Final Demo Instructions

Final demo day: April 12th, 2023
Final demo location: In-person, Trottier 0110,

Each team will be given **one attempt to demo the final system** in person during the demo day that will be graded using the rubric below. Teams are welcome to video record their demo attempts for their own bragging rights or to reflect on their demo performance as a team later. A **up to three members** of the team must be physically present to demo the team's design on the team's behalf.

Your team should plan to arrive a few minutes before your team's scheduled demo slot (see Preparing for the demo note below). Teams will receive a grade of 0 for the demo if the team representatives do not show up to their scheduled demo slot.

Preparing for the demo:

Each team is scheduled in to a **10-minute time slot**. Given the tight schedule, teams should expect their system to be ready and in working order prior to their demo slot. Teams are encouraged to keep a *checklist* (i.e., list of things they must check before starting their demo, such as checking to make sure the battery is connected, checking wire connections etc.) and use it prior to the demo.

To help you do a final check just prior to your demo slot, two areas will be available for a maximum of 20 minutes: (a) one of the round tables in Trottier 0110 and (b) Trottier 0090 (max. capacity of 1 team at a time plus 1 TA). A TA will call on your team from one of these two areas when it is your turn to demo. You will be allowed to pick up your items from DPM lockers while the demo is taking place. However, only one person will be allowed in for material pick-up in Trottier 0110 at a time.

Each team should bring everything they need to run the demo, including the foam cubes that were distributed to the team.

Final demo procedure:

1. Team members should expect to briefly explain how the system works (or is supposed to work). There will be no PowerPoint/slide presentation (we will not have any projector set-up).
2. The team can place the robot at the Loading Bay and start the program on the robot.
3. A professor will load 6 cubes (in the order: **Red, Orange, Yellow, Green, Blue, Purple**) into area(s)/location(s) of the robot as specified by the team.
4. The team can then trigger the robot to begin the delivery procedure.
5. The robot autonomously attempts to deliver all six cubes corresponding to delivery zones.
6. **Each time the robot completes a delivery** (i.e., drops a cube and starts moving along the path again), a professor will remove the cube towards the scoring of the robot's performance.
7. Prior to the robot's return to the Loading Bay, the team can decide to do a subsequent round of deliveries. Depending on the decision, professors will get ready to load the robot again upon the robot's return.

For teams aiming to do multiple rounds of deliveries:

8. When the robot returns to the Loading Bay, the robot outputs an audio/visual cue should signal the end of the trip.
9. Repeat steps 3, 4, 5.
10. The demo finishes when 5 minutes have elapsed after the first triggering of the robot (Step 4).

Important Notes:

- **If a team fails to start**, or the robot clearly fails (e.g., somehow veers off from the map drastically) **within the first 5 seconds into the start of the demo**, the teams may re-start the system. Only the final run of these re-attempts to start the demo will be scored. However, if the robot fails to successfully start within the first 5 minutes of the team's scheduled demo slot, no more re-attempts will be allowed.

- Apart from triggering of the robot to begin the delivery procedure, the team cannot manipulate or adjust the robot, cubes, or the program. Otherwise, there is a penalty score as listed in the rubric below.
- **Quality of delivery**: Each coloured cube must be delivered **inside** the delivery zone of the matching colour. Cubes delivered outside the zone will not be counted.

Grading rubric for the demo (__/13; 13% of final grade)

The system performance scores from the best of the two attempts will be used as the final demo grade.

System requirements: ____/7

- (1 pt) All six cubes can be loaded onto and carried by the robot at any given time.
- (1 pt) Locations/areas to load the cubes are clearly indicated.
- (2 pt) The robot successfully returns to the Loading Bay at least once in 5 minutes.
- (1 pt) Upon arriving at the Loading Bay, the robot clearly signals its readiness for more cubes (e.g., audio/visual cues).
- (2 pt) When the robot returns to the Loading Bay, the robot is empty of all six cubes.

Performance Score (max 6 points) = 1 x (# of cubes delivered correctly) - 2 x (# of cubes delivered to the wrong address) - 2 x (# cubes not delivered) - 0 x (# of cubes delivered outside the delivery zone) + (sum of all penalty points)

# of Cubes Delivered Correctly	**# of Cubes Delivered to the *Wrong Address***	**# of Cubes *not Delivered*** (i.e., cubes remaining on the robot by the time the robot returns to the Loading Bay)	**Penalty points**	**Performance Score:**
+1 point / cube	-2 points / cube	-2 points / cube	-2 point / penalty action	

Penalty points:

- -2 point for each time team member touches the system/cube after initiating the delivery trip