

Arduino Industrial level Product counting system objects counting

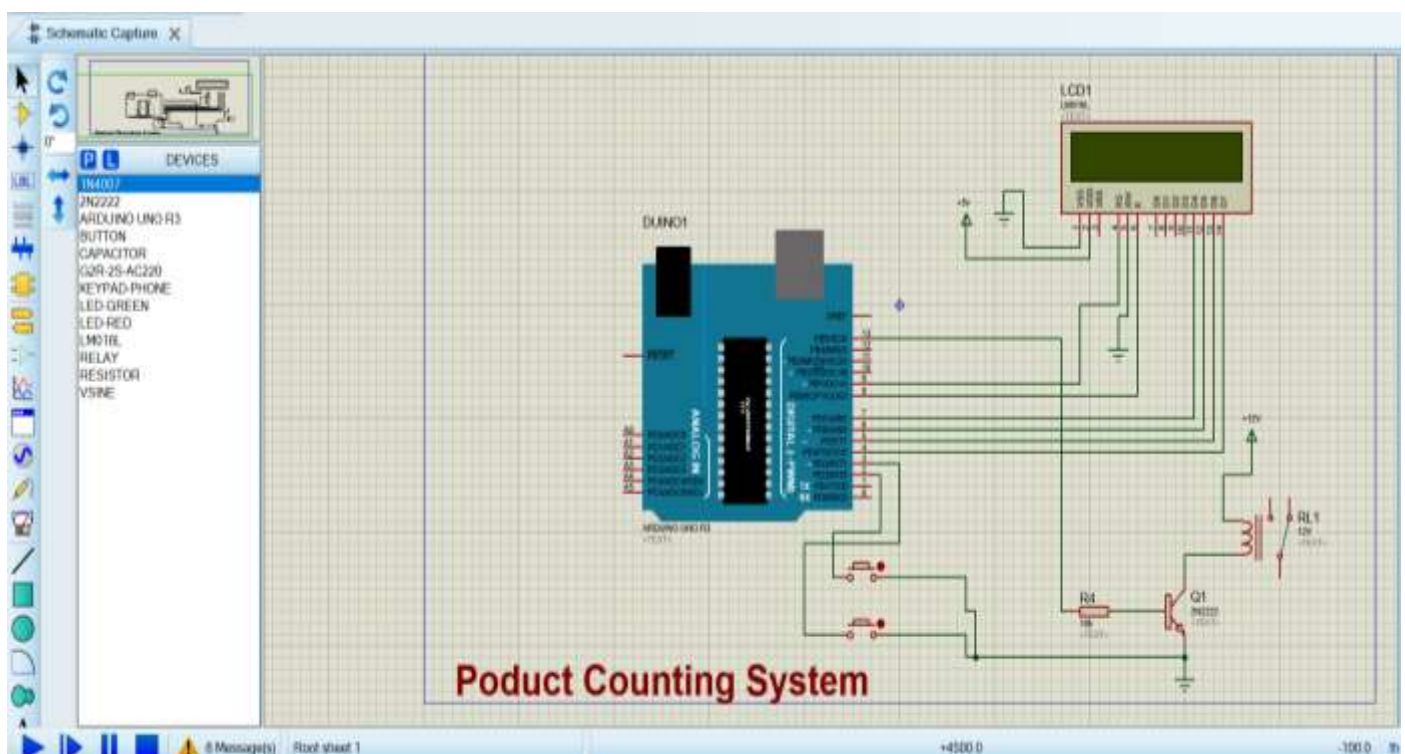
INTRODUCTION:

This project is based on Industrial level product counting system using Arduino, 16x2 LCD and an IR infrared sensor. This Project will also work with Arduino Mega. Object counters or Product counters are most commonly used in industries throughout the world, this project can be used to count different types of objects and products.

Working Of Project:

Its working is based on counting number of objects or products passing through a conveyer belt in industry. It has been used in many industries now a days, many countries have already adopted this system in their industries.

Suppose if such a device is installed in ball making industry then it will count how many balls are there in a particular package to deliver in further markets while packing, and if number of balls exceed the defined limits then relay will trip and a buzzer can be connected to make the workers sound that any extra ball beyond the limits is inside the packet. In this way, human work will be less and no manual counting is required.



Connection Of Components:

- 16x2 LCD pin number 1 is connected with the ground.
- Pin number 2 is connected with the 5volts.
- Pin number 3 which is the contrast pin of the LCD should be connected with a variable resistor, then the variable resistor can be used to control the lcd's contrast. As this is just a simulation so that's why there is no need to add a variable resistor.
- The rs pin of the LCD is connected with pin number 9 of the Arduino.
- Pin number 5 of the LCD is connected with the ground.
- The enable pin of the LCD is connected with pin number 8 of the Arduino.
- Pins 4, 5,6 and 7 of the Arduino are connected with the data pins D4 to D7 of the LCD.

16x2 LCD has basically 16 pins but as you can see pin number 15 and pin number 16 are not shown. During the real hardware connections, you need to connect pin number 15 with 5 volts and pin number 16 with the ground.

These two push buttons which are connected with pin number 2 and pin number 3 represents the infrared sensors. So this push button will be used for counting the balls, while this push button will be used to reset this relay.

A 12v relay will be used in this project; if you want you can also use a 5v relay. The type of the 12v relay I am using is SPDT. This type of the relay has 5 pins, two coil pins, common pin, normally open and normally closed pin. The 2n2222 NPN transistor emitter leg is connected with the ground while the collector is connected with the relay coil. While the other side of the relay coil is connected with the 12v as it's a 12-volt relay...

A 10k resistor is connected with the base of the 2n2222 transistor. This transistor is controlled using pin number 13 of the Arduino. The purpose of this relay is to trigger the other circuits, it can be used to turn on a buzzer when the box is filled, or this relay can be used to trigger the pneumatic cylinder to push the box.