Exercise Equipment for Office Workers

Overview
The team was assigned the task of designing leg exercise equipment for office workers to use under their desks. The goal of the equipment is to enable workers to sustain a long workout that is quiet enough to use in an office setting. This product should be unique to the market as leg exercise equipment already exists.

Objectives
The team’s objective was to design and build a prototype that was quiet, adjustable, portable, and easy to use for office workers and people with blood circulation issues in their lower extremities. The group effectively split up and balanced the work amongst group members for both written requirements and prototype construction requirements.

Approach
- Performed patent search and benchmarked similar products on market
- Sponsor visited and provided Solidworks files of ideal product
- Sponsor provided objectives and specifications
- Surveyed multiple customers to gather additional needs
- Created own Solidworks construction based on sponsor specifications
- Constructed multiple prototypes
- Tested prototypes to determine effectiveness
- Used test results to determine what components to change or continue using
- Came to conclusion of final prototype components and constructed final prototype
- Final prototype passed tests for durability and noise level

Outcomes
There were multiple outcomes from product design process:
- Equipment was quiet and durable enough to use in office setting
- First product of its kind to act as exercise equipment and leg rest
- First leg exercise equipment to use magnetic resistance
- Unique product with multiple adjustment points: height, resistance, and pedal position