

Dental Hygiene 3

ME476C

Team (I)

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Client: Amy Smith

April 23, 2017

Introduction

- i. Project Description
- ii. Design Description
- iii. Design Requirements
- iv. Schedule and Budget

Project Description

- ▶ A dental triturator mixes dental capsules content.
- ▶ Dental capsules are used for dental fillings.
- ▶ Device should be used in different countries.
- ▶ Project aims to make a manual dental triturator that is hand driven.
- ▶ The project is Under taken by Dental Hygiene department.

April 24,2017

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Mohammad
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Client Contact



AMY SMITH, RDH, MS, MPH
**“Assistant Clinical Professor at Dental
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Design Description

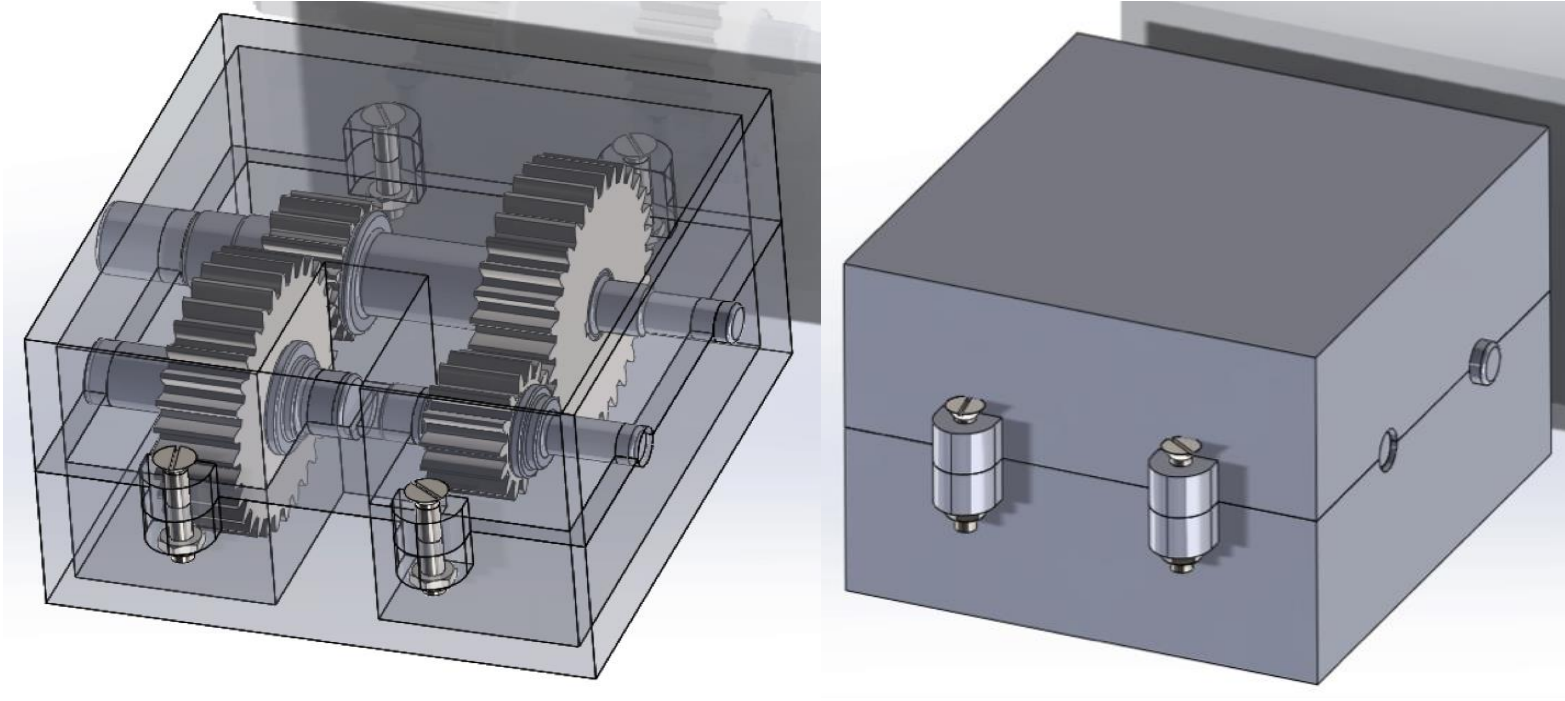


Figure 1: Gear Box Style Design

Design Description

- ▶ Design based on a gear box
- ▶ The case is locked with 2 bolts in the front
- ▶ Material used for the case = Plastic
- ▶ Material used for gears and shaft = Steel
- ▶ Number of gears = 4
- ▶ Number of shafts = 3
- ▶ Gear 1 = Gear 3 = 15 teeth
- ▶ Gear 2 = Gear 4 = 31 teeth

