



**Department of Electronic &
Telecommunication Engineering**
University of Moratuwa
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Individual Contribution to the Zero Gravity Group Project

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Background Search Contribution

I conducted a preliminary exploration of available components, such as servo motors and motor drivers, and verified their availability through reliable component providers as advised by Professor Jayasinghe during our first meeting. This research helped in identifying suitable design models for our project, achieving the first learning outcome.

Documentation Contribution

I created detailed design documentation for the electronic parts, including the reasoning behind each selection. This thorough documentation process ensured that our design choices were well-founded and clearly communicated, fulfilling the fifth learning outcome.

PCB Contribution

I designed the schematic and PCB layout using Altium Designer, ensuring the design was testable and complied with industry standards. This task met the second learning outcome by producing a PCB that adhered to professional standards.

SolidWorks Contribution

I inspected and validated the enclosure using SolidWorks to ensure it fit perfectly with the selected components. This process ensured that the product enclosure met industry standards, fulfilling the fourth learning outcome.

Soldering Contribution

I soldered the SMD components, ensuring proper assembly and functionality. This hands-on work demonstrated my understanding of electronic manufacturing processes, meeting the third learning outcome.

Code Contribution

I inspected the code and tested it with the circuits to identify and resolve any bugs. This debugging process ensured the software worked seamlessly with the hardware, contributing to the creation of a working prototype and fulfilling the sixth learning outcome.

Summary

Through my contributions to component research, design documentation, schematic and PCB layout design, enclosure validation, soldering, and code inspection, I effectively supported the project's goals and achieved the key learning outcomes necessary for my development as an engineer.