STEP 1 SETTING UP THE RASBERRY PI

STEP 1: Installing the Raspberry Pi

1. Put together the Raspberry Pi:

- Gather all of the necessary components:
- A Raspberry Pi board (for example, the Raspberry Pi 4 Model B).
- MicroSD card (at least 8GB suggested) and an SD card adapter (if necessary).
- Micro USB power supply
- HDMI cord
- USB mouse and keyboard
- HDMI-equipped monitor
- Connect the Raspberry Pi to the monitor by inserting one end of the HDMI cable into the Raspberry Pi board's HDMI port.
- Connect the other end of the HDMI cable to the monitor's

- Put in the microSD card:
- On the Raspberry Pi board, locate the microSD card port.

- Insert the microSD card carefully into the slot until
  it clicks into place.

**2. On the Raspberry Pi, install the operating system (e.g.,
Raspberry Pi OS):**

- Get the Raspbian (called Raspberry Pi OS) operating system image: Download the latest version of Raspberry
  Pi OS (including desktop and recommended software) from the official Raspberry Pi website (https://www.raspberrypi.org/downloads/).

- Copy the Raspbian image to a microSD card:

- Plug the microSD card into a computer equipped with an SD card reader.

- Write the Raspbian image to the microSD card using the Etcher program (https://www.balena.io/etcher/).

- Choose the Raspbian image file that you downloaded and the destination microSD card.

- To begin writing the image on the card, click "Flash!" Wait for the process to finish.

- Safely remove the microSD card: Once the writing procedure is complete, remove the microSD card from the computer.

3. Register the Raspberry Pi with the internet:

- Wired connection (Ethernet): If you have an Ethernet cable, connect one end to the Raspberry Pi board's Ethernet port and the other end to your router or network switch.

- Wi-Fi connection: On the Raspberry Pi desktop, click on the network icon in the upper-right corner.

- Choose your Wi-Fi network from the list and, if prompted, enter the password.

4. Initial Configuration:

- Turn on the Raspberry Pi: Connect the power supply's Micro USB end to the Raspberry Pi's power connector.

- To turn on the Raspberry Pi, plug the opposite end of the power supply into a power socket.

- Wait for the Raspberry Pi to start: - On the connected monitor, you should see the Raspberry Pi desktop environment.

- Raspberry Pi Configuration Wizard: When you boot into Raspberry Pi OS for the first time, a configuration wizard will appear.

- Set the timezone, expand the filesystem, change the password, enable Wi-Fi (if not already enabled), and configure any other options as needed.

5: Update and Upgrade

- Open a terminal window: To open a terminal window, click the Terminal icon at the bottom of the taskbar.

- Update the package lists:Inside the terminal, type the following command and press Enter:

```sql
sudo apt update
```

- Upgrade the packages installed: Type in the following command and press Enter, once the update is complete.

```
sudo apt upgrade
```

6: Python Configuration

- Examine the Python version:
 - To see if Python is installed, type the following command
into the terminal and press Enter:

```
css
python3 --version
```

 - If Python is not already installed:

- Python is normally pre-installed on Raspberry Pi OS. If it isn't available, you can install it with the following command:

```
sudo apt install python3
```

7: Installing Python Packages:

Install the required Python packages:

Install the essential Python packages for the project in the terminal by running the following commands:

```
pip3 install requests
pip3 install pygame
```