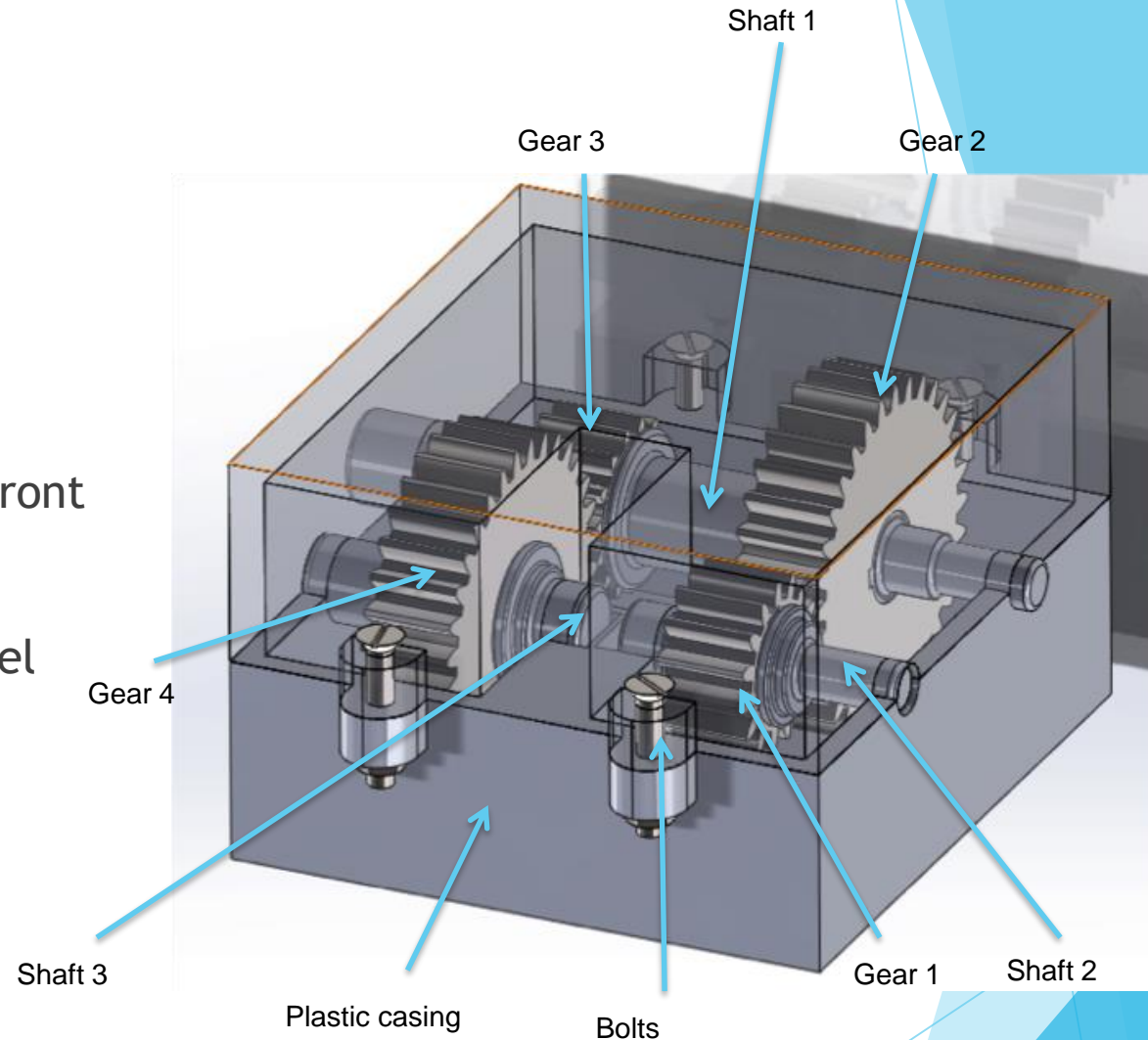


Figure 2: Gear Box Style Design (Transparent top)

Design requirements

- ▶ Device should shake the formulation that is in the capsule for ten seconds to get Homogeneous liquid
- ▶ enough power to shake the capsule thoroughly by using gear box design
- ▶ Safety in the use of the device should also be observed.
- ▶ Device should be stable and light weight to travel when it is placed on a level ground.
- ▶ Should use easy material to maintain and operate and cost less budget
- ▶ Should be high quality and high life design.

