**Poppy Humanoid Robot**

**I. Introduction**

Welcome to the documentation for the Poppy Humanoid Robot programming project! This project is a partnership between Estevan Techhub and Estevan Comprehensive High School, aimed at teaching students computer programming skills and robotics by building and programming a Poppy Humanoid Robot. The robot is a fascinating machine that can perform a variety of actions, from simple gestures to complex movements.

This documentation is designed to help you set up the necessary software and programming tools to work with the Poppy Humanoid Robot. It will provide step-by-step instructions on how to install the required software, including Python 3, the necessary Python modules, and the CopellaSim software for simulation. Additionally, it will provide a tutorial on how to program the robot to perform a simple action, using Python code and the poppy-humanoid module.

Whether you are a student, educator, or hobbyist, this project will introduce you to the exciting world of robotics and programming. By the end of this documentation, you will have the skills necessary to program the Poppy Humanoid Robot to perform a variety of actions, and the foundation to explore even more advanced robotics projects. So, let's get started!

**II. Official Documentation**

Before we begin, it's important to note that this documentation is intended to supplement the official documentation provided by the makers of the Poppy Humanoid Robot and CopellaSim software. These resources provide comprehensive information about the hardware and software requirements needed to build and program the robot, as well as detailed instructions on how to use the software. As such, we highly recommend that you refer to the official documentation as needed throughout the project. Below are links to the official documentation for the Poppy Humanoid Robot and CopellaSim software:

* **[**[**Poppy Robot Documentation**](https://docs.poppy-project.org/en/getting-started/)**]**
* **[[CopellaSim Documenation](https://www.coppeliarobotics.com/helpFiles/index.html)]**

In particular, we will be following the process outlined here:

* **[**[**Install the robotic simulator CoppeliaSim (formerly V-REP)**](https://docs.poppy-project.org/en/installation/install-vrep.html)**]**

**III. Software Setup**

1. Install Python3

* Visit the official Python website and download the latest version of Python3 for your operating system.
* Follow the installation instructions to complete the installation process.

1. Test Python3 Installation

* Open a terminal (or command prompt) and enter the command "python3 --version" to verify that Python3 is installed and accessible from the command line.

1. Install poppy-humanoid module

* Open a terminal (or command prompt) and enter the command "pip install poppy-humanoid" to install the poppy-humanoid module.
* Verify that the module is installed correctly by entering the Python3 interpreter by typing "python3" and then typing "import poppy\_humanoid" to check that there are no errors.

Note: If you're using a virtual environment for your project, it's recommended that you activate the environment before installing Python modules. This can be done by entering the command "source path/to/venv/bin/activate" on a Unix-based system, or "path\to\venv\Scripts\activate" on Windows.

* Provide step-by-step instructions on how to install Python 3 and the necessary Python modules (poppy-ergo-jr and pypot) for programming the Poppy Humanoid Robot
* Provide step-by-step instructions on how to download and install CopellaSim

**IV. Setting up VS Code**

* Explain the benefits of using an Integrated Development Environment (IDE) like Visual Studio Code (VS Code) for programming.
* Provide step-by-step instructions on how to install VS Code and the necessary extensions for programming in Python (Python Extension, Code Runner, and Live Server)

**V. Programming the Robot**

* Explain the importance of programming skills in robotics
* Provide an example of a simple action the robot can perform (such as waving its hand)
* Provide step-by-step instructions on how to program the robot to perform the simple action, using Python code and the poppy-ergo-jr module

**VI. Conclusion**

* Summarize the benefits of the project (building the Poppy Humanoid Robot and teaching programming skills)
* Encourage continued learning and exploration of robotics and programming

Note: Official documentation should be from reliable sources such as the Poppy Humanoid Robot and CopellaSim websites, or other reputable sources in the robotics community.

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