



Lecture (01)

Project 01

IR applications 01

By:

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IR Communication using Arduino UNO

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- IR communication makes use of IR (Infrared) waves from the electromagnetic spectrum.
 - An IR LED is used to transmit data wirelessly in digital form (0 – LED OFF or 1 – LED ON).
 - An IR photodiode or IR phototransistor receives this data. The IR receiver (IR photodiode or IR phototransistor) gives different current values according to the intensity of light.
 - the Photodiode is used in the reverse biased mode (It is designed to operate in the reverse biased mode).
 - The data from transmitter side is modulated at 38 kHz before transmission.


```
#define BTN1 2
#define BTN2 3
#define BTN3 4
#define cr_pin 9
void setup()
{
  pinMode(BTN1,INPUT);
  pinMode(BTN2,INPUT);
  pinMode(BTN3,INPUT);
  Serial.begin(1200);
  tone(cr_pin, 38000) ;
}
void loop()
{
  if (digitalRead(BTN1)==LOW)
  {
    Serial.println('a');
  }
  else if (digitalRead(BTN2)==LOW)
  {
    Serial.println('b');
  }
}
```

```
else if (digitalRead(BTN3)==LOW)
{
  Serial.println('c');
}
else
;
}
```

```
#define LED1 2
#define LED2 3
#define LED3 4

void setup()
{
  pinMode(LED1,OUTPUT);
  pinMode(LED2,OUTPUT);
  pinMode(LED3,OUTPUT);
  Serial.begin(1200);
;
}
void loop()
{
  if (Serial.available() > 0)
  {

    int inByte = Serial.read();
    switch(inByte)
    {
      case 'a':
        digitalWrite(LED1,HIGH);
        break;
```

```
      case 'b':
        digitalWrite(LED2,HIGH);
        break;
      case 'c':
        digitalWrite(LED3,HIGH);
        break;
      default:
        digitalWrite(LED1,LOW);
        digitalWrite(LED2,LOW);
        digitalWrite(LED3,LOW);
        break;
    }
  }
}
else
{
}
}
```


A scenic landscape at sunrise or sunset. A large, dark tree trunk is on the right side of the frame. The sun is a bright, glowing orb in the sky, partially obscured by the tree's branches. The background shows a misty or hazy field with distant trees. The overall color palette is warm, with oranges, yellows, and soft greens.

Thanks,..
See you next week (ISA),...