PROJECT THREE: MILESTONE 3 – COVER PAGE

Team Number: Tues-33

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

Full Name:	MacID:
Zareen Kabir	kabirz
Sude Sayyan	sayyans
Luigi Quattrociocchi	quattrl
Fondson Lu	luh57
Nolan Cross	crossn3

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

Team Number: Tues-33

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

Team Number: Tues-33

Name: Sude Sayyan	MacID: sayyans

*Write out a pseudocode outlining the **high-level workflow** of your computer program in the space below.*

1. Q-arm and Q-bot start in their Home positions
2. Using a colour sensor, the container and destination bin attributes are determined
    a. Mass
    b. Bin01 – red
    c. Bin02 – blue
    d. Bin03 – white
    e. Bin04 – black
3. Container is placed at Sorting Station
4. Q-arm identifies the container and heads to given xyz location
5. Q-arm opens two finger grippers to pick up the container, and then closes the grippers
6. Q-arm moves to the xyz location of the Q-bot (with container)
7. Q-arm loads the container onto the Q-bot
8. Steps 3-6 are repeated until:
    a. A different attribute container is placed at the Sorting Station, or
    b. Three containers are already located on the Q-bot, or
    c. The mass of the new container placed at the Sorting Station (along with the masses already on the Q-bot) have exceeded 90 grams
9. Q-bot activates colour sensor
10. Q-bot proceeds to move between bins until it senses the correct colour
11. Q-bot determines and places the containers in the correct destination bins
12. The Q-arm and Q-bot return to their Home positions

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

Team Number: Tues-33

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

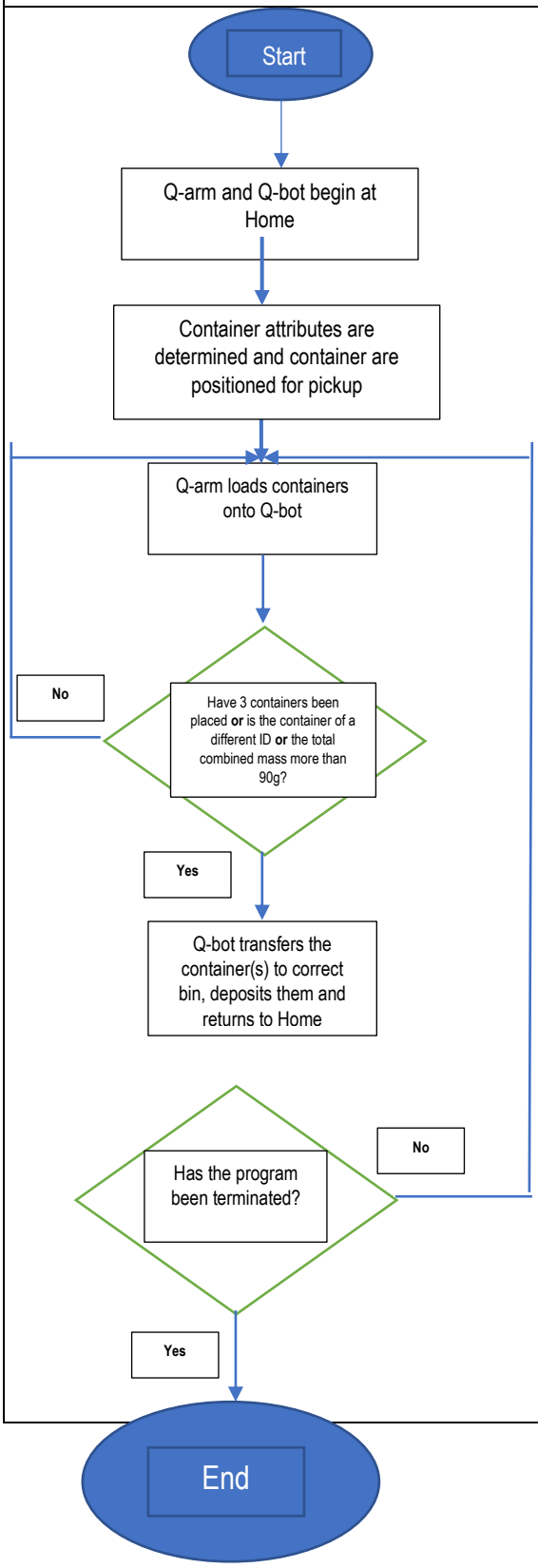
1. Only one team member is responsible for this task (not *both*)
2. Copy-and-paste your flowchart or storyboard on the following page
   → Be sure to include your Team Number, Name and MacID
3. Take a photo of your flowchart / storyboard
4. Insert your photo as a Picture (Insert > Picture > This Device)

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
  - This will be especially helpful when completing ***Stage 3*** of the milestone

