

# **Water Production Line**

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# 1

## What is the Water Production Line ?

It's a machine that automatically fills bottles with water and cap them.



# 2

## Challenges

We faced many challenges implementing this project :

1) Accurise water pump so that the electric parts won't be damaged from water reaching them.

2) Accurise the bottle to take a cap from cap holder -Slider- while rotating on the star wheel .

3) The star wheel couldn't catch the bottle correctly and hold it even after .

# 3

## Solutions

- 1) We accurised the performance of the water pump and the water filling process alone , then added it to the whole project.
- 2) We put the cap slider with a precise angle to match the bottle rotation within the star wheel.
- 3) We used an iron wire as a rail fence to prevent the fall of the bottles while they are at the capping process.

# How does it work ?

# 4



Keypad: press "#" to start the project



Conveyor Belt: the bottle moves on it



Pipline: to fill the bottle



Star Wheel: to carry the bottle during capping process



Cap holder: to hold the Caps



Motor Mount: to cap the bottle

# 5



Stepper Motor: to rotate the star wheel using a chain



Two IR sensors: the 1st to detect the bottle to start filling and the other one to detect bottle for capping



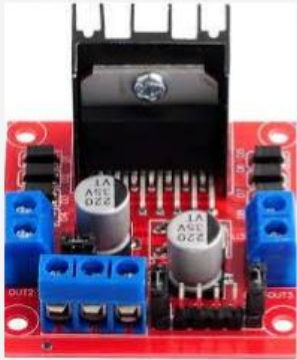
DC Motor: to rotate motor mount for capping



Two DC Motors: to rotate the two conveyor belts

## Tools & Mechanism

# 5



Two L298 N (H Bridge): to reverse the polarity/direction of the motor



Two Relay Modules: to switch electrical devices or systems on and off



LCD & I2C: to print the process of the project



12volt dc water pump: to fill the bottle

## Tools & Mechanism

# 5

# Tools

The main tool to control the systems implemented



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Thanks for listening  
Any Questions ?

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