PROJECT THREE: MILESTONE 3 – COVER PAGE

Team Number: Thurs-14

Please list full names and MacID's of all *present* Team Members

Full Name:	MacID:
Kartik Chaudhari	chaudk4
Mahmoud El Shafei	elshafem
Kelvin Weng	wengc3
Yuvraj Sandhu	Sandhuy

MILESTONE 3 (STAGE 1A) – WORKFLOW PSEUDOCODE (COMPUTATION SUB-TEAM)

Team Number: Thurs-14

You should have already completed this task individually *prior* to Design Studio 15.

1. Write out a pseudocode outlining the *high-level workflow* of your computer program on the following page
   → Only one team member is responsible for this task (not *both*)
   → Be sure to clearly indicate who each code belongs to

We are asking that you submit your work on both worksheets. It does seem redundant, but there are valid reasons for this:
- Each team member needs to submit their pseudocode with the **Milestone Three Individual Worksheets** document so that it can be *graded*
- Compiling your individual work into this **Milestone Three Team Worksheets** document allows you to readily access your team member's work
  - This will be especially helpful when completing **Stage 3** of the milestone

Name: Kelvin Weng	MacID: wengc3

Start the program

-Drop container on the servo table

-Identify the mass of the container

-Identify the material of container

-Destination is determined based on attributes

-Q-arm picks up container and drop it into the corresponding colors Q-bot

Repeats;

-Drop container on the servo table

-Determine container attributes

- Destination is determined based on attributes

-If destination same and total weight does not over 90g then drop container into the hopper and repeats.

End infinite loop

MILESTONE 3 (STAGE 1B) – WORKFLOW FLOWCHART / STORYBOARD (COMPUTATION SUB-TEAM)

Team Number: | Thurs-14

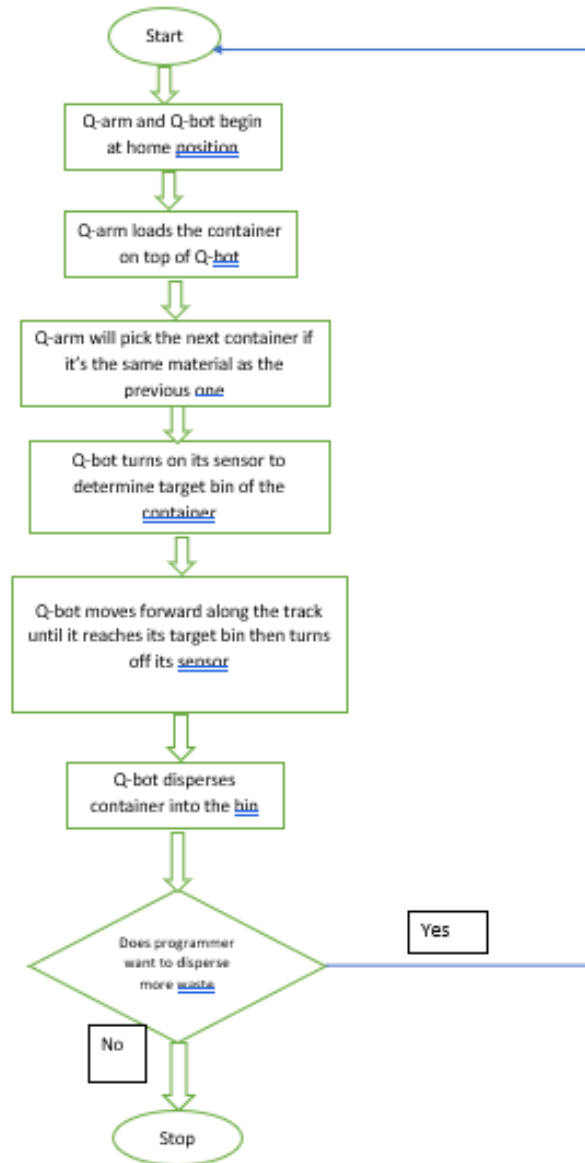You should have already completed this task individually *prior* to Design Studio 15.

