PRATICAL NO :- 3

```
#include <Servo.h>
Servo myservo;
int pos = 0;

void setup()
{
myservo.attach(4);
}
void loop()
{
for(pos = 0; pos <= 180; pos += 1)
{
myservo.write(pos);
delay(15);
}
for(pos = 180; pos>=0; pos-=1)
{
myservo.write(pos);
delay(15);
}
}
```

PRATICAL NO :-4

```
#include <Servo.h>
Servo sm1, sm2, sm3;
int pos = 0;
void setup()
{
sm1.attach(10);
sm2.attach(11);
sm3.attach(12);
}
void loop()
{
for (pos = 0; pos <= 180; pos += 1)
{
sm1.write(pos);
sm2.write(pos);
sm3.write(pos);
delay(15);
}
for (pos = 180; pos >= 0; pos -= 1)
{
sm1.write(pos);
sm2.write(pos);
sm3.write(pos);
delay(15);
}
}
```

PRATICAL NO :-5

```
void setup()
{
  pinMode(0,OUTPUT);
  pinMode(1,OUTPUT);
  pinMode(2,OUTPUT);
  pinMode(3,OUTPUT);
  pinMode(4,OUTPUT);
  pinMode(5,OUTPUT);
  pinMode(6,OUTPUT);
}

void loop()
{
  digitalWrite(0,LOW);
  digitalWrite(1,HIGH);
  digitalWrite(2,HIGH);
  digitalWrite(3,LOW);
  digitalWrite(4,LOW);
  digitalWrite(5,LOW);
  digitalWrite(6,LOW);
  delay(500);

  //2

   digitalWrite(0,HIGH);
  digitalWrite(1,HIGH);
  digitalWrite(2,HIGH);
  digitalWrite(3,LOW);
  digitalWrite(4,HIGH);
  digitalWrite(5,LOW);
  digitalWrite(6,HIGH);
  delay(500);
   //3
 digitalWrite(0,HIGH);
  digitalWrite(1,HIGH);
  digitalWrite(2,HIGH);
  digitalWrite(3,HIGH);
  digitalWrite(4,LOW);
  digitalWrite(5,LOW);
  digitalWrite(6,HIGH);
  delay(500);
}
```

PRATICAL NO :- 6

```
#include <LiquidCrystal.h>
int THERMISTORPIN = 0,  BCOEFFICIENT = 3380 ;
float THERMISTORNOMINAL = 10000 , TEMPERATURENOMINAL = 25 , SERIESRESISTOR =
10000    ;
LiquidCrystal lcd(12, 11, 5, 4, 3, 2);
int sample[5];

void setup()
{
 Serial.begin(9600);
 lcd.begin(16, 2);
}

void loop()
{
  int i;
  float average;
  for(i=0;i<5;i++)
  {
  sample[i] = analogRead(THERMISTORPIN);
  delay(10);
  }
  average =0;
  for(i=0;i<5;i++)
  {
  average += sample[i];
  }
  average /= 5;
  average = 1023 / average - 1;
  average = SERIESRESISTOR / average;

  float steinhart;
  steinhart = average / THERMISTORNOMINAL;
  steinhart = log(steinhart);
  steinhart /= BCOEFFICIENT;
  steinhart += 1.0 / (TEMPERATURENOMINAL + 273.15);
  steinhart = 1.0 / steinhart;
  steinhart -= 273.15;

  lcd.print("Temp  = ");
  lcd.print((int)steinhart);
  lcd.print(" C");
  delay(500);
  lcd.clear();
  }
```

PRATICAL NO :-8

```
void setup()
 {
  Serial.begin(9600);
  pinMode(7, OUTPUT);
  pinMode(6, INPUT);
 }
void loop()
{
  digitalWrite(7, LOW);
  delayMicroseconds(2);

  digitalWrite(7, HIGH);
  delayMicroseconds(10);
  digitalWrite(7, LOW);

  long Duration = pulseIn(6, HIGH);
  int Distance = Duration * 0.034 / 2;
  Serial.print("Distance: ");
  Serial.print(Distance);
  Serial.println(" cm");
}
```

After paste the hex file of Arduino . go to ultrasonic sensor and also open the hex file and click ok.

Note :- IN ultrasonic pratical (pratical 8) and infrared pratical (pratical 7) add the hex file to both Arduino and (ultrasonic sensor) (infrared sensor)