**Hardware Requirements**

**Arduino IDE**

Arduino IDE comprises a text editor for code writing/debugging, a message area, a text editor console, a toolbar housing buttons for common actions, and various menus. It interfaces with Arduino hardware for program uploading and communication with the hardware. This compiler is the software that will be mainly used for hardware programming.

**Arduino UNO R3**

Arduino Uno R3 board is a microcontroller board that uses an ATmega328p chip. The board is equipped with sets of digital and analog input/output pins. It also has serial communications interfaces, including USB for loading programs. The microcontroller can read and run programs in C and C++ programming. Arduino was created by Massimo Banzi and David Cuartielles (Institute Ivrea in Ivrea, Italy, 2005). It is the main component used for the hardware system to manage and process the computation needed for the system.

**Servo Motor**

The servo motor operates as an electromechanical device capable of precise control over angular or linear position, velocity, and acceleration. Employing a closed-loop control system, it receives commands from an external source and adjusts its shaft position accordingly. This versatile component finds application in various fields, including robotics, automation, and hobbyist projects. In this project, the servo motor is utilized to regulate the gates responsible for segregating coins.

**IR Sensor**

The IR sensor functions as a sensing device capable of detecting infrared radiation emitted by objects within its detection range. Operating on the principle of emitting and receiving infrared light, it interprets variations in reflected or emitted radiation to determine the presence or absence of objects. Widely employed in automation, security systems, and proximity sensing applications, the IR sensor offers reliable detection capabilities across diverse environments. In our project, we integrate the IR sensor to detect coins and identify them.

**Power Supply**

A power supply is an electrical device that supplies electric power to an electrical load. The main purpose of a power supply is to convert electric current from a source to the correct voltage, current, and frequency to power the load. As a result, power supplies are sometimes referred to as electric power converters. The main function of a power supply is to convert electric current from a source to the correct voltage, current, and frequency to power the load.

**Raspberry pi**

Raspberry Pi is the name of a series of single-board computers made by the [Raspberry Pi Foundation](https://www.raspberrypi.org/about/), a UK charity that aims to educate people in computing and create easier access to computing education. The Raspberry Pi launched in 2012, and there have been several iterations and variations released since then. The original Pi had a single-core 700MHz CPU and just 256MB RAM, and the latest model has a quad-core CPU clocking in at over 1.5GHz, and 4GB RAM. The price point for Raspberry Pi has always been under $100 (usually around $35 USD), most notably the Pi Zero, which costs just $5.

**Coin Feeder**

A coin feeder comprises a drum-shaped rotating body capable of feeding not only a single size of coins but also different sizes of coins within an allowable range. A coin receiving part and a coin pressing projection pressing a coin against the coin receiving par are provided at the inner surface of the peripheral wall of the drum-shaped rotating body capable of rotating vertically with a number of coins. A coin pressing projection is operated according to the rotation of the dram-shaped rotating body so as to press-hold the coin against the inner surface of the peripheral wall and release the pressing of the coin at the upper position.

**Software Requirements**

**Visual Studio Code**

Visual Studio Code also known as VS Code is an open-source application for compiling code, debugging, application versioning, and embedded Git. It is developed by Microsoft for Windows, Linux, and macOS environments. VS Code is one of the development tools for the web system that features monitoring and report generation.

**XAMPP**

Xampp is an open-source with a web server solution stack and cross-platform package. Developed by Apache Friends and initially released on September 4, 2002. It mainly consists of an Apache HTTP server, Maria DB database, and interpreters for scripts written in PHP and Perl Programming Language. It is used as the database of the system.

**MySQL Workbench**

MySQL Workbench is a database with GUI that has visual tools. It integrates with SQL development, administration, and database design. Developed by Oracle Corporation, that is written in C++, C, and Python programming languages. It is one of the tools used to design the database of the system.

**Bootstrap**

Bootstrap, as cited by Gaikwad and Adkar (2019), stands as a widely embraced framework utilized for crafting responsive and mobile-friendly websites. Leveraging HTML, CSS, and JavaScript, Bootstrap aids in enhancing website responsiveness and structural organization. In our project, we opted for Bootstrap to ensure optimal responsiveness and a well-structured layout for the website.

**Live Server**

This browser extension serves as an add-on to the Live Server developer tool within the VS Code editor, as noted by Dey (2022). Upon installation of this add-on alongside the VS Code extension, it facilitates automatic website updates, extending its functionality beyond .htm and .html files. This feature streamlines the development process by enabling seamless monitoring of tasks, making it a preferred tool for enhanced efficiency.