1. Only one team member is responsible for this task (not *both*)
2. Copy-and-paste your flowchart or storyboard on the following page
   → Be sure to include your Team Number, Name and MacID
3. Take a photo of your flowchart / storyboard
4. Insert your photo as a Picture (Insert > Picture > This Device)

We are asking that you submit your work on both worksheets. It does seem redundant, but there are valid reasons for this:

- Each team member needs to submit their flowchart/storyboard screenshots with the **Milestone Three Individual Worksheets** document so that it can be *graded*
- Compiling your individual work into this **Milestone Three Team Worksheets** document allows you to readily access your team member's work
  - o This will be especially helpful when completing *Stage 3* of the milestone

Name: Mahmoud El Shafei	MacID elshafem

Insert screenshot(s) of your flowchart or storyboard.

```
            ( Start )
                |
                v
    +-----------------------+
    |  Q-arm and Q-bot begin|
    |   at home position    |
    +-----------------------+
                |
                v
    +-----------------------+
    | Q-arm loads the       |
    | container on top of   |
    | Q-bot                 |
    +-----------------------+
                |
                v
    +-----------------------------+
    | Q-arm will pick the next    |
    | container if it's the same  |
    | material as the previous one|
    +-----------------------------+
                |
                v
    +-----------------------+
    | Q-bot turns on its    |
    | sensor to determine   |
    | target bin of the     |
    | container             |
    +-----------------------+
                |
                v
    +-----------------------------+
    | Q-bot moves forward along   |
    | the track until it reaches  |
    | its target bin then turns   |
    | off its sensor              |
    +-----------------------------+
                |
                v
    +-----------------------+
    | Q-bot disperses       |
    | container into the bin|
    +-----------------------+
                |
                v
           / Does       \
          /  programmer  \  --- Yes ---> (back to Start)
          \  want to     /
           \ disperse    /
            \ more waste /
                |
               No
                |
                v
            ( Stop )
```

MILESTONE 3 (STAGE 2) – DETAILED SKETCHES (MODELLING SUB-TEAM)

Team Number: | Thurs-14

You should have already completed this task individually *prior* to Design Studio 15.

1. Copy-and-paste each sub-team member's detailed sketch on the following pages (1 sketch per page)
    → Be sure to indicate each team member's Name and MacID

We are asking that you submit your work on both worksheets. It does seem redundant, but there are valid reasons for this:

- Each team member needs to submit their detailed sketches with the **Milestone Three Individual Worksheets** document so that it can be *graded*
- Compiling your individual work into this **Milestone Three Team Worksheets** document allows you to readily access your team member's work
    o This will be especially helpful when completing *Stage 4* of the milestone

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Name: Kartik Chaudhari | MacID: chaudk4

DESIGN PROJECT 3-Milestone 3

Hopper
↓

Pivot

Gear

← Rotating Actuator

Railing

Bolts or Nuts for holding
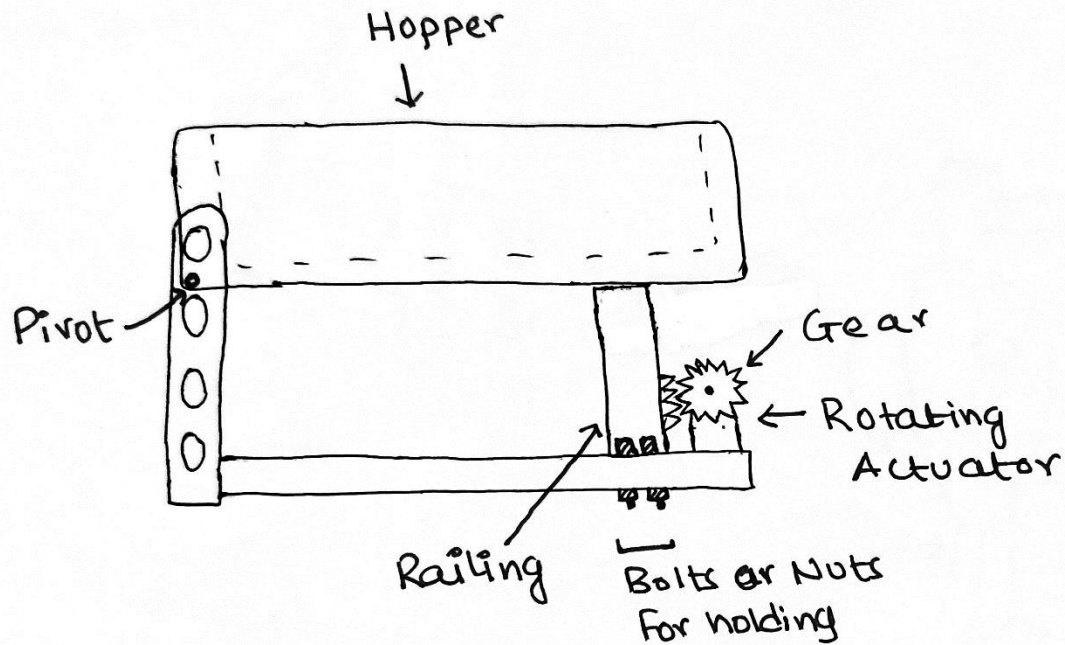
DEPOSIT POSITION