Team Number:	Tues-33

Name:Zareen Kabir	MacID: kabirz



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

Team Number: Tues-33

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

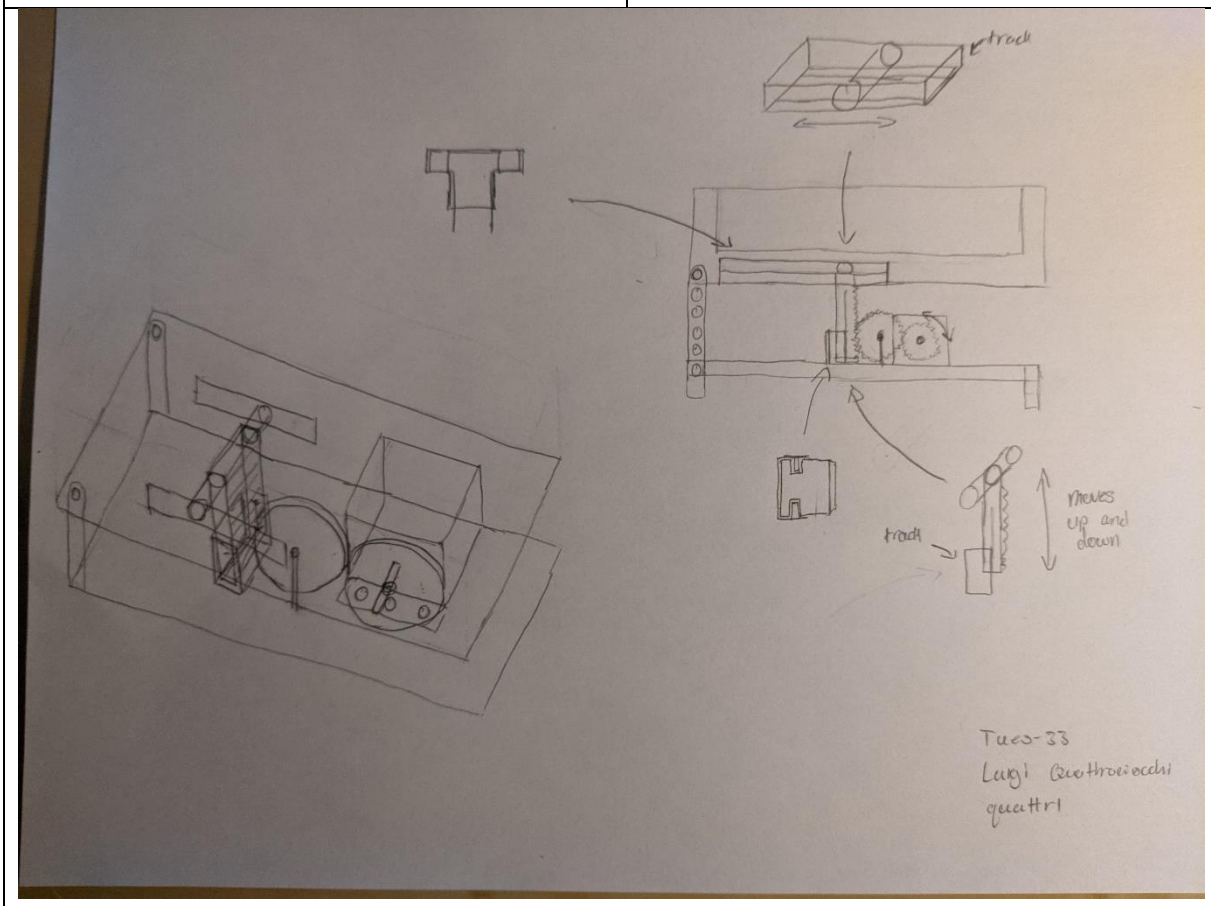
1. Copy-and-paste each sub-team member's detailed sketch on the following pages (1 sketch per page)
   → Be sure to indicate each team member's Name and MacID

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
  - This will be especially helpful when completing ***Stage 4*** of the milestone

