PROJECT TWO: MILESTONE 4 – COVER PAGE

Team Number: Thurs-23

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

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MILESTONE 4 (STAGE 3) – DESIGN REVIEW FEEDBACK (MODELLING SUB-TEAM)

Team Number: Thurs-23

Use the space below to document mentor feedback for your design.

We showed TA our current model during the meeting and how it fits the 3D printer, and we received a Go with a warning at the end of the meeting. There are some points our TA mentioned that we could improve on:

1. Remove the handle or try to add supports to it when doing the 3D printing.

   <1> Our model may have to remove the handle because it can go over the autoclave dimension limitation. To do that, we have to consider the size again to avoid any possibilities that could end up with unfitted dimensions.

   <2> There is a problem related to the design when it is 3D printed. The 3D printer cannot build things without the bottom layer, so we must build support to the handle in order for the printer to work probably. We could also remove the handle so that it will not affect the result and save time on printing.

2. Trying to find a way to fit the drawer or keep it not to drop off. It does not affect a lot but better consider making a change.
3. Create the autoclave model from the image to test whether our final design fits into the autoclave.
4. Finally, better to constrain the assembly model before submission.

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

We decide to adjust our modelling parts to meet the expectations of our TA. Firstly, we want to get rid of our handle so that it will not affect the process while printing. We have thought about adding supports to it, but it will end up elongating our printing time, so we give up this idea. By doing this, we should consider more on the constrain because the drawer cannot pull out without a handle. Moreover, we will work on creating our autoclave model for testing our final design. It is an essential step for us to know whether our design fits our expectations. Finally, before we submit our final design, we should check whether our design is fully constrained or not. We should keep the drawer moving only in one direction and not overlap with any part of the shell.

MILESTONE 4 (STAGE 3) – DESIGN REVIEW FEEDBACK (COMPUTATION SUB-TEAM)

Team Number: Thurs-23

Use the space below to document mentor feedback for your design.

Although we received a GO from our TA during our design review as our code successfully executed a single cycle of pickup, transfer and drop off of a single container, our TA mentioned to make the following adjustments to our code to further improve it and fit the rubric expectations:

- Rather than passing arm.emg_right() and arm.emg_left() to the variables left and right, our TA stated that rather we should include the actual commands.
    - For example, we should include "if arm.emg_right() > threshold instead of if right > threshold"
- We should make an additional function to close the autoclave drawer. We originally had it attached to our gripper function, but it was suggested that we define a new function to close the drawer and call that in the main function instead
- We should also have the code randomly spawn the container for us instead of manually inputting a number di which container will be spawn. This will be adjusted in our main function.
- We must define a main function. We had a main function, but we did not define it. It was suggested that we define the main function then call it afterwards.
- Finally, we were told to make sure that the q-bot arm returns home before proceeding to the drop off location so that it does not hit the autoclave bins when moving from the pickup location to the respective drop off locations.

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

We have and will continue to make adjustments to our program to ensure that we can have it run properly while meeting all expectations. We have started by incorporating the arm.emg_right() and arm.emg_left() commands directly into the functions that utilize them rather than passing these commands through the variables left and right. Additionally, we have created a new function to close the autoclave bins. Moreover, we adjusted our code so that the q-bot arm returns home after it has picked up the container and before it goes to the drop-off location. We have done so by using the move end-effector function and passing the argument home, with its' respective coordinates, instead of using arm.home() so that the gripper does not release the container on its' way to the home location. We then started defining a main function and getting rid of our input statement for the container spawned. We are still working through the details of this, but we are working towards a better program. Specifically, we are working to obtain a program that will randomize the spawning of the containers and loop through a cycle for each container without repeating containers on its own without any input needed. By adjusting some of these things we have run into many errors and roadblocks but after attending a few office hours we should be able to properly refine our code to ensure that every container makes it to the proper location.