NAME – ISHAN DATE – 1/08/2024

ROLL NO. – FET-BAML-2022-26-012

SUBJECT – IOT AND AUTOMATION

**ASSINGMENT**

**1.What is a Prototype? What are Open source and closed source prototype platforms?**

A **prototype** is a preliminary model, sample, or version of a product or system used to test a concept or process. It's a tangible representation of an idea, allowing for evaluation, feedback, and refinement before full-scale development. Prototypes can be physical, digital, or a combination of both.

Open Source and Closed Source Prototype Platforms:-

* **Open Source Prototype Platforms:** These platforms provide the underlying code and design freely accessible to the public. Users can modify, distribute, and build upon the platform. Examples include Arduino, Raspberry Pi, and open source CAD software like Free CAD.
* **Closed Source Prototype Platforms:** These platforms keep the source code proprietary, restricting access and modification. Users typically pay for licenses to use the platform. Examples include many commercial 3D printing software, electronic design automation (EDA) tools, and rapid prototyping machines.

**2.What is Arduino?**

Arduino is an open-source electronics platform based on easy-to-use hardware and software. It's designed for artists, designers, hobbyists, and anyone interested in creating interactive objects or environments. Arduino boards are microcontroller-based, meaning they have a small computer on board that can be programmed to control various electronic components.

**3. Write down Arduino Uno R3 Key Specifications:  
 Main Processor  
 Memory (SRAM, FLASH MEMORY, EEPROM)  
 I/O PinsMain Processor**

Main Processor

* ATmega328P

Memory

* SRAM: 2 KB
* FLASH MEMORY: 32 KB
* EEPROM: 1 KB

I/O Pins

* Digital I/O pins: 14 (of which 6 can be used as PWM outputs)
* Analog input pins: 6

I/O Pins

* Digital I/O pins: 14 (of which 6 can be used as PWM outputs)
* Analog input pins: 6