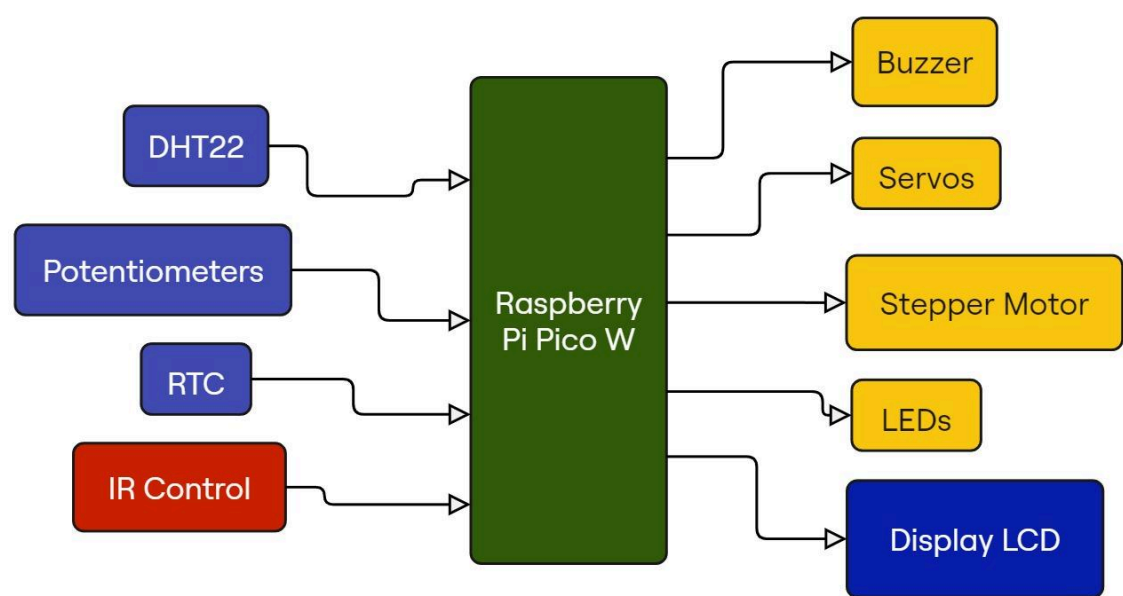


Hardware Specifications

Block Diagram



Hardware Components

Component	Description
Raspberry Pi Pico	Microcontroller
DHT22 sensor	Measures temperature and humidity
Stepper Motor	Controls the coffee grinder
Servo Motors	Operate coffee dispensing mechanisms

Buzzer	Provides sound notifications
I2C LCD Display	Displays system information
IR Remote Control	Allows user interaction
RTC Module	Enables scheduling of coffee preparation
LED Indicators	Show the machine status
LED Bar	Shows coffee strength
Linear Potentiometers	Adjust coffee strength, temperature and water quantity

Pin Configuration

Component	Pin(s)	Function
DHT22 sensor	GPIO 8	Temperature and humidity readings
Stepper Motor	GPIO 2,3	Controls grinder rotation
Servo Motors	GPIO 10, 11	Dispensing mechanism control
Buzzer	GPIO 14	Sound Alerts
I2C LCD Display	SDA (4), SCL (5)	I2C Communication
IR Receiver	GPIO 1	Reads remote control input
RTC Module	SDA (4), SCL (5)	I2C real-time clock
LED Indicators	GPIO 7, 12, 13	Status indication
LED Bar	GPIO 6, 9, 15, 22, 21, 20, 19, 18, 17, 16	Strength indication
Linear Potentiometers	ADC 26, 27, 28	Strength, temperature, and water level adjustment

Circuit Schematic