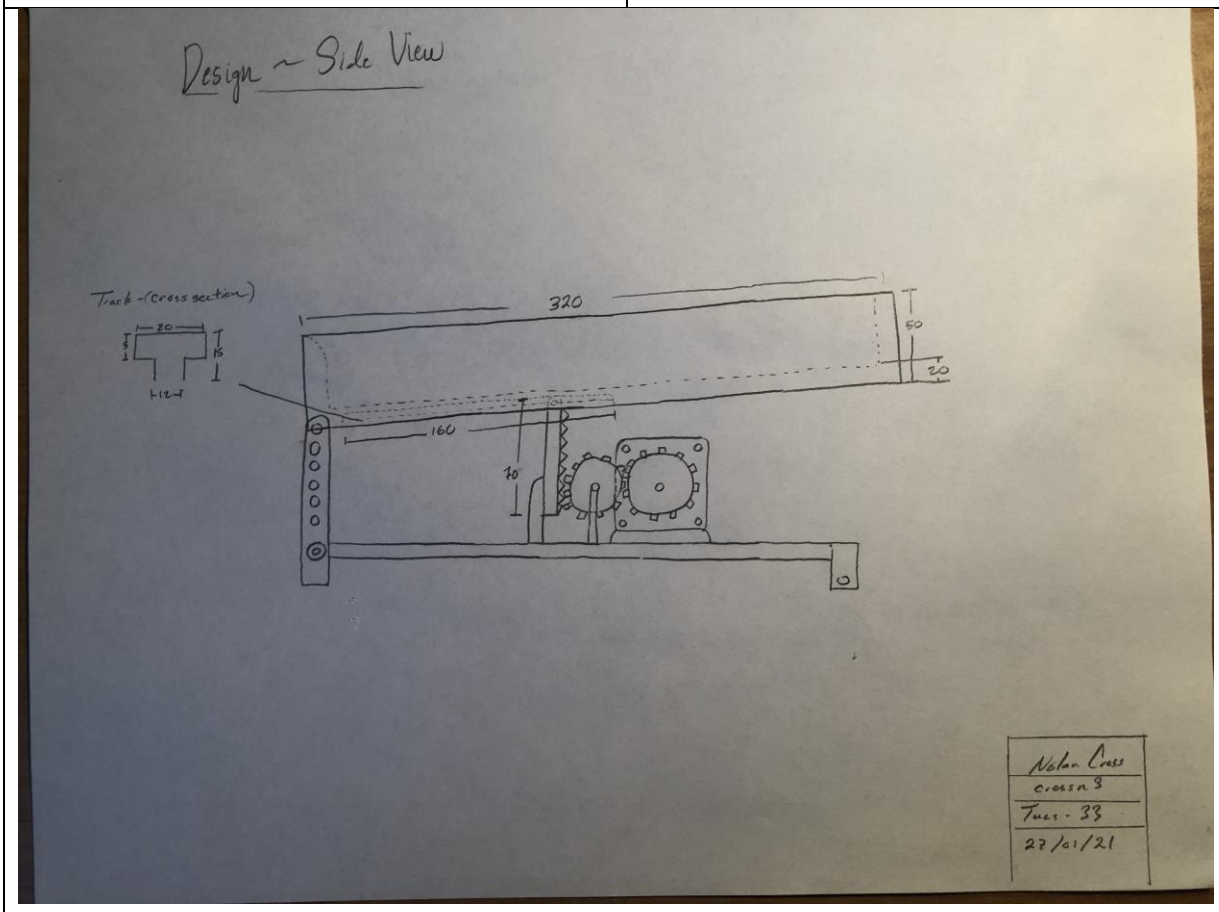
Team Number: Tues-33

Name: Luigi Quattrociocchi	MacID: quattrl



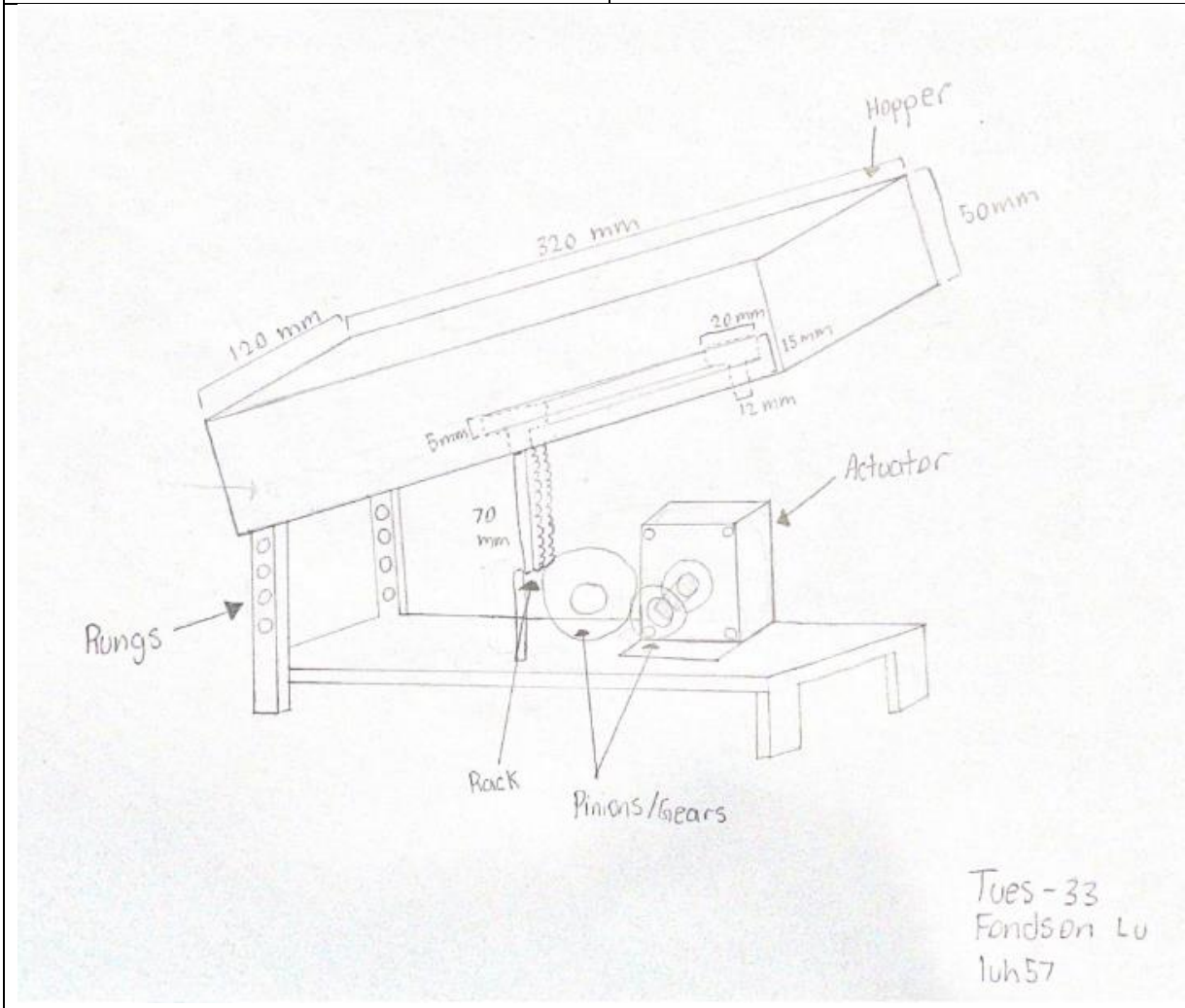
Team Number: Tues-33

Name: Nolan Cross	MacID: crossn3



Team Number: Tues-33

Name: Fondson Lu	MacID: luh57



MILESTONE 3 (STAGE 3) – PROGRAM TASK PLANNING (COMPUTATION SUB-TEAM)

Team Number: Tues-33

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

1. Q-arm and Q-bot start in their *Home* positions.
2. Using a colour sensor, the container and destination bin attributes are determined.
   a. Bin01 – red
   b. Bin02 – blue
   c. Bin03 – white
   d. Bin04 – black
3. Container is dispensed and positioned at Sorting Station

Load Container

1. Q-arm identifies the container and heads to given xyz location (that has been determined)
2. Q-arm opens two finger grippers to pick up the container, and then closes the grippers
3. Q-arm moves to the xyz location of the Q-bot (with container)
4. Q-arm loads the container onto the Q-bot
5. Steps are repeated until:
   a. A different attribute container is placed at the Sorting Station, or
   b. Three containers are already located on the Q-bot, or
   c. The mass of the new container placed at the Sorting Station (along with the masses already on the Q-bot) have exceeded 90 grams

Transfer Container

1. Q-bot activates colour sensor, and moves forward, following the trajectory of a line on the floor towards the bins
2. Q-bot proceeds to move between bins until it senses the correct colour
    a. Bin01 – red
    b. Bin02 – blue
    c. Bin03 – white
    d. Bin04 – black
3. Q-bot stops moving once it finds the correct bin
4. The colour sensor has been deactivated once the bin is found

