MILESTONE THREE (TEAM): PRELIMINARY MODEL & CODE

PROJECT TWO: MILESTONE 3 – COVER PAGE

Team ID: Mon-16

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

Full Name:	MacID:
Mohammad Bilal	bilalm14
Muhammad Saad Siddiqi	siddim98
Owen Brazel	brazelo
ZIDi Yao	yaoz25
Ibrahim Arif Qadeer	qadeeri

MILESTONE 3 (STAGE 3) – PUGH MATRIX (MODELLING SUB-TEAM)

Team ID: Mon-16

1. As a team, evaluate your designs for the sterilization container in the table below
   → List your Criteria in the first column
      - You should include a minimum of 5 criteria
   → Fill out the table below, comparing your designs against the given baseline
      - Replace "Design A" and "Design B" with more descriptive labels (e.g., a distinguishing feature or the name of the student author)
      - Assign the datum as the baseline for comparison
      - Indicate a "+" if a concept is better than the baseline, a "–" if a concept is worse, or a "S" if a concept is the same

	Datum	Cut Out Design	Hook Design
Holds surgical tool	S	S	S
Facilitates sterilization of surgical tool	S	S	S
Secures tool while container is shifted	S	-	-
Allows condensed steam to exit container	S	S	S
Tool can effortlessly be collected from container	S	-	+
Can easily be picked up by the Q-arm	S	+	-
Total +	0	1	1
Total –	0	2	2
Total Score	0	-1	-1

*For a team of 3, click the top-right corner of the table to "Add a New Column"

2. Propose one or more suggested design refinements moving forward

The two significant design refinements that can made to improve the design moving forward is the addition of an upper cover and additional holes. Firstly, the datum had upper caps for all the tools that it retained which provided better stability. Hence, we decided to add an upper cap or cover on our designs, so the tool does not vertically dislodge out of the secure holding position while the container is being shifted. Secondly, the datum had countless number of holes all around which enables more exposure to steam. Therefore, we decided to add additional holes around our designs so the steam can cover maximum surface area.

MILESTONE 3 (STAGE 4A) – CODE PEER-REVIEW (COMPUTATION SUB-TEAM)

Team ID: Mon-16

Document any errors and/or observations for each team member's preliminary Python program in the space below

Pick Up Container	**Team Member Name**: Ibrahim Arif Qadeer
Enter code errors and/or observations here - Container size wasn't considered when closing the grippers - Needs time.sleep() in order for the arm to perform the function or else everything will run at once and nothing will happen	

Rotate Q-arm Base	**Team Member Name**: Mohammad Bilal
Enter code errors and/or observations here - *Code for checking colour of container could be made into a separate function* - Reset degrees_L and degrees_R to 0 when arm returns to home	

Rotate Q-arm Base	**Team Member Name**: ZiDi Yao
Enter code errors and/or observations here - *Time.sleep() wasn't taken into consideration*	

MILESTONE 3 (STAGE 4B) – PROGRAM TASK PSEUDOCODE (COMPUTATION SUB-TEAM)

Team ID: Mon-16

As a team, write out the pseudocode for each of the *remaining* tasks in your computer program in the space below.

Drop Off Container & Return Home

```
Def drop_off_container(container_id):
        If left potentiometer is > 0.5 (container is small):
                Place container on top of autoclave
        Else if left potentiometer is < 0.5 (container is large):
                Open autoclave drawer
                Place container inside
                Close autoclave drawer
        Return q arm to home position
        Deactivate autoclaves
```

Continue or Terminate Program

```
Moved_containers = a list of containers that have been moved
Def continue_or_terminate(moved_containers):
        If (moved_containers.size() == 6):
                Terminate program
        Else:
                Don't terminate program
```

MILESTONE 3 (STAGE 5) – DESIGN PITCHES

Team ID: Mon-16

Modelling Sub-Team Preliminary Design

Use the space below to document feedback for your design.

- The feedback given for our design encouraged an idea for our container to be easily picked up by the Q-arm.
- A suggestion for improvement was to find further means of facilitating sterilization for our container.

Use the space below to propose further design refinements based on the feedback.

- Based on our feedback, we decided to add a lip on the edge of the container so the Q-arm can easily grab the container.
- Based on our feedback, we decided to create additional holes on the bottom face of our container to allow more steam to enter.

Computing Sub-Team Preliminary Design

Use the space below to document feedback for your design.

- Make smoother movement

Use the space below to propose further design refinements based on the feedback.

- Decrease sleep time