600); // Default communication rate of the Bluetooth module
}
void loop() {
  if(Serial.available() > 0){ // Checks whether data is comming from the serial port
    state = Serial.read(); // Reads the data from the serial port
  }
  if (state == '0') {
   digitalWrite(ledPin, LOW); // Turn LED OFF
   Serial.println("LED: OFF"); // Send back, to the phone, the String "LED: ON"
   state = 0;
  }
  else if (state == '1') {
   digitalWrite(ledPin, HIGH);
```

```arduino
    Serial.println("LED: ON");;

   state = 0;

 }

}



--------buzzer-------



const int buzzer = 9; //buzzer to arduino pin 9



void setup(){

  pinMode(buzzer, OUTPUT); // Set buzzer - pin 9 as an output

}



void loop(){

  tone(buzzer,1000); // Send 1KHz sound signal...

  delay(100);       // ...for 1 sec

  noTone(buzzer);    // Stop sound...

  delay(1000);       // ...for 1sec

}




--------keypad addition----

#include <Keypad.h>



const byte ROWS = 4; // Four rows

const byte COLS = 4; // Three columns

// Define the Keymap

char keys[ROWS][COLS] = {

 {'1', '2', '3', '/'},

 {'4', '5', '6', '*'},

 {'7', '8', '9', '-'},

 {'C', '0', '=', '+'}

};

// Connect keypad ROW0, ROW1, ROW2 and ROW3 to these Arduino pins.
```

```
byte rowPins[ROWS] = { 4, 5, 6, 7 };
// Connect keypad COL0, COL1 and COL2 to these Arduino pins.
byte colPins[COLS] = { 8, 9, 10, 11};


// Create the Keypad
Keypad kpd = Keypad( makeKeymap(keys), rowPins, colPins, ROWS, COLS );


boolean presentValue = false;
boolean final = false;
String num1;
String num2;
int answer;
char op;


void setup()
{
  Serial.begin(9600);
}


void loop() {
  char key = kpd.getKey();


  if (key == '1' || key == '2' || key == '3' || key == '4' || key == '5' || key == '6' || key == '7' || key == '8' || key == '9' || key ==
'0')
  {
    if (presentValue == false)
    {
      num1 = num1 + key;
      Serial.print(key);
    }
    else
    {
      num2 = num2 + key;
      Serial.print(key);
```

```
      final = true;
    }
  }

  else if (presentValue == false  && (key =='+'))
  {

      presentValue = true;
      op = key;
      Serial.print(op);

  }

  else if (final == true && key == '=') {

    answer = num1.toInt() + num2.toInt();

    Serial.println();
    Serial.println(answer);
    presentValue = false;
    final = false;
    num1 = "";
    num2 = "";
    answer = 0;
    op = ' ';
  }
  else if (key == 'C') {
    //Serial.clear();
    presentValue = false;
    final = false;
    num1 = "";
    num2 = "";
    answer = 0;
    op = ' ';
```

```
  }
}


------keypad print---
#include <Keypad.h>


const byte ROWS = 4; // Four rows
const byte COLS = 4; // Three columns
// Define the Keymap
char keys[ROWS][COLS] = {
 {'1','2','3','A'},
 {'4','5','6','B'},
 {'7','8','9','C'},
 {'*','0','#','D'}
};
// Connect keypad ROW0, ROW1, ROW2 and ROW3 to these Arduino pins.
byte rowPins[ROWS] = { 2,3,4,5 };
// Connect keypad COL0, COL1 and COL2 to these Arduino pins.
byte colPins[COLS] = { 6,7,8,9};


// Create the Keypad
Keypad kpd = Keypad( makeKeymap(keys), rowPins, colPins, ROWS, COLS );


void setup()
{
  Serial.begin(9600);
}


void loop()
{
  char key = kpd.getKey();
  if(key)  // Check for a valid key.
  {
      Serial.println(key);
```

```
  }
}



----ldr---

int ldr=A4;

int value = 0;

void setup() {

Serial.begin(9600);

}

void loop() {

  value= analogRead(ldr);

  Serial.println("Intensity of the LDR is =");

  Serial.println(value);

  delay(1000);

}
-------servo---



#include <Servo.h>


Servo myservo;  // create servo object to control a servo

// twelve servo objects can be created on most boards


int pos = 0;   // variable to store the servo position


void setup() {

  myservo.attach(9);  // attaches the servo on pin 9 to the servo object

}


void loop() {

  for (pos = 0; pos <= 360; pos=pos+1) { // goes from 0 degrees to 360 degrees

    // in steps of 1 degree

    myservo.write(pos);          // tell servo to go to position in variable 'pos'
```

```arduino
    delay(20);                 // waits 20ms for the servo to reach the position
 }
 for (pos = 360; pos >= 0; pos=pos-1) { // goes from 360 degrees to 0 degrees
   myservo.write(pos);          // tell servo to go to position in variable 'pos'
   delay(20);                 // waits 20ms for the servo to reach the position
 }
}


-------------ultrasonic-------

/* Ping))) Sensor

  The circuit:
          * +V connection of the PING))) attached to +5V

          * GND connection of the PING))) attached to ground

          * SIG connection of the PING)) attached to digital pin 7


 */



const int pingPin = 8;


void setup() {


 Serial.begin(9600);
}


void loop() {


 long duration, distance;


 //send trigger
 pinMode(pingPin, OUTPUT);
 digitalWrite(pingPin, LOW);
```

```
  delayMicroseconds(2);

  digitalWrite(pingPin, HIGH);

  delayMicroseconds(5);

  digitalWrite(pingPin, LOW);


  //receive echo

  pinMode(pingPin, INPUT);

  duration = pulseIn(pingPin, HIGH);


  // convert the time into a distance

  distance= (duration*0.034)/2;


  Serial.print("cm");

  Serial.print(distance);


  Serial.println();

  delay(1000);

}
```