Thurs-14
chaudk4
Kartik Chaudhari
27th Jan, 2021

Name: Yuvraj Sandhu	MacID: Sandhuy

Insert screenshot(s) of your detailed sketch below.

Design Project 3 - Milestone 3   DEPOSIT Position

HOPPER

Pivot Point

Rack

Gear

Rotating Actuator

Railing

Securing Nuts/Bolts

THURS- 14
Yuvraj Sandhu
Sandhuy
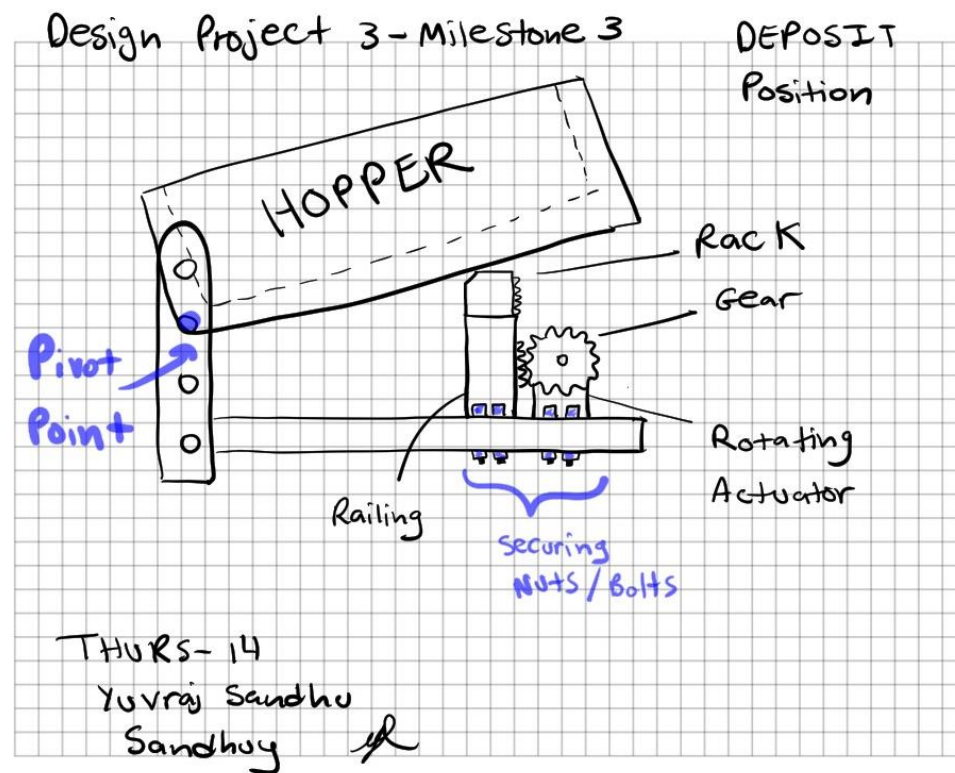
*If you are in a sub-team of 3, please copy and paste the above on a new page.

Team Number: | Thurs-14

1. As a team, write out the pseudocode or create a flowchart for the indicated tasks in the space below.
   → If creating a flowchart, complete your flowchart on a separate sheet of paper, take a photo of your sketch and insert photo as a Picture (Insert > Picture > This Device)

Dispense Container

Rotate the table so container is in its position

Load Container

Moe the Q-arm such as the gripper is lined with the container.

Close the gripper.

Rotate the Q-arm is a position such that the container is on top off the Q-bot.

Open the gripper to release the container.

Rotate Q-arm back to its home position.

