MILESTONE 2 (STAGE 1) – SENSOR RESEARCH (COMPUTATION SUB-TEAM)

Team Number: | Fri-18

Complete this worksheet individually *before* coming to Design Studio 14.

1. Each team member is expected to research 3 types of sensors for characterizing bins
   → Refer to Table 3 of the Computation Sub-Team Objectives document
2. For each sensor:
   → Briefly describe how the sensor works
   → Indicate the attribute you would measure to characterize each bin (refer to Table 4 of the Computation Sub-Team Objectives document)
1. Complete your sensor research on the following page
   → Be sure to clearly write your Team Number, Name and MacID

At the beginning of Design Studio, we will be asking that you copy-and-paste the tables into the **Milestone Two Team Worksheets.** It does seem redundant, but there are valid reasons for this:

- Each team member needs to submit their sensor research with the **Milestone Two Individual Worksheets** document so that it can be *graded*
- Compiling your individual work into this **Milestone Two 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

Team Number: Fri-18

Name:	MacID:

Sensor Type	Description	Attribute(s)

MILESTONE 2 (STAGE 2) – CONCEPT SKETCHES (MODELLING SUB-TEAM)

Team Number: | Fri-18

Complete this worksheet individually *before* coming to Design Studio 14.

1. Complete your sketch on a separate sheet of paper
   → Be sure to clearly write your Team Number, Name and MacID
2. Take a photo of your sketch
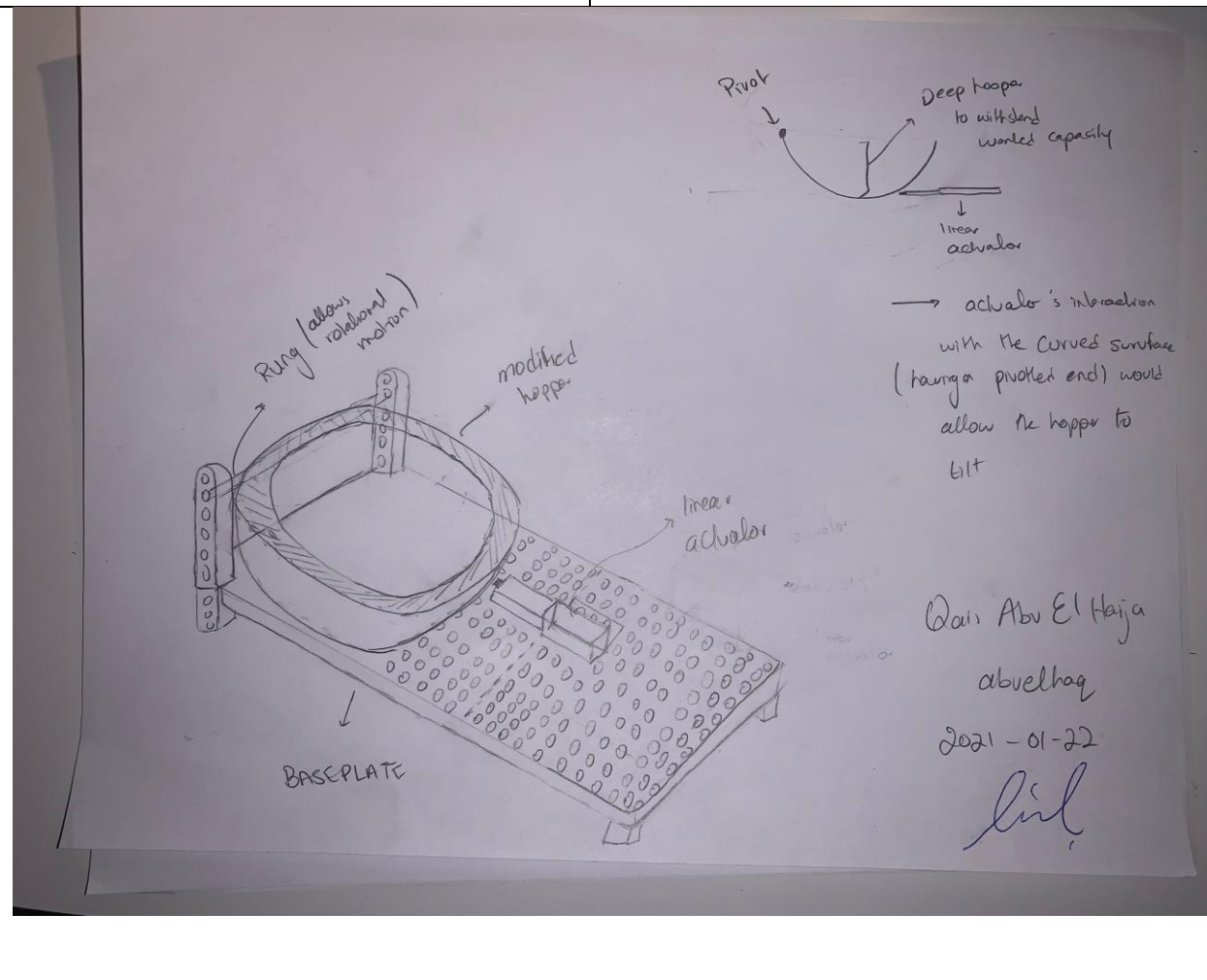3. Insert your photo as a Picture (Insert > Picture > This Device)

