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Souvenirs for the ABE Department

Client: Agricultural and Biosystems Engineering

Problem Statement

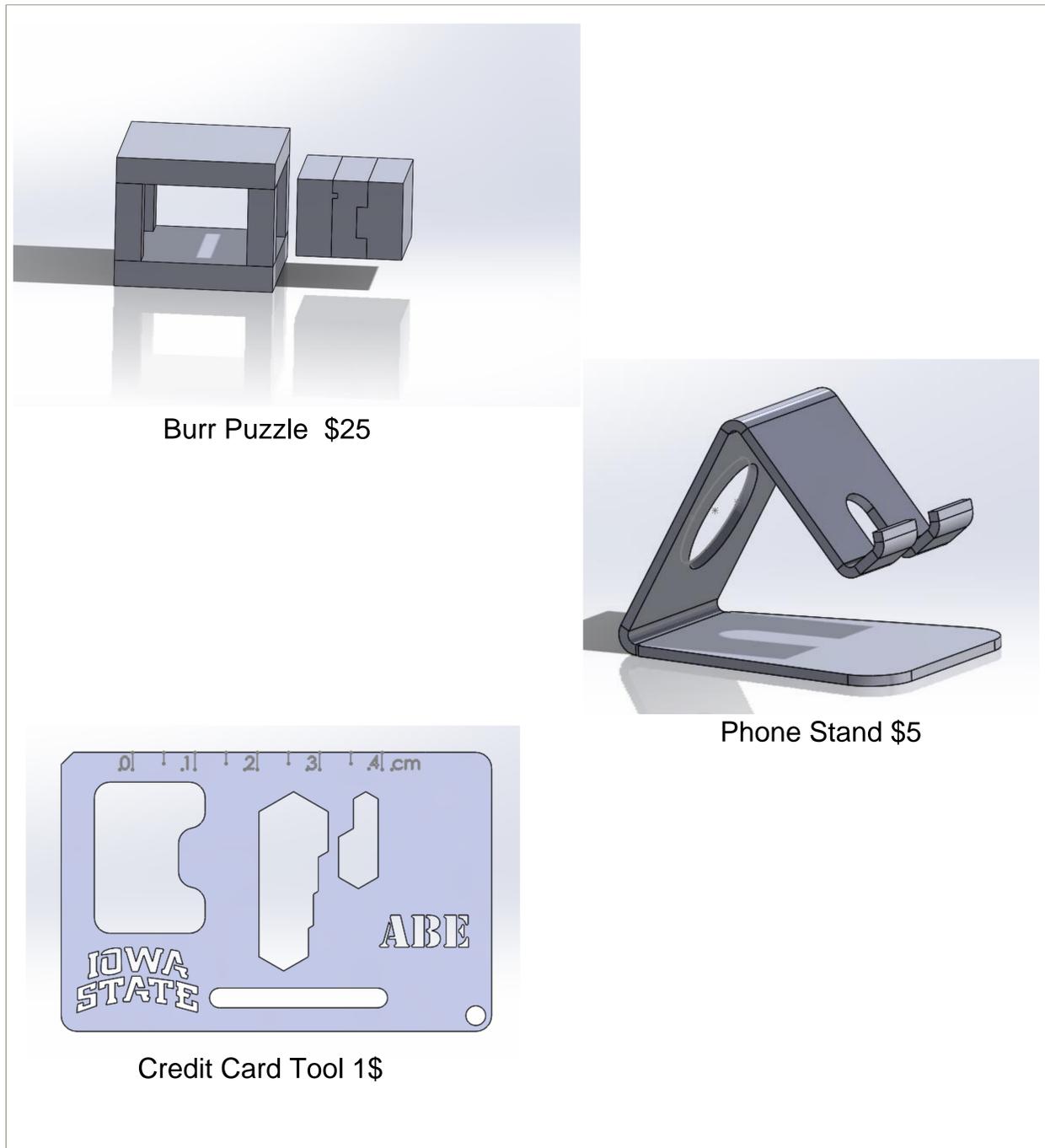
- The ABE department frequently hosts both international and domestic visitors. The challenge was to design ABE-specific brand souvenirs to give the visitors. The souvenirs should impress the visitors and be clear, attractive, useful, and memorable. These souvenirs are to include the skills of all members involved. The main stakeholders will need to help to determine the final designs for each of the souvenirs.

Objectives

- Design three separate souvenirs at three different price levels.
- The manufacturing cost levels included a \$1, a \$5, and a \$25 souvenir.
- These souvenirs must be functional and aesthetically pleasing.
- Create an SOP for each souvenir so the souvenirs can be made in the future and made by students in class.

Constraints

- The team's budget was \$450.
- Souvenirs were created and developed over the 2019-2020 semesters.
- Stainless steel was used for the credit card tool and the phone stand. Plastic filament was used for the Burr Puzzle.
- The souvenirs must be identifiable as coming from ABE
- Souvenirs must fit in standard carry-on luggage.
- Materials must stand up to daily use without degradation over time.
- Must be able to produce at least 25 units a year.



Scope

- Identifying designs that met stakeholder's preference.
- Creating an SOP to manufacture the souvenirs.
- Creating souvenir prototypes for testing and quality assurance.

Methods/Approach

- Brainstorming and drafting designs, making prototypes, surveying, and creating final designs and SOPs.
- Solidworks was used to design the souvenirs.
- The 3D printer was utilized to create the Burr puzzle
- The card tool was made on the waterjet.
- The waterjet, and press break were utilized to make the phone stand's flat pattern and bend it.

Major Deliverables

- We created three souvenirs at three different price points.
 - A Credit card tool for \$0.51 Per Unit.
 - A phone stand for \$2.67 Per Unit.
 - A burr puzzle for around \$8.00 Per Unit.
- SOP's to reproduce the souvenirs.

Recommendations

- The souvenirs could be used as a learning tool to help future students if incorporated into ABE classes. For example, the puzzle could be constructed in the TSM 241 plastics lab. And the stand and card tool could be created in a class that utilizes the water jet.

References

- We used data gathered from surveys sent to ABE Department faculty to create our designs for all souvenirs.
- ABE Faculty and staff played a large role in finalizing our designs as they completed these surveys.
- ABE Faculty also gave us great ideas and feedback on our prototypes.
- Final Report accessible via the ABE Department