Project Deliverable E:
Project Schedule and Cost

GNG 1103 - Engineering Design

Winter 2018
Faculty of Engineering
University of Ottawa

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Team Number: ProjC 4
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Due Date: February 26th, 2018

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Objective

The goal of this deliverable is to develop a project plan and a schedule to ensure that the team is able to complete all three project prototypes from now until the end of the semester and provide an estimation of the costs and the components that will be required for the entire project.

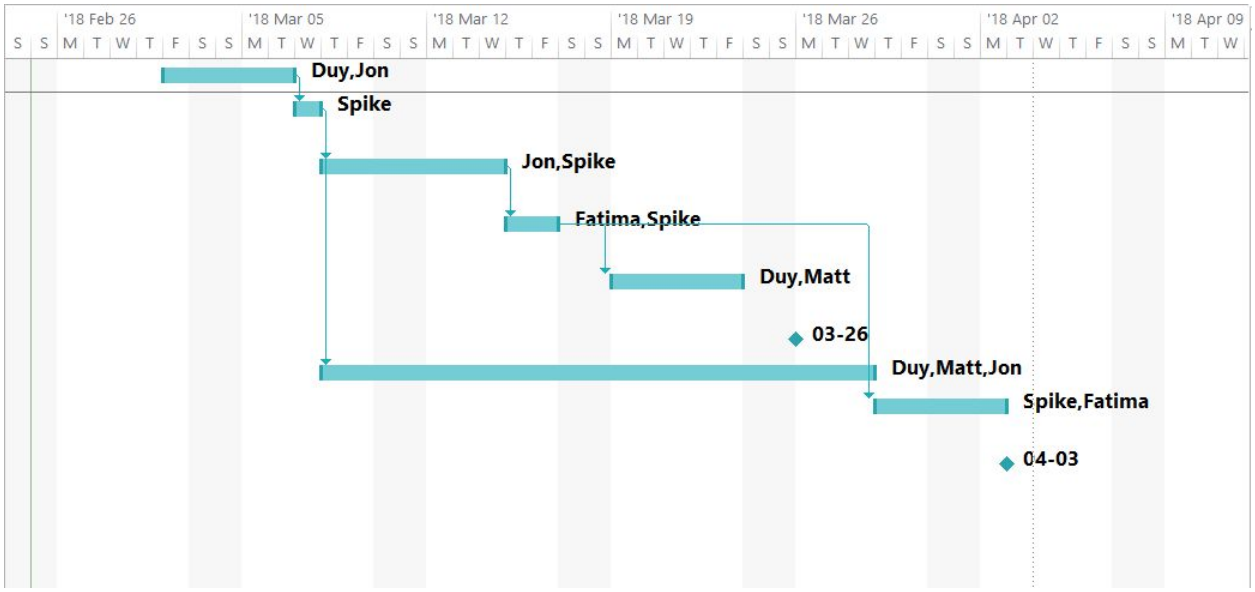
Tasks

A list of all the tasks which need to be completed, an estimated duration for each task, as well as who is responsible for each task.

No.	Task	Task Duration	Member
1	Build the first prototype	3 days	Duy, Jon
2	Analyze the first prototype	1 day	Spike
3	Build the second prototype	1 week	Jon, Spike
4	Analyze the second prototype	2 days	Spike, Fatima
5	Build the third and final prototype	1 weeks	Duy, Matt
6	Prepare a report	3 weeks	Duy, Matt, Jon
7	Prepare a PowerPoint slide	3 days	Spike, Fatima

Gantt Diagram

Task Mode	Task Name	Duration	Start	Finish	Predecessors
	Build the first prototype	3 days	Fri 18-03-02	Tue 18-03-06	
	Analyze the first prototype	1 day	Wed 18-03-07	Wed 18-03-07	1
	Build the second prototype	1 wk	Thu 18-03-08	Wed 18-03-14	2
	Analyze the second prototype	2 days	Thu 18-03-15	Fri 18-03-16	3
	Build the third and final prototype	1 wk	Mon 18-03-19	Fri 18-03-23	4
	Prototype Completion	0 days	Mon 18-03-26	Mon 18-03-26	
	Prepare a report	3 wks	Thu 18-03-08	Wed 18-03-28	2
	Prepare a PowerPoint slide	3 days	Thu 18-03-29	Mon 18-04-02	4
	Project Completion	0 days	Tue 18-04-03	Tue 18-04-03	



Possible Risks and Contingency Plans

A list of the significant project risks and the associated contingency plans to mitigate the critical risks that are reasonably likely.

No.	Risk	Contingency Plan
1	Getting over the budget	Try to find other cheaper materials (on Kijiji, second-hand stores, ebay, etc.)
2	Pump break down	Always use surge protected outlets with the pump, ensure the pump is not overworked. If broken, attempt repairs.
3	Water leakage	Leak management through the use of silicon caulking and/or duct tape.
4	Power Outages	In the event of a power outage, the system will proceed to drain and return to an off state, when the power is returned to the system, it will begin once more.
5	Water & Electricity	Wiring and electronics will all be wrapped and waterproofed through the usage of heat shrink, and electrical tape.
6	Pests & Diseases	With extra funds left over, netting or tarps can be placed over the system so the use of pesticides is not needed.
7	System Failure Threats	With system failure, it will be possible to remove electricity from the pump. This will cause an emergency stop.
8	Broken PVC	In the case of one of the PVC pipes cracking/snapping/etc… the system can be partially dismantled and replaced for additional cost
9	Lack of materials	The group members would split the costs 5 ways to reduce the price of the needed parts.
10	Water contamination	We will have to ensure the system remains clean and not contaminated. If contaminated, we will flush the system with water.

Estimate Costs

An estimate of the cost for all components and materials which we will need for the different prototyping deliverables described above.

No.	Components and Materials	Costs
1	PVC pipe (30 ft)	$18.62
2	Wood frame (2 by 4, 30ft)	$28.92
3	Tubing (20 ft)	$13.54
4	Screws	$7.67
5	Hinges (2)	$6.20
6	Pump	$15.25
7	Reservoir	$10
	Total	$100.02

All costs have been estimated off prices found online. Prices of some items may change when we have to buy the materials but generally this is the overall cost of this design. If it is possible, we will try to find cheaper options to each of the materials to make more room in the budget in case another material is more expensive than anticipated or for non-functional requirements.