Dental Hygiene

Team B

Keenan Lacey (Project manager and client contact) Rodrigo Ojeda (Budget and schedule) Meshal Alrashidi (Website developer and document manager)

Project Description

- Design a dental tritrator for international use
- Tritrator used to mix dental capsules
- NAU Dental Hygiene Department (Sponsor)



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1] Dental Capsule

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Design Description



Figure 1: Final Design

Table 1: Bill of Materials

Number of parts	Part Number	Part Name								
1	1	Black rubber stopper								
1	2	Metal shaft								
1	3	Plastic Metal shaft support								
1	4	Plastic Figure 8								
1	5	Plastic motor base								
1	6	Motor								
1	7	On Off switch								
2	8	Batteries								
1	9	Tooth Brush								
1	10	Upper Base Electric toothbrush Lower Base Electric toothbrush Battery Plug								
1	11									
1	12									
1	13	Capsule Attachment								

Rodrigo Ojeda 4/24/17 Dental Hygiene

Design Description



Figure 2: Energy conversion assembly

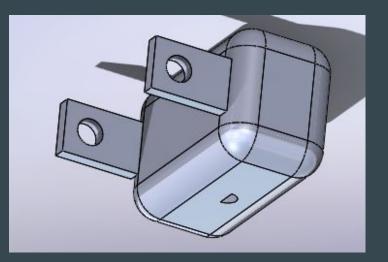


Figure 3: Solidworks attachment

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Design Requirements

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Table 1. Customer Requirements

	Customer Requirements	Weighting
Less than 5 pounds	Lightweight	5
Fits in small carry on bag	Easily Transportable	5
Verified with calculations	Homogeneous Mixture	5
Consistency and performance	Reliability	4
Simple on/off button	Easy Operation	4
Long lasting and sturdy parts	Quality of Parts	3
Less than \$100	Cost	3
Swap batteries or use replacement	Easy Maintenance	3
Colorful design options	Aesthetics	2

Schedule

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Task	Who	25	27	29	1	3	6	8	10	13	15	17	20 2	22 2	4 27	1	3	6	8	10	13	15	17	20	22	24	27	29	31	3	5 7	10	12 1	4 17	15	21	24	26	28	1 3	5
1 Team charter	Team																																								
2 Background report	Team																																								
2.1 Come up with customer need	KL																																								
2.2 Get customer needs approved by sponser	KL																																								
2.4 Background research	MA and RO																																								
2.5 Existing Design	Team																																							_	
2.5.1 Egg beater	MA																																							_	-
	RO																																								
2.5.3 Sawzall	KL				-																																				-
2.5 Write up report	Team																																							-	-
2.6 Format and Turn in report	MA																																								-
3 Presentation 1	Team																																							_	-
3.1 Create Presentation	Team																																							-	-
3.2 Practice for Presentation	Team																																								1
Peer Evals # 1	Team																																								-
																										-														-	-
4 Preliminary proposal report	Team																																							-	
4.1 Customer requirements	RO																																							-	-
	MA																																							_	-
4.3 Update House of Quality	KL																	-																							
4.4 Each Create seven designs	Team																																							-	-
4.5 Narrow down design	Team																																							-	-
4.6 Select Design	Team																																							-	
5 Presentation 2	Team																																							_	-
5.1 Create Presentation	Team																																							-	-
5.2 Practice Presentation	Team				-																										-									-	-
Peer Evals # 2	Team																																								
6.1 Project description	Keenan lacey																																							-	-
	Rodrigo Ojeda																						-																		
6.3 Customer Requirment	Keenan lacey																																							-	
6.4 Schedule & budget	Meshal Alrashidi																																							_	-
7 Final report	Team														-																									-	-
	Rodrigo Ojeda																																								
7.2 Report requirement	Meshal Alrashidi																																								
7.3 Existing Designs	Keenan lacey																																							-	-
7.4 Design considered	Meshal Alrashidi																																							-	-
	Rodrigo Ojeda																																							-	
7.6 Proposed design	Keenan lacey																																							-	-
8 Final Presentation	Team														+																										-
8.1 Project description	Meshal Alrashidi																																							-	1
	Rodrigo Ojeda										-	-	-		-						-	-						-	-+	-	-									-	1
	Keenan lacey					-	-	-	-		-	-	-		-				-	-	-	-				-		-	-	-	-									-	-
8.4 Schedule & budget	Meshal Alrashidi						-	-	-		-	-	-	-	-				-	-	-	-				-		-	-	-	-									_	-
Final Prototype due	Team					-	-	-		-	-	-	+	-	-				-	-	-	-						-	-+	-	-							1000			-
Peer Evals # 3	Team					-	-	-		-	-	-	-	-	-				-	-	-	-						-	-	-	-		-	-	-	-	-				
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Zoomed Schedule

								April							May	
Task	Who	3	5	7	10	12	14	17	19	21	24	26	28	1	3	5
7 Final report	Team											5		_		:
7.1 Background	Rodrigo Ojeda					a 70			3		33		\rightarrow	_		
7.2 Report requirement	Meshal Alrashidi								a:		3		;	-	0 3	
7.3 Existing Designs	Keenan lacey	-	<u>.</u>								3		\sim	_		
7.4 Design considered	Meshal Alrashidi		3-								3		\Rightarrow	_		
7.5 Design selected	Rodrigo Ojeda		1								- 10 - 10		-	_		
7.6 Proposed design	Keenan lacey		1									1	\sim	-		
8 Final Presentation	Team		3-										\Rightarrow	_		
8.1 Project description	Meshal Alrashidi		<u> </u>						3		- 53		\rightarrow	_		
8.2 Background & Benchmarking	Rodrigo Ojeda		<i>3</i> !:								31		-	_		
8.3 Customer Requirment	Keenan lacey		3			2		-					-	_		
8.4 Schedule & budget	Meshal Alrashidi		<i></i>			2 - Y							-			
Final Prototype due	Team					8 - Y		2	a—:		52				10	
Peer Evals # 3	Team		3			a - 10			3		2				, I,	i - 11

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Next term Schedule

Task	Who	August	September	October	November	December
1 Stuff meeting	Team	e.				
2 Prgress Presentation	Team					
3Hardware review 1	team					
4Staff meeting 2	Team					
5 Midpoint review pre	Team					
6 Hardware2	Team					
7 Staff meeting	Team					
8 presentation walk	Team					
9 Final product test	Team					
10 Final presentation	Team					

Budget

Table 2. Budget and Final Cost

Material	Cost
Electric toothbrush x2[1]	\$20
AA Rechargeable Batteries x8[2]	\$14.99
Carry on luggage 7.3" x 6.5" x 4.5" [3]	\$16.88
3D Printing "attachments"	\$30
Prototype	\$35
Testing	\$100
Anticipated final cost	\$216.87
Final Design Cost	\$81.87

Questions ?

References

[1] "Equate Easyflex Total Power Toothbrush, Battery". *Walmart.com*. N.p., 2017. Web. 24 Apr. 2017.

[2] "Amazonbasics AA Rechargeable Batteries (8-Pack) Pre-Charged - Packaging May Vary: Health & Personal Care". *Amazon.com*. N.p., 2017. Web. 24 Apr. 2017.

[3] "Case Logic DSLR Shoulder Bag, Black". *Walmart.com*. N.p., 2017. Web. 24 Apr. 2017