At the beginning of Design Studio, we will be asking that you copy-and-paste the same photos into **Milestone Two Team Worksheets.** It does seem redundant, but there are valid reasons for this:

- Each team member needs to submit their concept sketches with the **Milestone Two Individual Worksheets** document so that it can be *graded*
- Compiling your individual work into this **Milestone Two 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
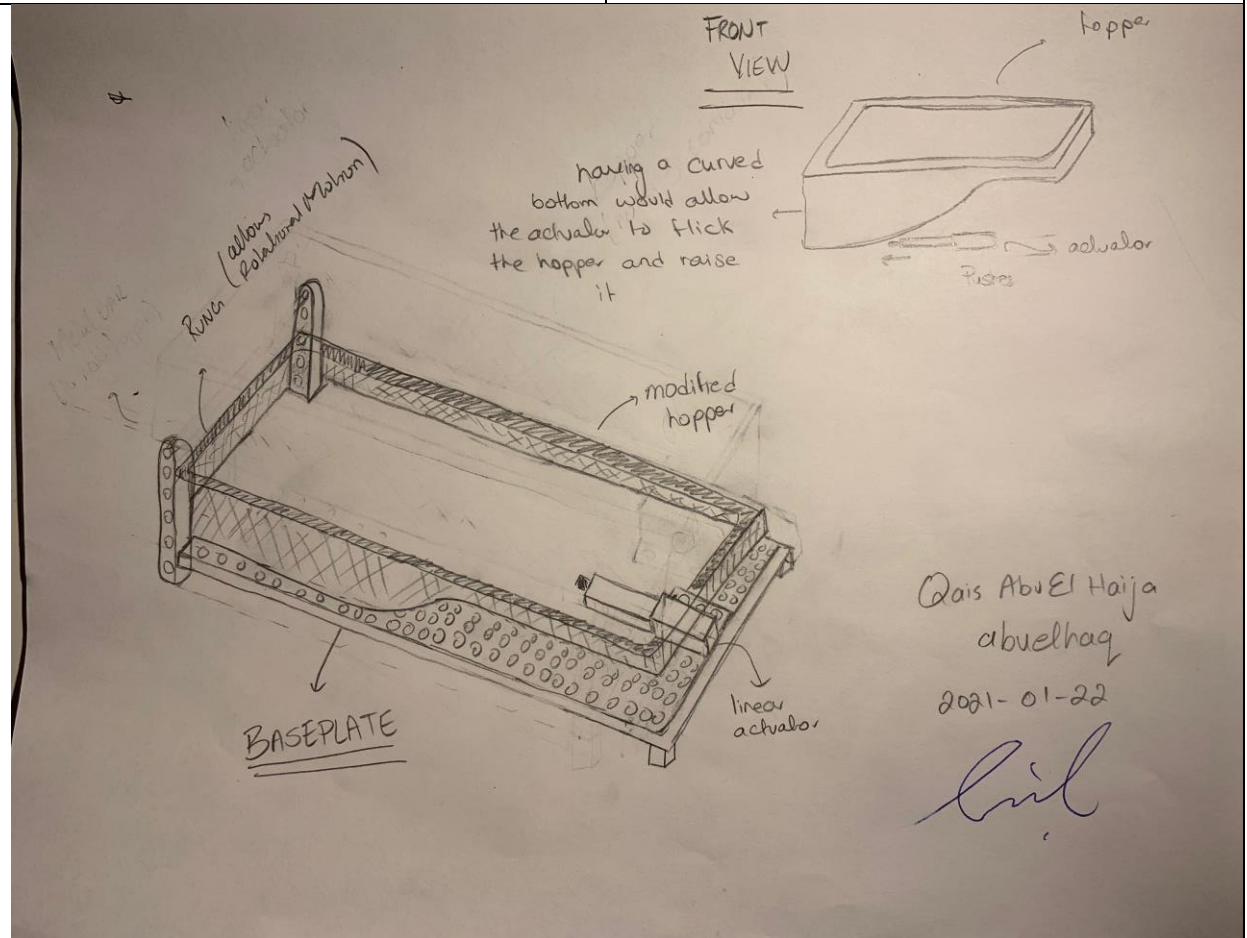
Name: Qais Abu El Haija	MacID: abuelhaq

