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| **Course Name:** | **Sensors in Augmented and Virtual Reality** | **Semester:** | **IV** |
| **Date of Performance:** |  | **Batch No:** | **B** |
| **Faculty Name:** | **Megha Sharma** | **Roll No:** | **16010121110** |
| **Faculty Sign & Date:** |  | **Grade/Marks:** |  |

**Experiment No: 3**

**Title: Interfacing of IR with Arduino**

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| **Aim and Objective of the Experiment:** |
| **To learn how to interface LDR sensor with Arduino** |

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| **COs to be achieved:** |
| **CO1: Study basic sensors used in Augmented reality systems**  **CO2: Gain basic knowledge sensors in Virtual reality headsets** |

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| **Theory:** |
| An IR sensor or infrared sensor is a type of electronic device that emits light in order to detect certain aspects of its surroundings.  The sensor module is ambient light-adaptable, with a pair of infrared emitting and receiving tubes. At a specific frequency, the transmitting tubes emit infrared. When the direction of an obstacle is detected (reflective surface), the receiving tube receives the infrared reflected. After a comparator circuit processing, the green light turns on. And the signal output interfaces a digital signal (a low-level signal). The sensor’s effective distance range is 2 ~ 30cm. The sensor’s detection range can be adjusted by adjusting the potentiometer. |

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| **Stepwise-Procedure:** |
| Picture 1  /\*\*\* www.arduinopoint.com \*\*\*/  /\*\*\* Arduino with IR Sensor \*\*\*/  int SensorPin = 2;  int OutputPin = 13;  void setup() {  pinMode(OutputPin, OUTPUT);  pinMode(SensorPin, INPUT);  Serial.begin(9600);  }  void loop() {  int SensorValue = digitalRead(SensorPin);    Serial.print("SensorPin Value: ");  Serial.println(SensorValue);  delay(1000);  if (SensorValue==LOW){ // LOW MEANS Object Detected  digitalWrite(OutputPin, HIGH);  }  else  {  digitalWrite(OutputPin, LOW);  }  }  You should see your **LED turn ON, when a object comes in the range of the IR Sensor**. If you cannot see the desired output, ensure the circuit has been properly assembled, and verified and uploaded the code to your board. |

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| **Output Screen shots:** |
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| **Results:** |
| The value of LDR is shown in the output. |

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| **Post Lab Subjective/Objective type Questions:** |
| 1. Explain working of LDR   LDRs are tiny light-sensing devices also known as photoresistors. An LDR is a resistor whose resistance changes as the amount of light falling on it changes. The resistance of the LDR decreases with an increase in light intensity. This property allows us to use them for making light sensing circuits. |

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| **Conclusion:** |
| Thus we have implemented the working of LDR sensor using Arduino. We measured the LDR value using the sensor and Arduino in physical world. This sensor can be used to measure distance at small distances |

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| **Signature of faculty in-charge with Date:** |