1. What is a Prototype?

A prototype is an early sample, model, or release of a product built to test a concept or process. It is used to evaluate a new design to enhance precision by system analysts and users.

Open Source and Closed Source Prototype Platforms

Open Source Prototype Platforms: These platforms provide the source code and design files freely, allowing users to modify, distribute, and improve the software and hardware. Examples include Arduino and Raspberry Pi.

Closed Source Prototype Platforms: These platforms do not provide access to their source code or design files. Users can use the platform but cannot modify or share the underlying code or design. Examples include proprietary hardware and software development kits from certain manufacturers.

2. What is Arduino?

Arduino is an open-source electronics platform based on easy-to-use hardware and software. It consists of a programmable circuit board (microcontroller) and a software IDE (Integrated Development Environment) that runs on a computer, used to write and upload computer code to the physical board.

3. Arduino Uno R3 Key Specifications

Main Processor: ATmega328P

Memory:

SRAM: 2 KB

FLASH MEMORY: 32 KB (0.5 KB used by the bootloader)

EEPROM: 1 KB

I/O Pins:

Digital I/O Pins: 14 (6 provide PWM output)

Analog Input Pins: 6