**Basic Python and Impedance Control Study Report**

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1. **Introduction**

In the project named *Impedance Control and compliance control with UR5 robot*, knowledge relating to impedance control and skills in python programming are required. Therefore, to better understand and develop the project, we first learn the basic python programming and impedance control concepts by establishing some simple model related in the first several weeks, under the help of the instructor Doc. Israel.

1. **Models**
2. **Double pendulum in Python**
3. **Simple pendulum and Simple spring system vibration analysis in Python**
4. **Impedance Control for a 2-Link Robot Arm**

The basic model is based on one of the projects from the open resources in MathWorks. The original project is a user interactive 2-link robot arm that applied impedance control and returns demand values. We went through the codes and references of the project and tried to separate the control frequency from the actual physics frequency.

1. Summary
2. Appendix
3. References