Transfer Container

Transfer Container

Activate the colour sensor.

while the color sensor detects the matching bin

Move Q-bot travels along the track

Stop Q-bot

Deposit Container

Position the Q-bot adjacent to the bin

Activate timer

While the time elapsed is less than the required time of deposition the container

Rotate the Q-bot

Return Q-bot to home position

Return Home

Return home

While Q-bot is not in home position

Move the q-bot along the track

Stop the Q-bot

# MILESTONE 3 (STAGE 4) – PRELIMINARY MODELLING (MODELLING SUB-TEAM)

Team Number: | Thurs-14

1. As a team, create solid models of the various components of your device in Autodesk Inventor, based on the detailed sketches.
   → Take multiple screenshots of each solid model you create
   → Insert your photo(s) as a Picture (Insert > Picture > This Device)
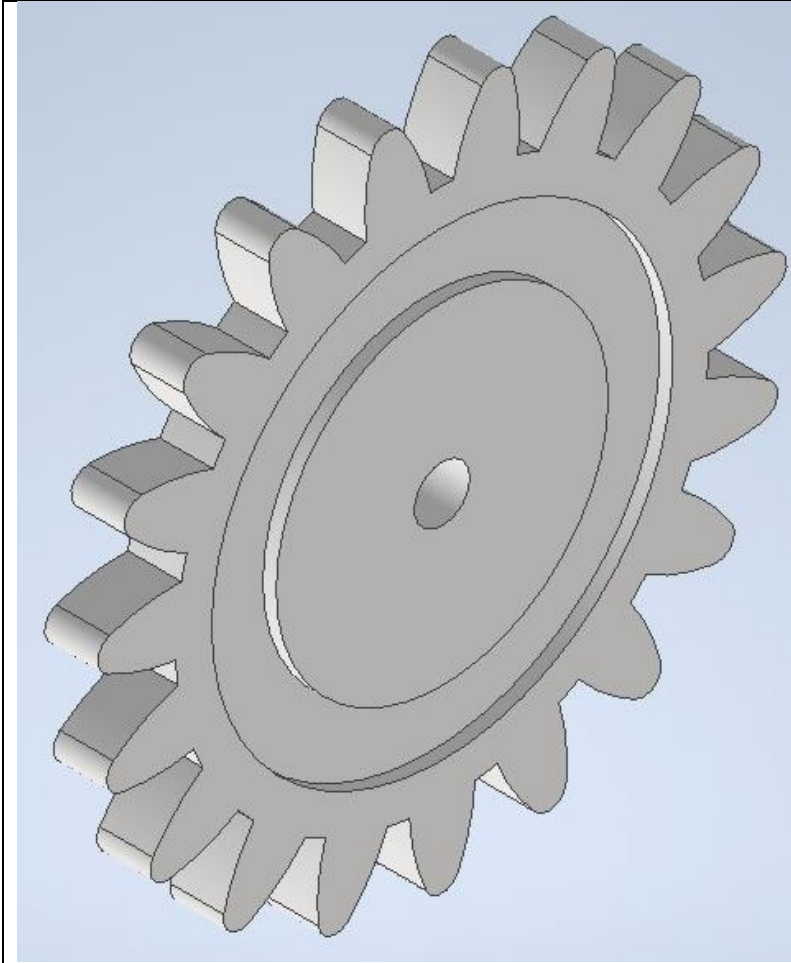   → **Do not include more than *two* solid modelling screenshots per page**
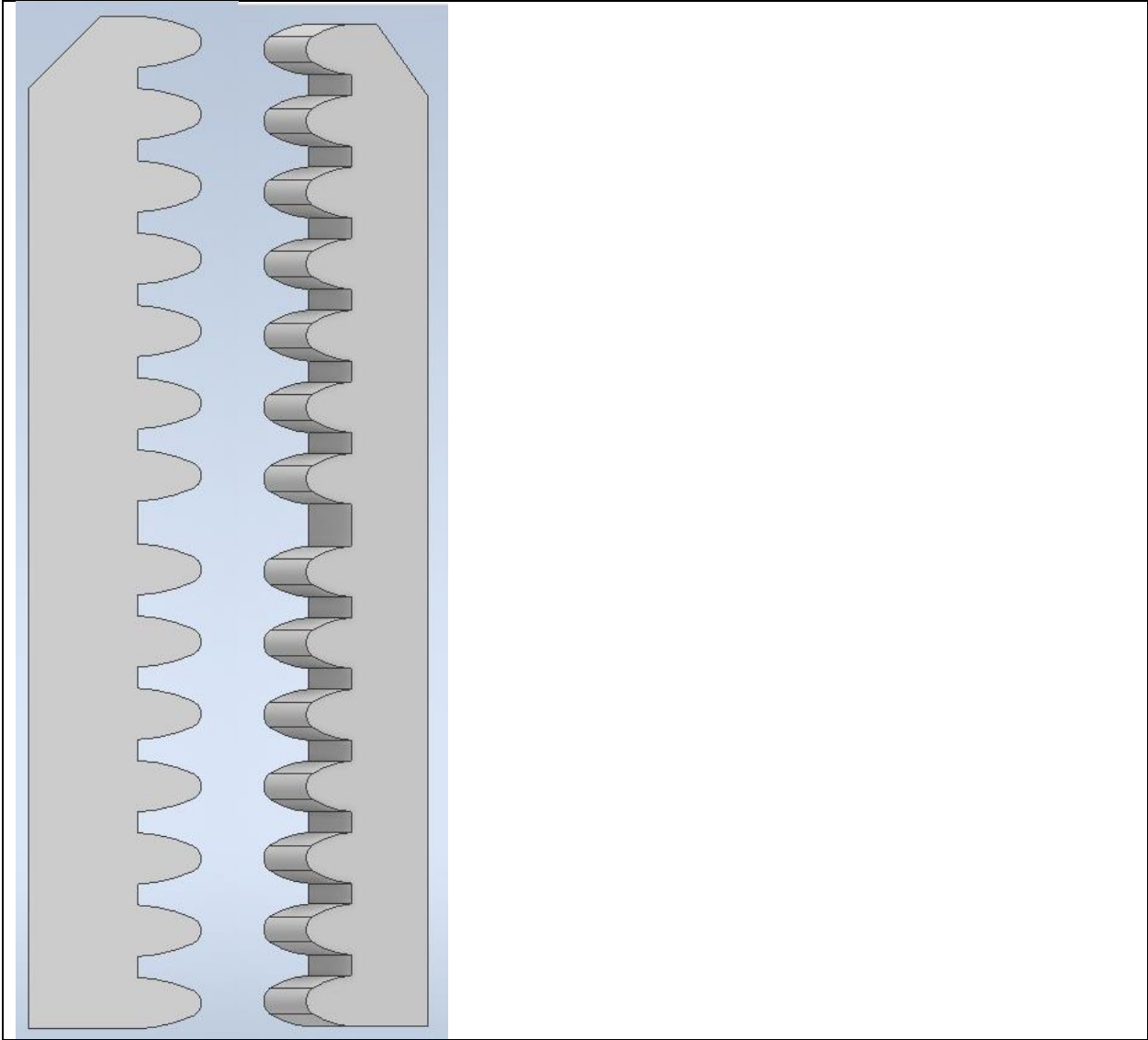
Name: Yuvraj Sandhu	MacID: Sandhuy