Deposit Container

1. Q-bot determines and places the containers in the correct destination bins
2. Q-bot should be moved until the hopper is adjacent to the bin
3. The hopper is rotated to deposit containers into the bin
4. Q-bot is positioned back onto the trajectory line

e

Return Home

1. The Q-arm and Q-bot return to their *Home* positions
2. Q-bot is re-positioned for the loading of the next container(s)

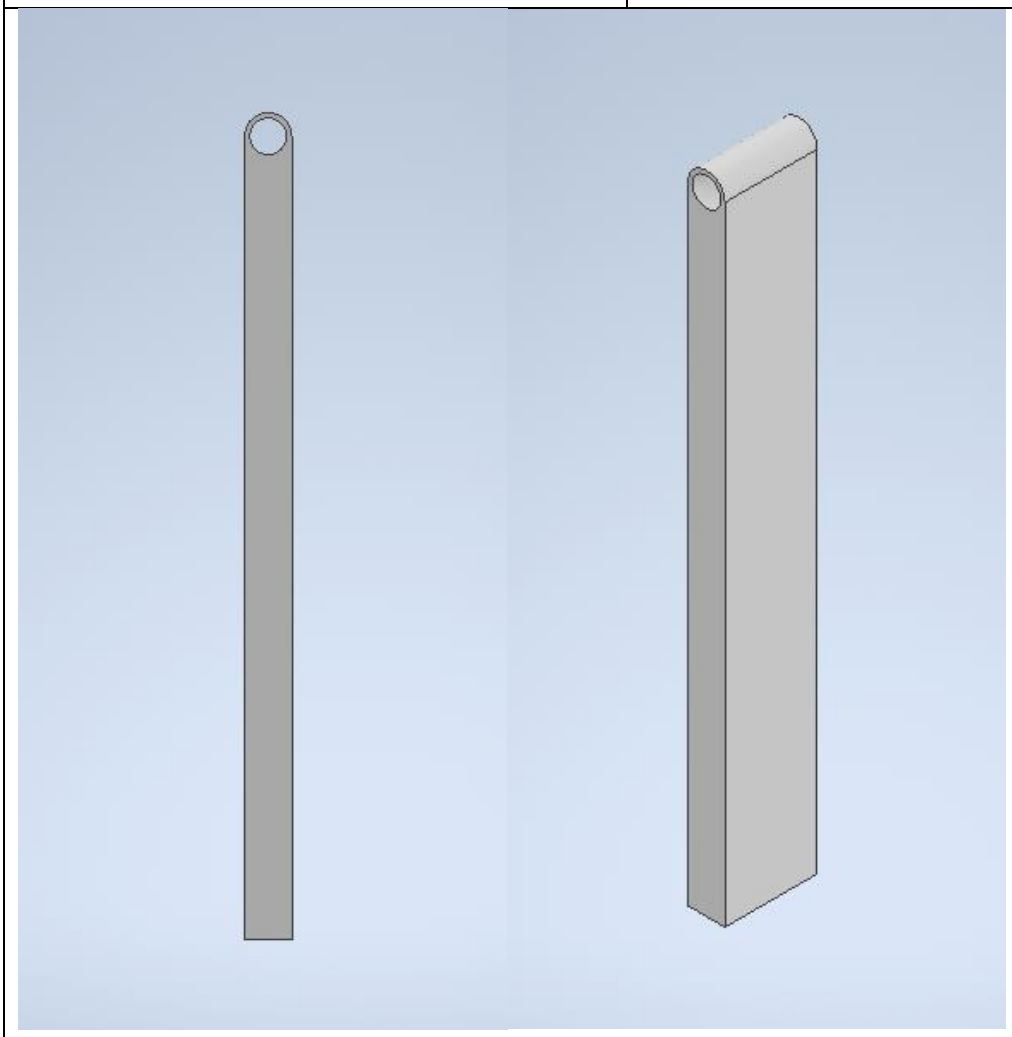
MILESTONE 3 (STAGE 4) – PRELIMINARY MODELLING (MODELLING SUB-TEAM)