Customer Requirements	weight
Shaking time	5
Easy transportable	5
Safety	5
Easy to operate	4
Life of the device	4
Quality of the parts	3
Cost	3

Table 1: Customer Requirements

Schedule & Budget

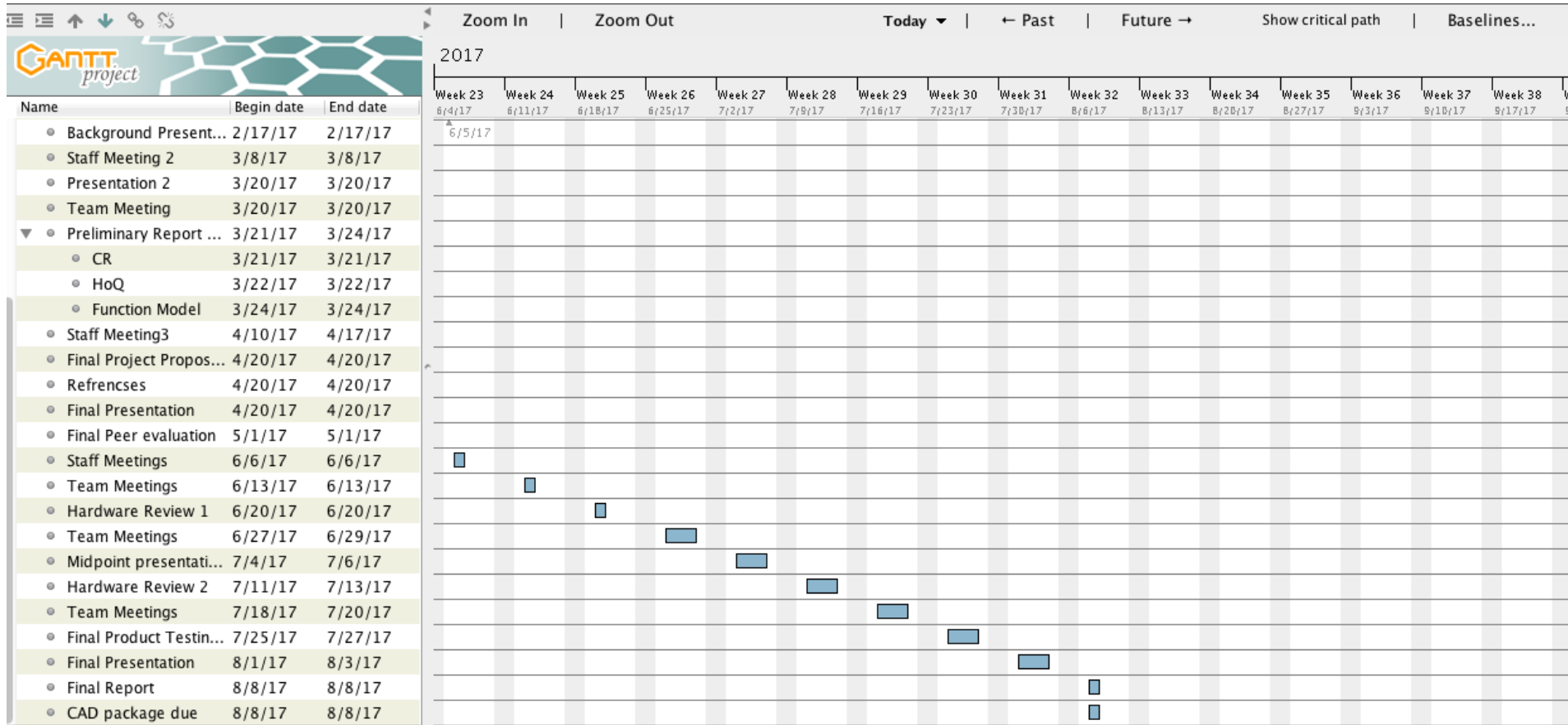


Figure 3: Gantt Chart

Budget

- ▶ Overall Budget is \$750.
- ▶ The market price is capped at \$250 for dental triturator.
- ▶ Our estimate is at \$250 for the total materials needed for the device.
- ▶ Manufacturing parts is estimated to be \$150.
- ▶ Remaining \$350, and it will be used for urgent changes in our design.

Any Questions?