**ABSTRACT**

**SKILL LAB PROJECT**

**TOPIC: TO CREATE A BIDIRECTIONAL PEOPLE COUNTER USING IR SENSOR AND ARDUINO UNO.**

In this paper, we propose system based on impulse radio ultra-wideband (IR-UWB) radar sensors for counting multiple people passing through a passage or a wide door or in sense the design and construction of this project is based on a pair of Infrared sensors that detects interrupt when it detects an obstacle. The proposed counting system utilizes two IR-UWB radar sensors which have narrow beam width to form two invisible electronic layers in the path. The two electronic layers are used for sensing and direction recognition of multiple people passing by. The pair of IR sensors can detect the visitor from both directions, that is the number of entering visitors and the number of exiting visitors. It can also be used at gates of parking areas and other public places. The device counts the total number of people entering through the gate and also the total number of people leaving through the same gate. And finally, it counts the total number of people currently present inside the room. Algorithmically, sensing and direction recognition of a person passing through a path are performed considering both information of a received signal in each radar and mutual information between two radar signals. The proposed counting system is implemented with two radar modules designed using commercial radar ICs and a Arduino UNO module.

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