



**BORG AL ARAB TECHNOLOGICAL UNIVERSITY**

**Department : Information of Technology**

# Smart Vending Machine

Smart Electric Soda (SES)

# Introduction

A smart vending machine is an automated device capable of intelligently providing a variety of products, offering customers a convenient and innovative purchasing experience through multiple payment options and 24/7 self-operation





# Tools



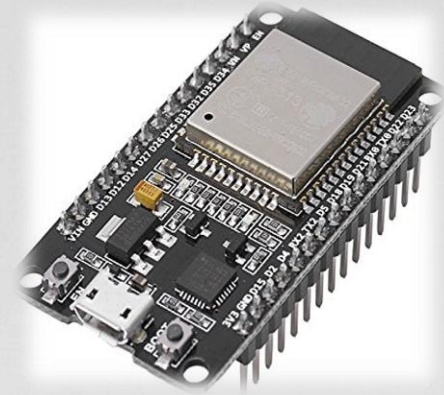
1

# ESP32 Development Board

ESP 32

All programming is done on this board.

The ESP32 is a versatile microcontroller with integrated Wi-Fi and Bluetooth, ideal for IoT projects. Its high performance and low power consumption make it perfect for smart devices and wireless communication applications.



## 2 DC Motor with Gear Box

### DC Motor

It is responsible for moving the zipper pulley to release the container upon request.

A DC motor is an electric motor that converts direct current (DC) electrical energy into mechanical energy. It is widely used in various applications, including robotics, electric vehicles, and industrial machinery, due to its simplicity, efficiency, and precise control.



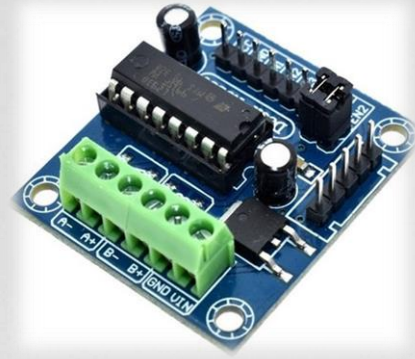
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## L293D 2 Channel DC Motor Driver Module

### DC Motor Driver

Control the movement of the motors that release the requested products.

A DC motor driver is used to control the speed and direction of a DC motor. It acts as an interface between the microcontroller and the motor, allowing for efficient and precise motor control by managing the power supplied to the motor based on the input signals from the microcontroller.



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## Adapter - Female DC Power Socket Jack Prewired - Female to Female - Male to Female - Male to Male

**Adapter - Female DC - FF - MF - MM**

**All of them are for connecting electricity.**

1. Female DC: Connects to a power source, providing an easy connection point for DC power.
2. Female to Female Adapter: Joins two male connectors.
3. Male to Female Adapter: Connects a male connector to a female connector.
4. Male to Male Adapter: Joins two female connectors.





The background is a light gray with abstract geometric shapes in the corners. Top-left: a blue-to-purple gradient semi-circle with a small white circle. Top-right: a dark blue semi-circle, a purple-to-blue gradient circle, and a large orange-to-yellow gradient shape with a white circle. Bottom-left: a blue-to-purple gradient semi-circle and a large pink-to-magenta gradient circle. Bottom-right: an orange-to-yellow gradient semi-circle.

**Thanks!**