MISSION STATEMENT
- Due to its slow response speed and increased safety risks for operators, the traditional crane has lost its dominance in operations, necessitating the design of a new mechanical device to replace it and address these issues.

OBJECTIVES
- Design, build, and showcase a machine that can handle a 200lb cylinder, maneuver it in 5 degrees of freedom while performing specific operations, all without the need for overhead lifting devices.

FOUNDATION & LIFT SUBSYSTEMS
- Using Creo for modeling test and operating test.
- Minimum Yield Margin of Safety (Msy) is 10.9
- Minimum Ultimate Margin of Safety (Msu) is 7.53

CLAW SUBSYSTEM
- Used Auto CAD and Creo for modeling and testing
- Minimum Yield Margin of Safety (Msy) is 2.14
- Minimum Ultimate Margin of Safety (Msu) is 1.07
- Utilizes a 4:1 Gear Ratio

SAFETY
- Use engineering design handbook calculations for safety compliance.
- Use ANSYS Workbench software to simulate and predict system safety by applying FEA and other computational methods to evaluate system behavior.

FUTUREWORK & SOCIAL EFFECT
- Could be more cost-effective and efficient than cranes, potentially reducing costs and increasing productivity.
- Improve safety in worksites, reduce costs, and increase productivity.
- Potentially create new job opportunities in the development, installation, and maintenance of the new system.

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