Overview
The purpose of the Baobab project is to create a machine that efficiently separates the Baobab powder from the seeds and fibers. Past iterations of the machine have lacked standard dimensions and had potential to reduce the amount of waste when processing the fruit. To address these issues, the team redesigned the heart and mesh cover assembly, the heart end plates, and created an additional cover over the chute where seeds and powder exit the machine. The deliverables include a working machine, a fully dimensioned set of CAD drawings, and a Bill of Materials as a reference for future teams.

Objectives
To redesign a previously built, inoperable machine with the goals of standardized dimensions, repeatable machining processes and reduced waste. Additionally, to create a set of CAD drawings and updated Bill of Materials.

Approach
- Research past projects and the Baobab fruit.
- Take machine certification classes in Learning Factory.
- Inspect and disassemble Fall 2016 inoperable machine.
- Determine cause of inaccurate hart shaft fit.
- Consult with professional welders to create cone assembly.
- Redesign three-piece cover assembly.
- Create design of new chute cover.
- Research and order necessary materials.
- Create CAD files with standardized dimensions.
- Machine redesigned parts.
- Assemble pulp processor.
- Test machined redesign.
- Troubleshoot and make adjustments.
- Create updated BOM.
- Prepare for showcase and create final report.

Outcomes
Due to the new design, the machine will cut down on waste and increase time between maintenance. The team utilized more repeatable manufacturing techniques and furthered the ultimate goal of having a completely standardized machine. CAD files are now available for future teams to reference and improve upon the machine's design. There is also now the added benefit that when a part needs to be replaced, there is an accurate drawing to reference and recreate the desired part.