*For multiple sketches, please copy and paste the above on a new page

Name: Qais Abu El haija	MacID: abuelhaq

FRONT VIEW

hopper

having a curved bottom would allow the actuator to flick the hopper and raise it

actuator

Piston

modified hopper

Ruler (allows Rotational Motion)

BASEPLATE

linear actuator

Qais Abu El Haija
abuelhaq
2021-01-22

*For multiple sketches, please copy and paste the above on a new page

MILESTONE 2 (STAGE 3) – SENSOR CHARACTERIZATION (COMPUTATION SUB-TEAM)

Team Number: | Fri-18

Please complete this worksheet in your corresponding team document.

MILESTONE 2 (STAGE 4) – DECISION MATRIX (MODELLING SUB-TEAM)

Please complete this worksheet in your corresponding team document.

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

Team Number: Fri-18

Complete this worksheet individually *before* coming 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

> At the beginning of Design Studio, we will be asking that you copy-and-paste your work into **Milestone Three Team 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 the **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:	MacID
*Write out a pseudocode outlining the **high-level workflow** of your computer program in the space below.*	

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

Team Number: | Fri-18

Complete this worksheet individually *before* coming to Design Studio 15.

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

At the beginning of Design Studio, we will be asking that you copy-and-paste the same photos into **Milestone Three Team 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 the **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:	MacID
Insert screenshot(s) of your flowchart or storyboard.	

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

Team Number: | Fri-18

Complete this worksheet individually *before* coming to Design Studio 15.

