Capstone C3 Presentation 3 Final Proposal

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By Team C3

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Project Description

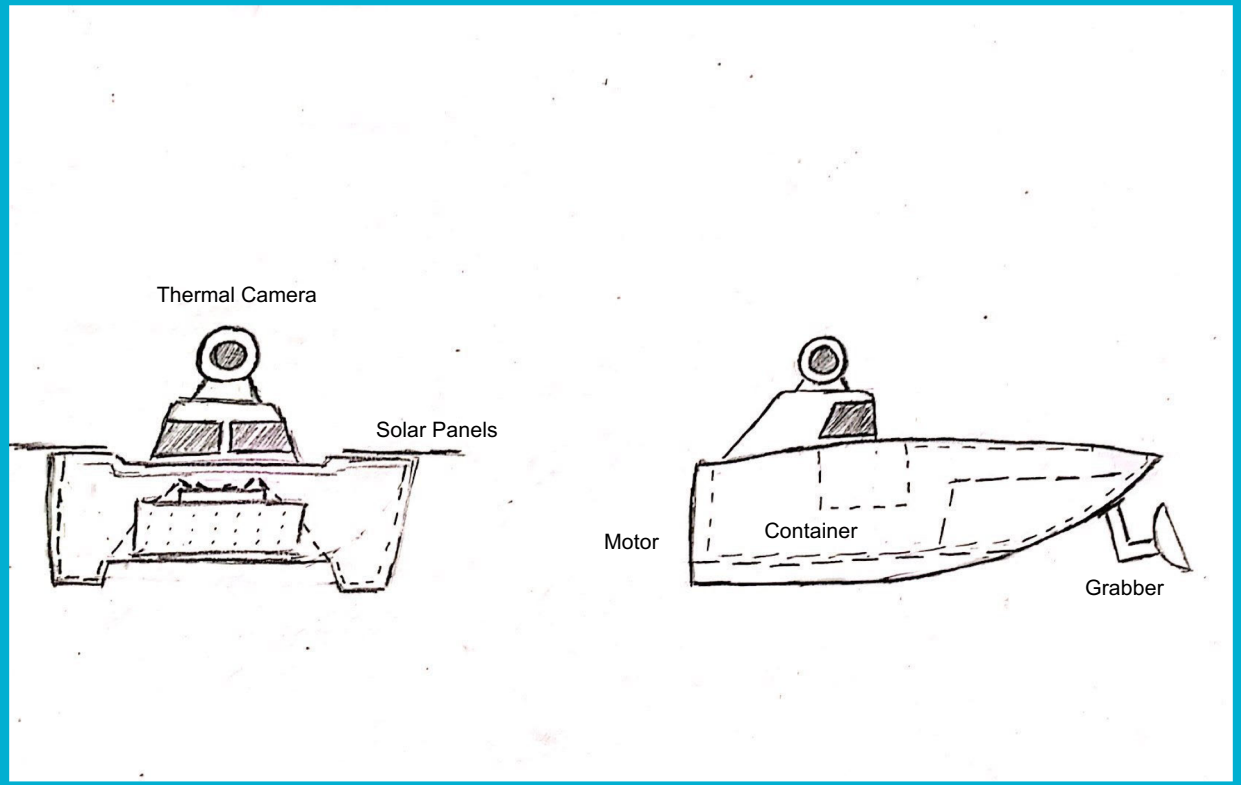
The Pacific Garbage Patch Cleanup team is creating a device that simulates the cleanup of the Great Pacific Garbage Patch. The group will collect ping pong balls in a pool of water using a solar powered autonomous boat with a camera to locate the plastic. The grabber will transfer the balls to on board the boat, into a container.

