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RWA-3: Picking up a part from the conveyor belt

ENPM809B : Spring 2020
Due **Wednesday, March 11, 2020**

Contents

Assignment

The goal of this assignment is to:

1. Read an order.
2. Identify the products (parts) that constitute the order.
3. Pick up one of these products from the conveyor belt.

Instructions

- Write a ROS package that is capable of:
  1. Starting the competition.
  2. Reading and storing order data.
     - You need to be able to store order, shipment, and product data.
  3. Reading and storing sensor/camera data.
     - Choose any sensors/cameras you want to place over the conveyor belt to capture data on moving products.
     - You are free to use as many sensors/cameras as you wish.
  4. Grasping only one product from the conveyor belt.
     - The product should be part of the order.
     - You must use sensors/cameras to identify the product on the belt.
     - Use one of the two robots to grasp the product.
- You can reuse the package ariac_manager for this assignment.

Grading Rubric (15 pts)

3 pts– Reporting sensors/cameras data:

- 0 pt: You did not use any sensors/cameras to identify the product.
- 1.5 pts: You used sensors/cameras but you did not use these data to grasp the product.
- 3 pts: You used sensors/cameras to grasp the product.

5 pts– Grasping a product from the belt:

- 0 pt: Your robot did not grasp a product from the belt.
- 2 pts: Your robot grasped a product from the belt but this product is not part of the order.
- 5 pts: Your robot grasped a product from the belt and this product is part of the order.

3 pts– Before submission make sure the name of your package is: **groupName_RWANumber**.

- For instance, for this assignment, group 1 should have the package **group1_rwa3** in their workspace.
- Zip this package and upload it on Canvas.
  - 0 pt: Package not named appropriately.
  - 3 pts: Package named per instructions.

3 pts– Provide a video showing a robot grasping a product from the belt.

- 0 pt: You did not provide a video.
- 3 pts: You provided a video.

1 pt– Provide instructions on how to run your program through a Readme.txt, located inside your package.

- 0 pt: No Readme.txt.
- 0.5 pts: Readme.txt provided but instructions do not work.
- 1 pt: Readme.txt provided and instructions do work.