Team Number: Tues-33

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**

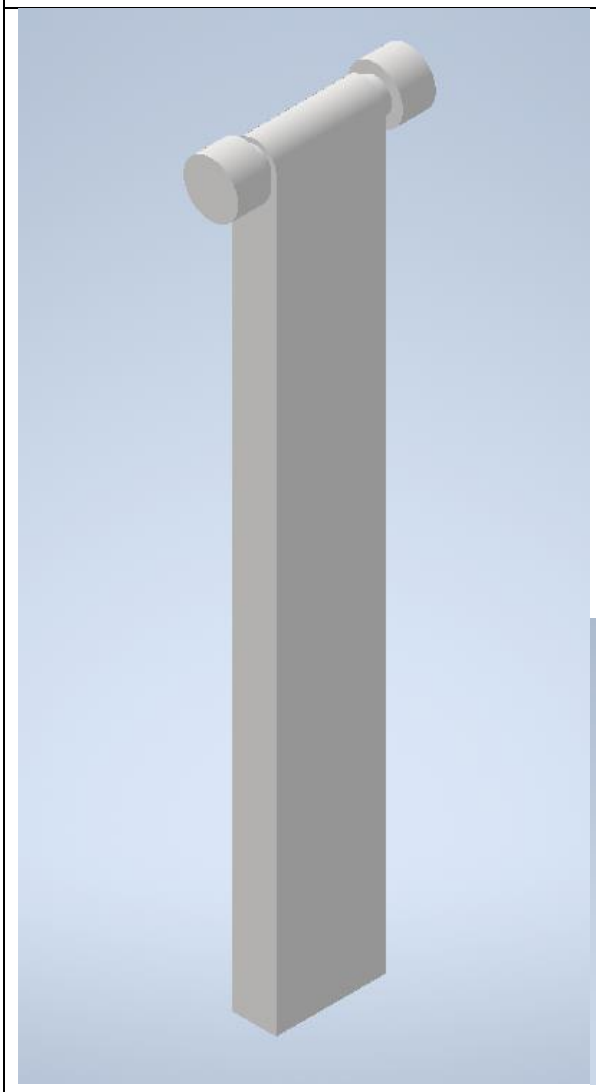
Team Number: Tues-33

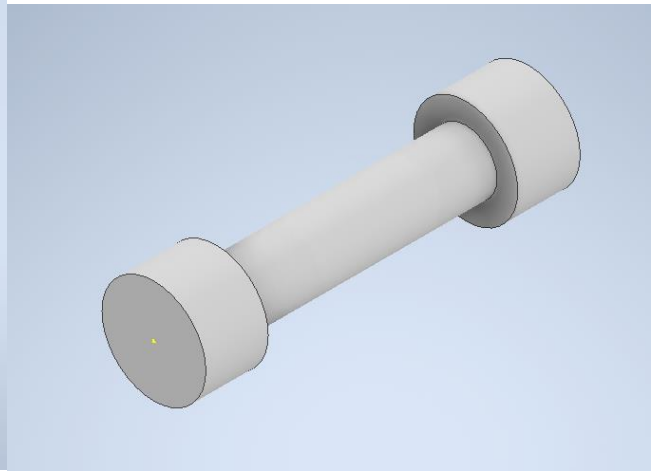
Name:	MacID



