

## FABRICATION OF AUTOMATIC OBJECT COUNTING MACHINE

### INTRODUCTION:

Today in the era of mass production the production is massive. But a need also arises i.e. to Count the products made. This can be done by either recruiting a person to count it or by using Technology . This article will illustrate a simple home-made counter to count the number of Products manufactured in a conveyor belt. To accomplish this, the project is using a 8051 Microcontroller , a sensor to sense the object , 7-segment display to show the counted products.

### WORKING PRINCIPLE:

The circuit has IR sensor which detects whether there is a object or not in front of it. The microcontroller will take the input from the sensor, processes it and sends the output to the 7-segment display unit which will display the number of products counted.

The IR detecting device, it detects the IR rays transmitted at 38kHz frequency (it is transmitting frequency not the frequency of the IR rays). Its output is not affected by the surrounding lights; therefore it will sense the object only. To transmit IR rays at 38 kHz the astable multivibrator mode of 555 IC is used. The output of the sensor is processed by the microcontroller. After processing it the controller's output signal is fed to the 7-segment which displays the output.

### APPLICATIONS:

- Automatic count of people entering/leaving is used in many places – shops, shopping malls to account customer numbers, airports, museums, reading rooms etc.
- In access control systems such counters are used to avoid use of turnstile in some occasions - if someone enters without presenting authorized access pass then alarm is sounded for security personnel and takes a picture of the person passing.

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