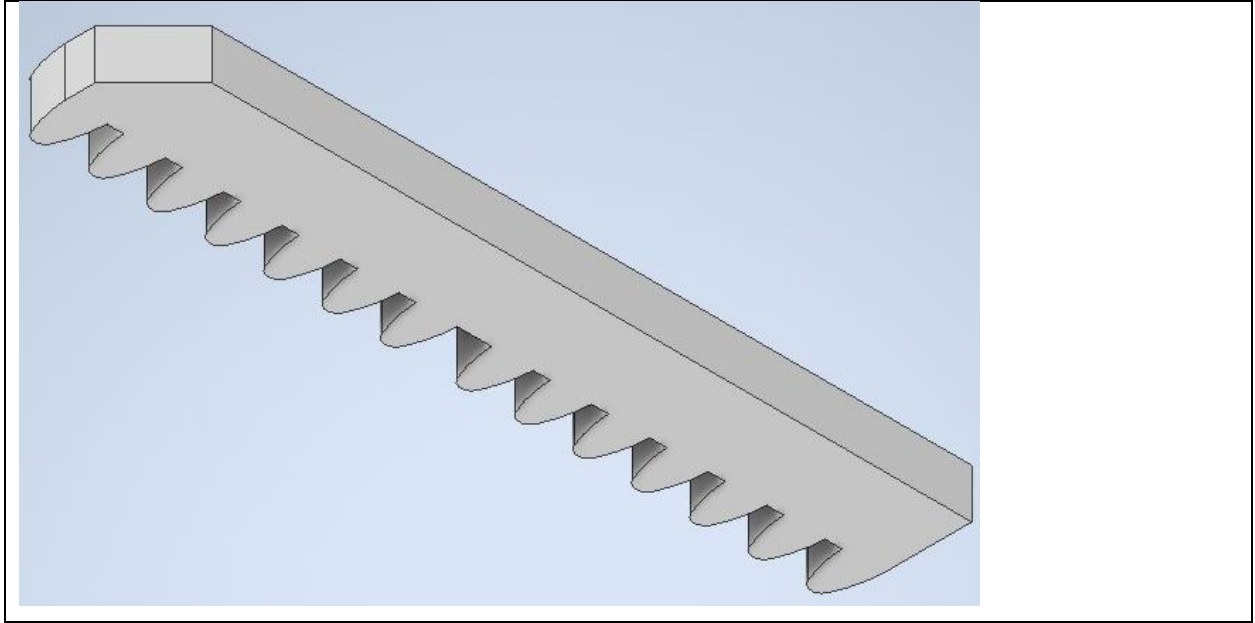*Insert screenshot(s) of your model below.*
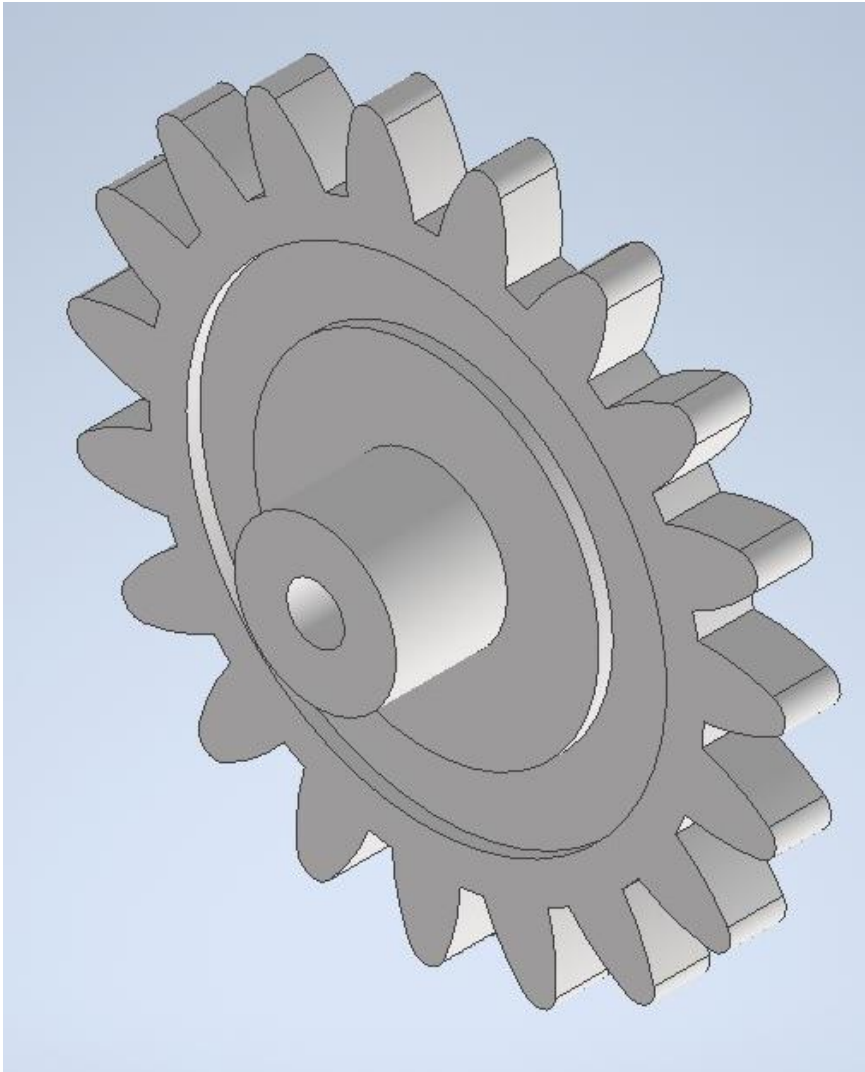
*Limit screenshots to no more than 2 per page. For additional screenshots, please copy and paste the above on a new page

Name: Yuvraj Sandhu	MacID: Sandhuy
Insert screenshot(s) of your model below.	

Name: Kartik Chaudhari	MacID: chaudk4
Insert screenshot(s) of your model below.	