1. Complete your sketch on a separate sheet of paper
   $\rightarrow$ Be sure to indicate each team member's Name and MacID
2. Take a photo of your sketch
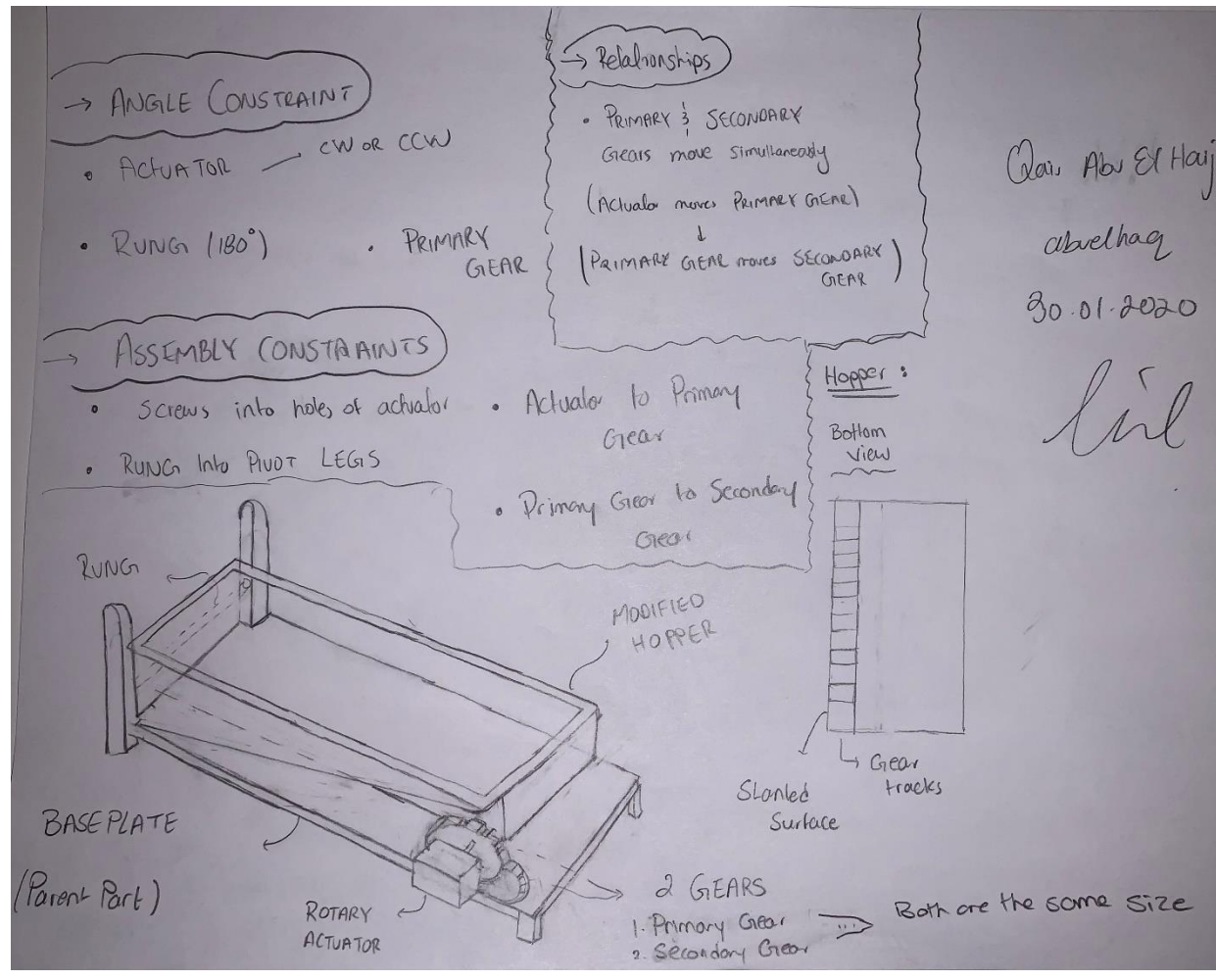3. Insert your photo as a Picture (Insert > Picture > This Device)

At the beginning of Design Studio, we will be asking that you copy-and-paste the same photos into **Milestone Three Team 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

Name: Qais Abu El Haija	MacID: abuelhaq

Insert screenshot(s) of your detailed sketch below.

→ Relationships

- Primary & Secondary Gears move simultaneously

(Actuator moves Primary Gear)
↓
(Primary Gear moves Secondary Gear)

→ ANGLE CONSTRAINT

- ACTUATOR → CW or CCW
- RUNG (180°)   • PRIMARY GEAR

→ ASSEMBLY CONSTRAINTS

- Screws into holes of actuator   • Actuator to Primary Gear
- RUNG Into PIVOT LEGS   • Primary Gear to Secondary Gear

Hopper:
Bottom view

Qais Abu El Haija
abuelhaq
30.01.2020

RUNG

BASE PLATE
(Parent Part)

MODIFIED HOPPER

Slanted Surface

↳ Gear tracks

ROTARY ACTUATOR

2 GEARS
1. Primary Gear
2. Secondary Gear
→ Both are the same size

*For multiple sketches, please copy and paste the above on a new page.

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

Team Number: | Fri-18

Please complete this worksheet in your corresponding team document.

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

Team Number: | Fri-18

Please complete this worksheet in your corresponding team document.