CAD Package

BOM

Bill of Materials					
Team: C3					
Qty	**Description**	**Functions**	**Material**	**Dimensions**	**Cost**
1	Boat	move	fiber glass	1.02m x 0.30m x 0.25m	$400
1	Camera	detect	fiber glass		$300
1	Trough	collect	plastic	15cmx10cm	$30
2	Trough Beam	hold trough	plastic		$10
2	Hinges	trough movement	stainless steel		$10
20	Solar Panel	power	Silicon	125mmx125mm	$100

Design



Jake Goodman 11/27/18 Garbage Patch Cleanup C3

Functions and Details

Design Functions

- The boat is a solar powered catamaran
- The solar panels power all the features
- The thermal camera locates the ping pong balls
- Trough grabber collects the balls and stores them in a container
- All of the features are run with autonomous software

Device's Function Process

- Store solar power
- Locate plastic
- Navigate boat to the plastic
- Collect plastic
- Store Plastic
- Iterate

Design Requirements

Customer Requirements

- Autonomous
- Solar Powered
- Doesn’t damage ecosystem
- 20+ ping pong balls
- Effective

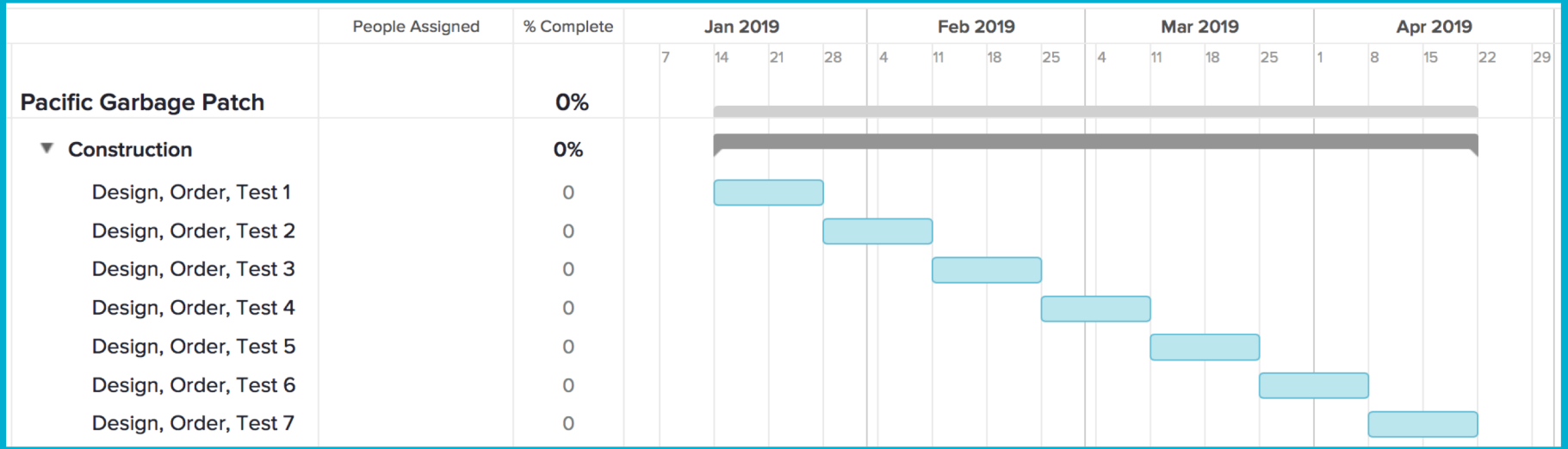
Meet the Requirements

- Function Chain
- Solar panel cells
- Does not trap when collecting
- Storage container within boat
- Thermal Camera detection

Schedule

On Schedule

Team plan for next term



Team Responsibilities

Individually researched separate subsystems

- Boat
- Grabber
- Camera
- Solar Panels
- Motors

Shared research among group for open ideas

Budget

Total Budget $1500 available

Anticipated expenses

- $400 for the boat
- $300 for camera
- $100 for solar panels
- $ 50 for grabber

Actual expenses to date

- $0

Resulting Balance

- $ 1500

Q and A