Team Number: Tues-33

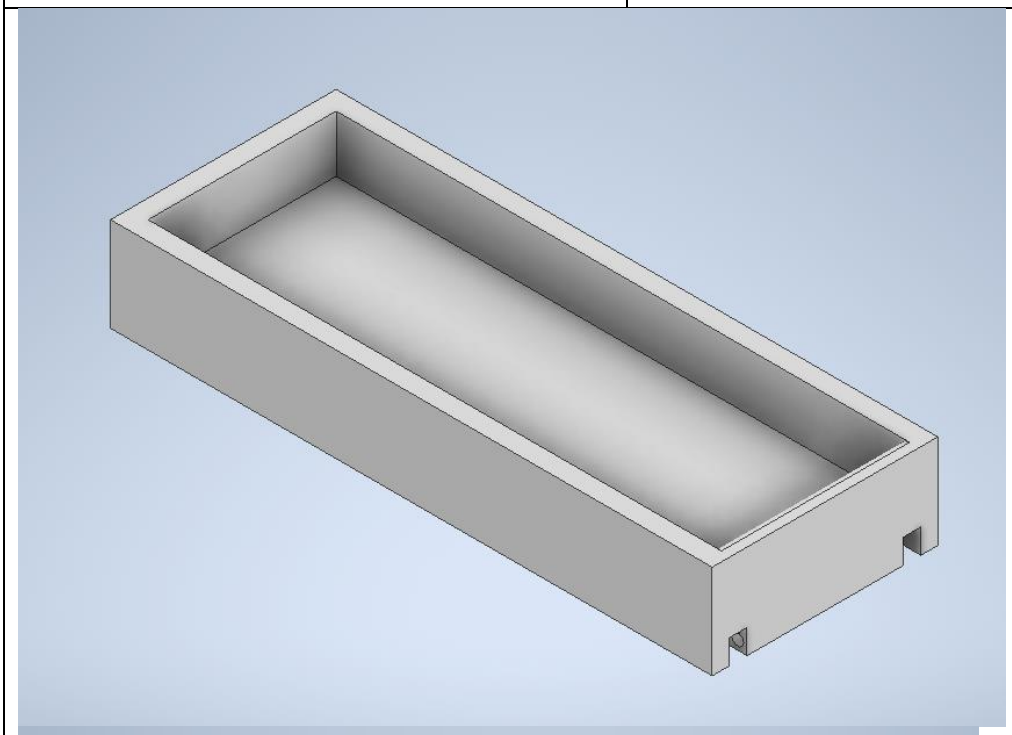
Name:	MacID

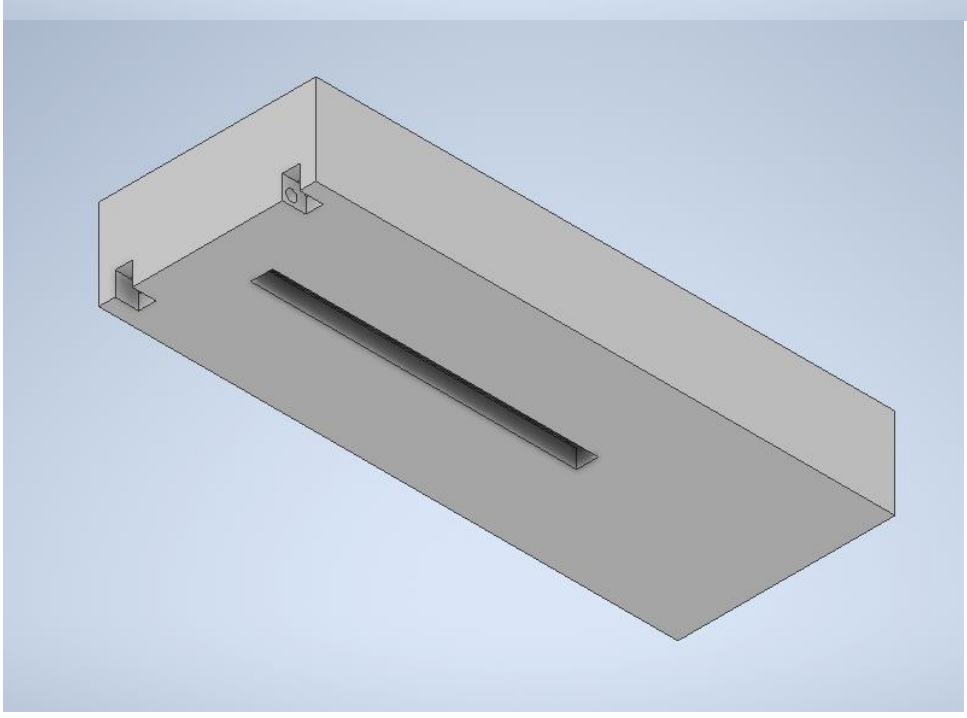




Team Number: Tues-33

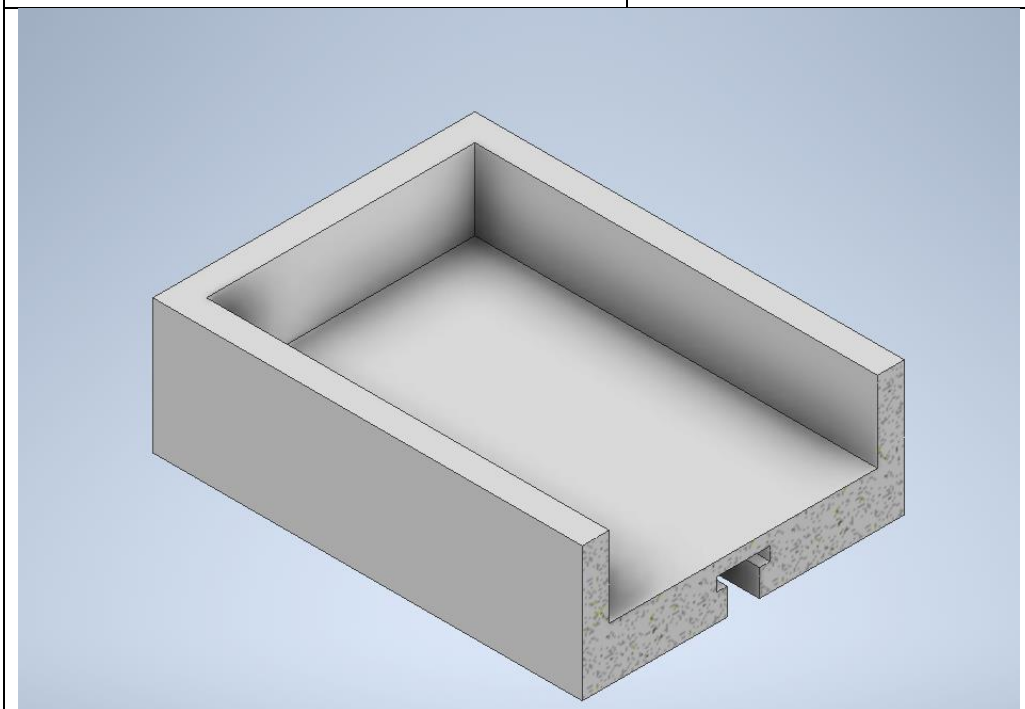
Name:	MacID

