Flying Spiders: A Reconfigurable Spider Drone For Education

| Name	Degree/Position	Year	Supervisor
Rakshanda Alam	WISEST Researcher	2019	Dr. Rafiq Ahmad

Motivation

- Alberta Learning Factory (part of LIMDA Lab) will use this equipment for teaching and training
- Lego parts provide a good reconfigurability which a modern system should have.
- Design and implement a mechanical system inspired from nature
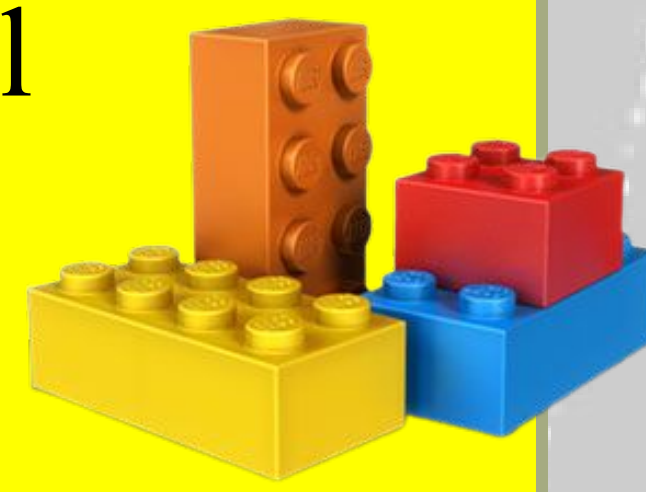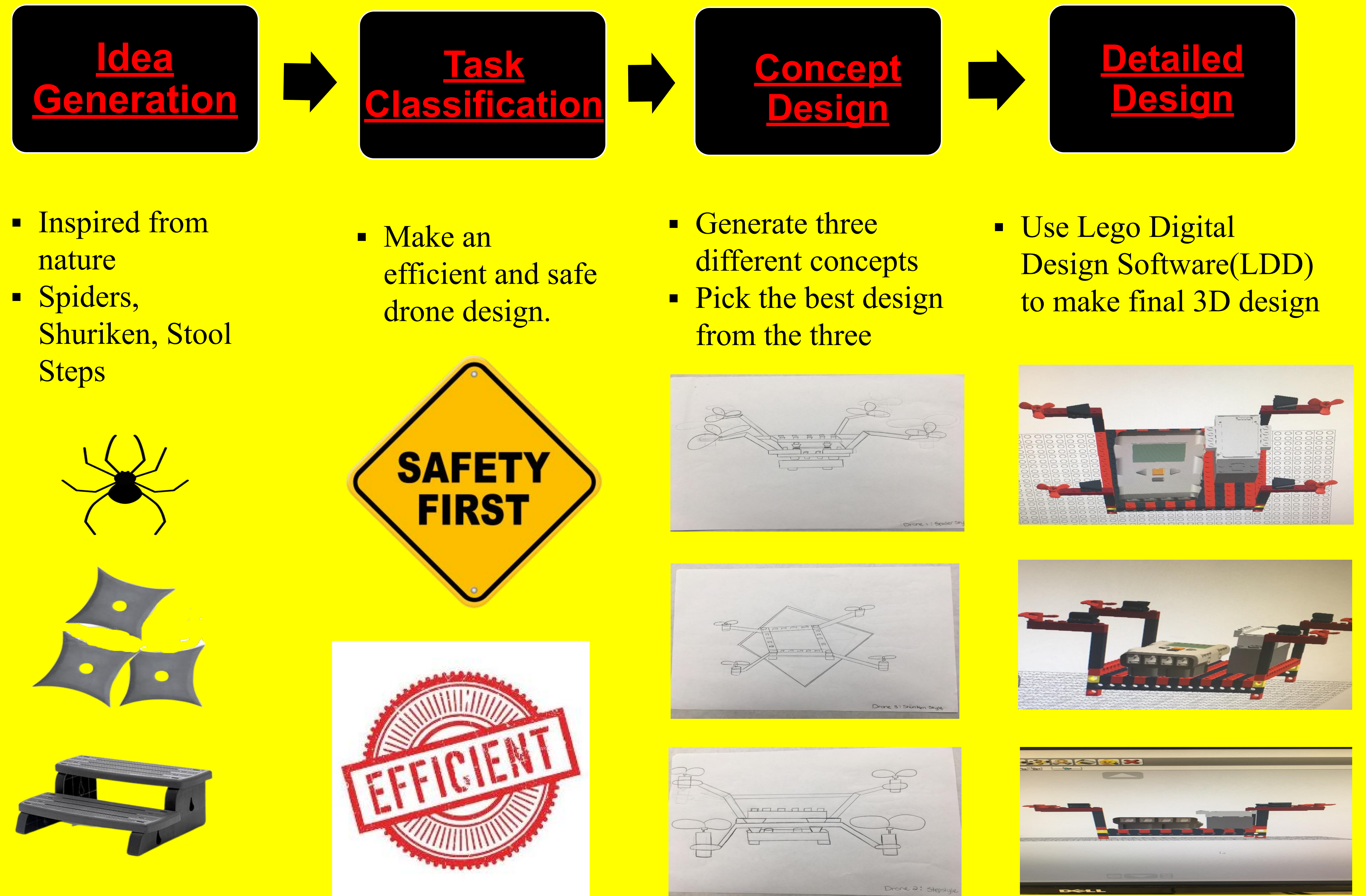
Objective

The main purpose for this project was to generate three different drone ideas and choose the most safe and efficient design using 3D digital design software.
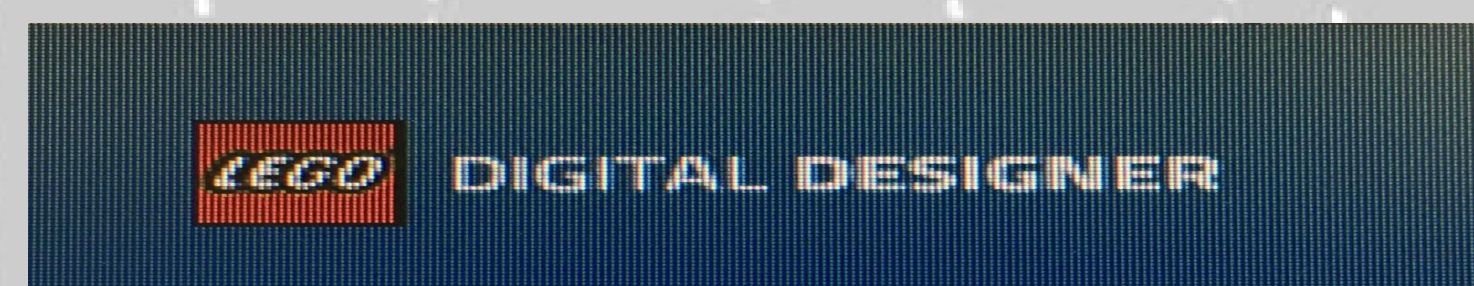
Conclusion

The upside-down spider drone was the best design because of the arms which resemble spider legs, helping to protect the body of the drone.

Methodology/Results

Idea Generation → **Task Classification** → **Concept Design** → **Detailed Design**

- Inspired from nature
- Spiders, Shuriken, Stool Steps

- Make an efficient and safe drone design.

- Generate three different concepts
- Pick the best design from the three

- Use Lego Digital Design Software(LDD) to make final 3D design

Future Research

- A prototype model need to be manufactured.
- A step by step process to build the product in Alberta Learning Factory need to be devised.
- Which can later be programmed to perform different tasks and activities.

Reference

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