

Experiment Guidelines

Read our guidelines carefully before proceeding to the experiment, and feel free to ask us any questions that you may have regarding our study.

In this experiment, you will implement a robot application using the ABB Wizard Easy Programming Tool, a block-based programming language for collaborative robots. You will be requested to write a software solution that allows customers to sort coffee cans among two can organizers using a collaborative robot. The cans, organizers and the robot will be placed on the same table. The robot will be configured with pre-defined robot positions to reach both organizers, and such positions will be available for use in the programming language. Two flavors of coffee will be randomly placed by a stocker in each organizer: Kona and Original. The organizing actions of the robot should be dictated by customers, as the order of the cans in each organizer will be random.

Follow the software requirements below to guide your software implementation. Your block-based solution will be considered valid if it follows all the requirements stated below.

Software requirements:

- ☐ Your software must start calling the *StartGripper* procedure to activate the robot gripper.
- ☐ Your software should only use the features available in the block-based language.
- ☐ Your software should also only use the robot positions available in the block-based language. You should not create new robot positions for your solution, but you are free to instantiate as many other types of variables as necessary.
- ☐ Your software must receive the customer's input to decide what actions the robot should take next.
- ☐ Customers should be informed about what actions the robot is performing.
- ☐ Customers must be allowed to move the coffee cans from one organizer to the other, or to the last position of the same organizer, as they wish and at any time, while your application is running.
- ☐ Customers should not interact directly with your code, including but not limited to moving your blocks and editing variables.
- ☐ Your software should be written within a single file, created for you beforehand by a proctor of the experiment. You should not create or load other files in the programming environment, or even rename the one opened for you.

A few notes for you as a participant in this experiment:

- You will have one hour to complete the experiment, with a possible extension of twenty minutes if necessary.
- You are free to end your participation in our experiment at any time, even if you do not complete the assignment given.

- You should not interact with the robot physically or with any other software applications installed on the FlexPendant. Your focus should be concentrated only on the block-based environment and the task assigned to you.
- Throughout the experiment, a computer will be available for you to request assistance with your assignment. On this computer, you will find an application running with textbooks, videos, and a chat space with an expert. Feel free to use these resources as much as you want.
- Don't close the application running, nor look for other resources on the computer.
- Before getting access to the resources page on the application, you will be requested to inform what type of question/problem you are facing. Please, close the request every time you complete a question/problem, and start another one when necessary.
- Once you complete your participation, you will be invited to complete a post-experiment questionnaire about your experience with our experiment. The proctor will also inform you about the completeness of your solution.