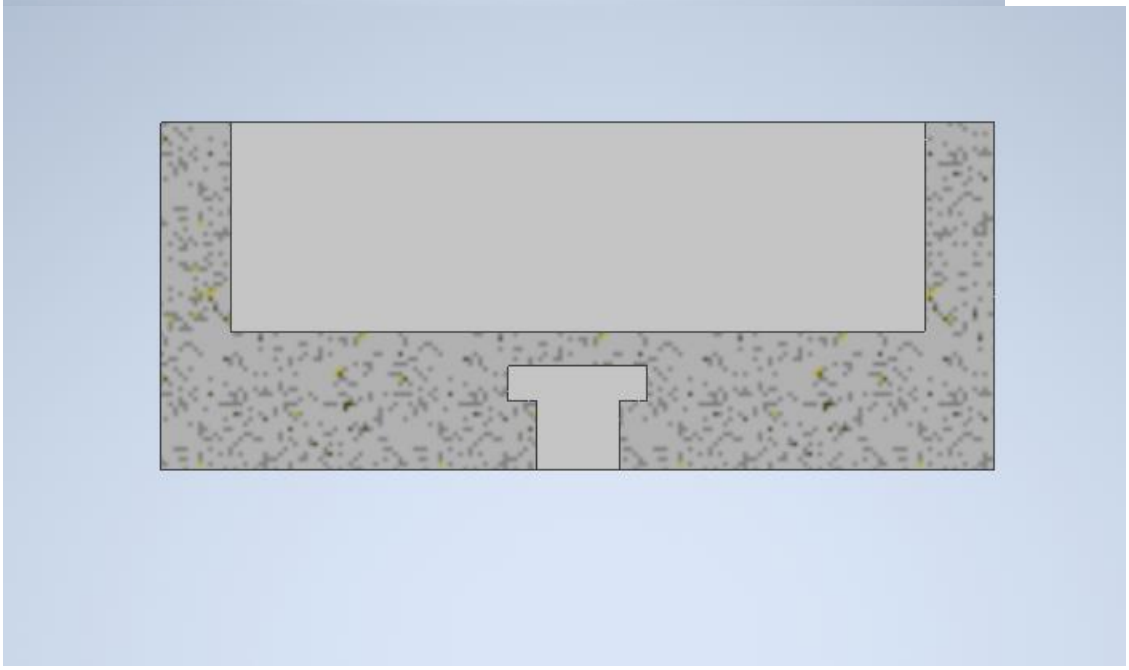




Team Number: Tues-33

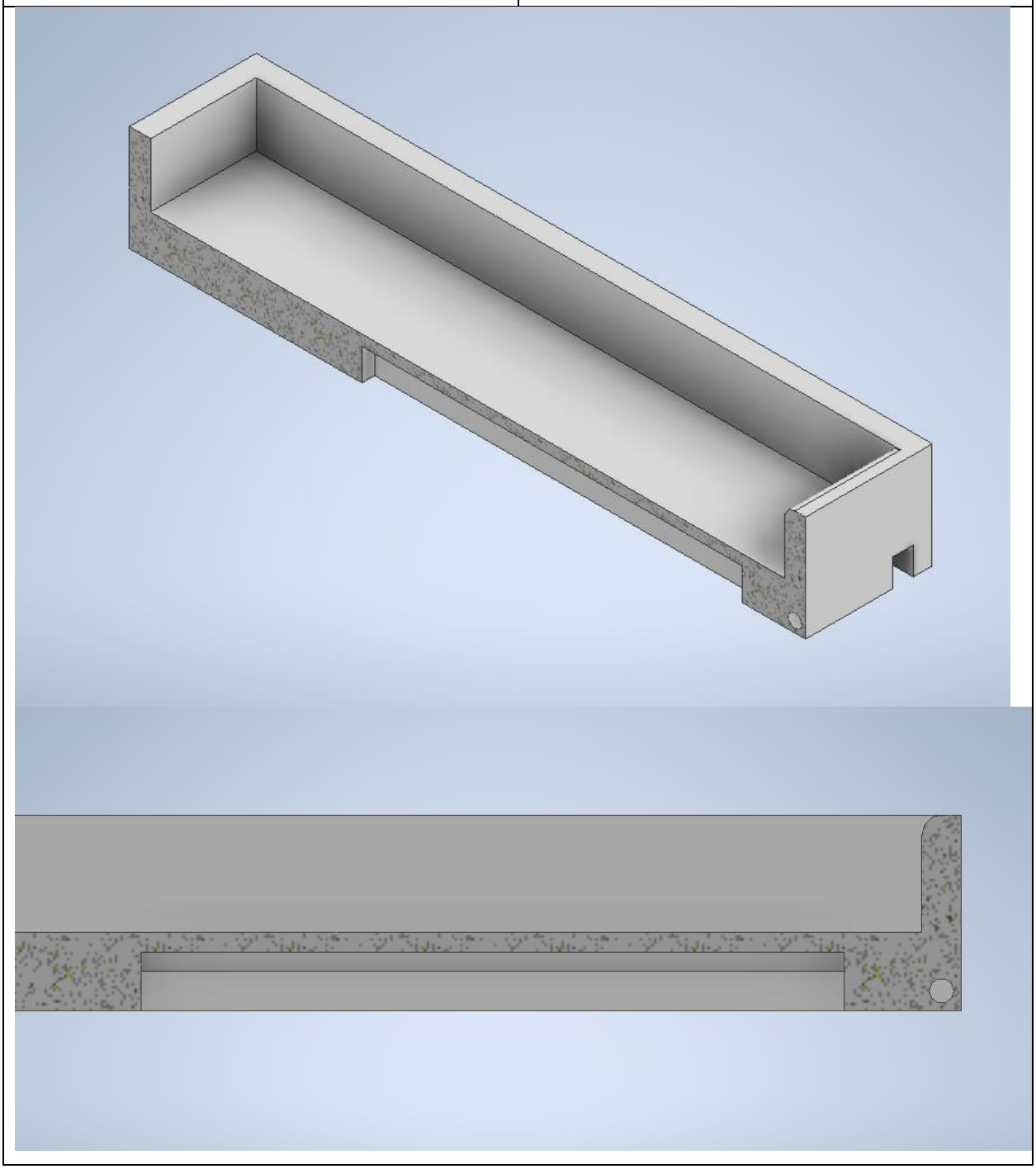
Name:	MacID





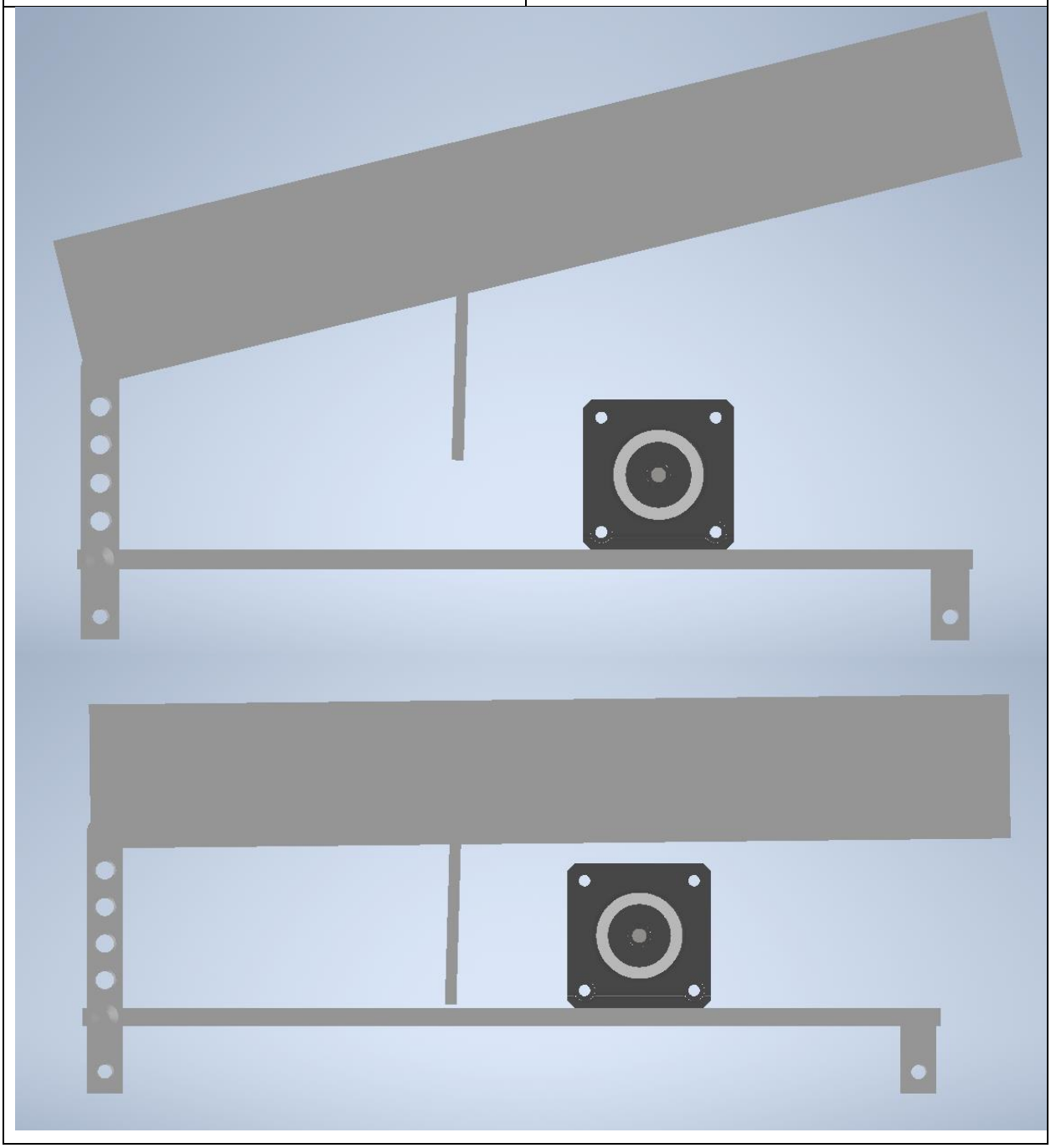
Team Number: Tues-33

Name:	MacID



