Purpose:

This document provides the steps to initialize and configure our MacBooks for our Robotics team.
The goal is to have a consistent configuration for each laptop.
The process installs the Chrome browser, Python, the WPI library, several third-party libraries, and the GIT Desktop.

References:

Robotpy Documentation: https://robotpy.readthedocs.io/en/stable/getting_started.html

Dependencies:

If you installing multiple MacBooks, it would be helpful to have a flashdrive with the large software packages to speedup installation. This procedure uses a flashdrive with an archive that contains a small folder structure plus the National Instruments Game-Tools ISO image, the WPI Library Installer, the VSCode archive (zip) and GIT Desktop.

Overview:

1. Initialize the MacBook, setting up the user and removing unnecessary applications from the Docker bar
2. Create the Robotics team specific file structure and copy large software packages
3. Install Apple Developer tools, the NI Game-tools and VSCode/WPI library
4. Install Robotpy and third-party libraries
5. Test the operation with a robot simulation project

Procedure:

1. Initialize the MacBook by selecting the Unites States, enabling WIFI access, enabling location services, and the initial user account. Skip items not needed such as the migration assistant, Apple Id, Siri, screentime, Touch ID…

2. Set up robotic account with the name "**robot**" and the password "**password**".
   Set the password hint to "p a s s w o r d".

3. Copy the **_robotics.zip** archive from the flashdrive to the **Documents** folder.

4. Remove most favorites from dock. Leave Finder, Launchpad, Settings, downloads. Right click on each icon, select options and "**Remove from dock**".

5. Unzip the _robotics.zip. (Right click and select open). This will create the following directory structure:

```
Documents/
          _Robotics/
                2023/
                      [Software projects]
                development_software/
                      [Software Installation Packages]
```

Install Apple Developer tools, the NI Game-tools and VSCode/WPI library

6. Open a "terminal" window. To open a terminal window, select the **Launchpad** icon and enter "**term**" in the search box. Select the **terminal** icon. Leave the terminal window open for the rest of the installation.

7. Install the Apple "Developer Tools". In the "terminal" window and run the command "**`xcode-select --install`**". Note the two dashes, This package can take about 20 minutes to install.

8. Install chrome browser from the installation package under "**Documents/_Robotics/development_software**". Drag the Chrome icon into the Application Folder.

9. Install **python** from the installation package under "**Documents/_Robotics/development_software**"

10. Install the WPILIbrary using the installer package (WPILib_macOS-Intel-2023.4.3.dmg).

    Select lower right box, ("Select existing VSCode zip for offline install on this computer") and browse to the VSCode package under the **Documents/_Robotics/development_software**" folder.

    Be sure to drag the VSCode icon to the Docking Bar

11. Start VSCode

12. Add the Python Extension by selecting the top menu option **View** => **Extensions**. Type in "**Python**" and select **Install**.

Install Robotpy and third-party libraries

13. Install robotpy using the command within the terminal window:

    ```
    python3 -m pip install robotpy
    ```

14. Install third-party robotpy extensions using the following commands:

    ```
    python3 -m pip install robotpy[ctre,navx,commands2]
    ```

    If the above command does not work try the following:

    ```
    python3 -m pip install robotpy-ctre
    python3 -m pip install robotpy-navx
    python3 -m pip install robotpy-commands-v2
    ```

Test the operation with a robot simulation project

15. Install **GITHUB Desktop** from the installation package under "**Documents/_Robotics/development_software**"

16. Download the project called "2023_python" from the Team 1895 GITHUB site and place it under the **Documents/_Robotics/2023" folder.**

    Web site: https://github.com/Lambda-Corps/2023_python

    [Expand this section on how to use GIT Desktop]

17. Verify operation of the development environment
    a. Open the "2023_python" project within VSCode
    b. Within the terminal window, change directory to the project "2023_python".
       cd Documents/_Robotics/2023/2023_python

       Reminder: MacOS is case-sensitive
    c. Run the simulation with the command: `python3 robot.py sim`

18. Delete the _Robotics.zip archive under the documents folder