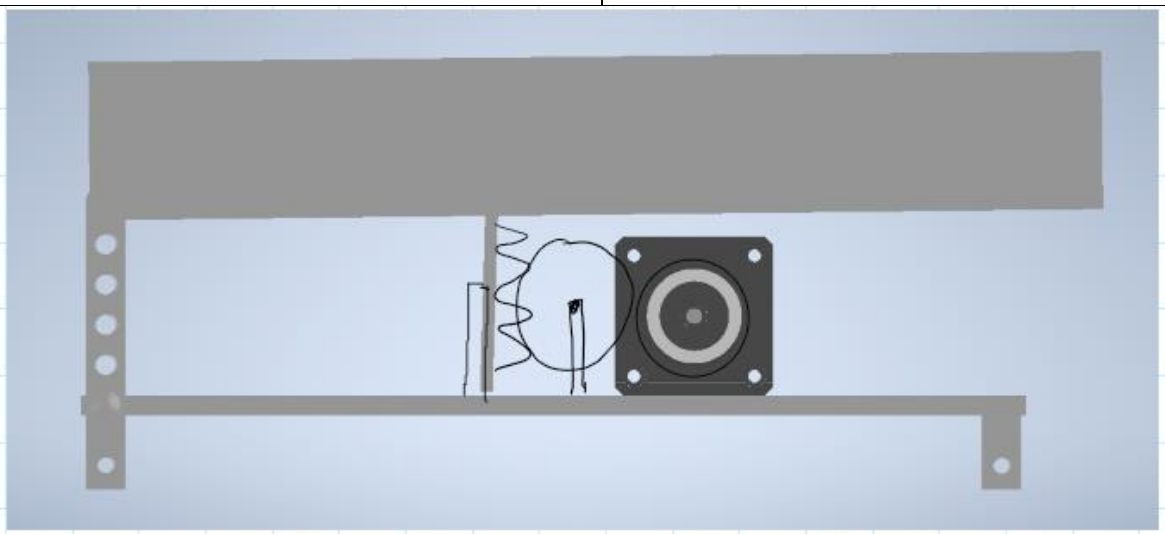
Team Number: Tues-33

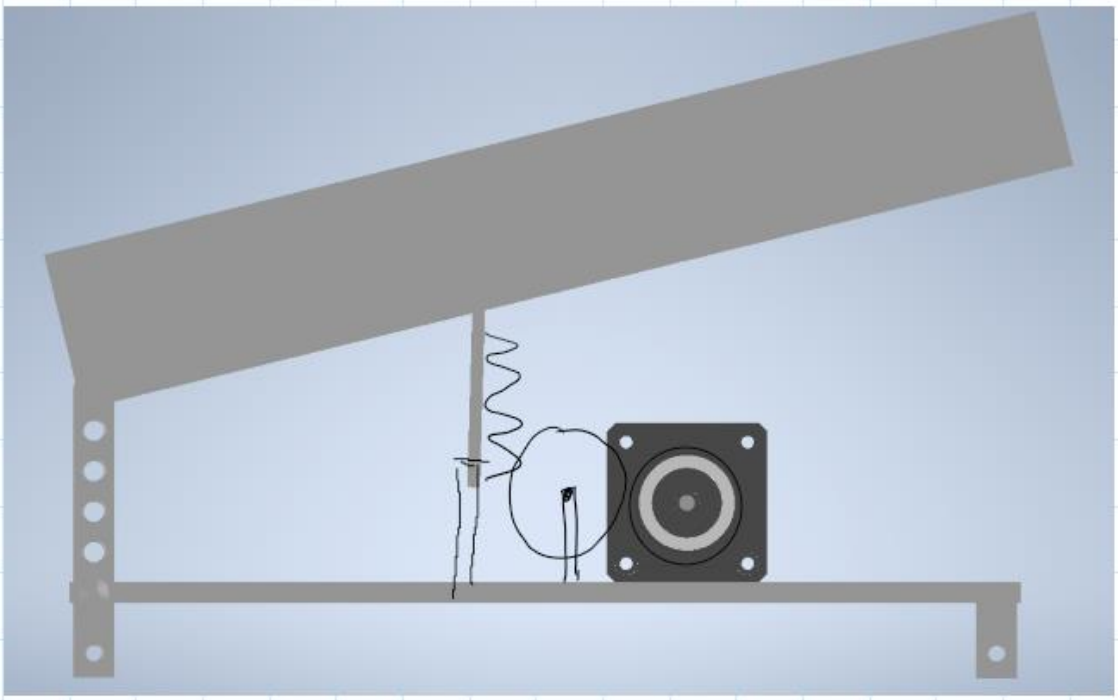
Name:	MacID



Team Number: Tues-33

Name:	MacID





Team Number: Tues-33

Name:	MacID