Josh Fram – jpf2141
Alex Barkume – ajb2233

User Stories

Title: Load Washing Machine
Description: The robot will take the clothes from the hamper, and load it into the washing machine. The robot will add the requested detergent, close the washing machine door, select the settings, and start the machine.

Title: Switch Clothes from Washer to Dryer
Description: The robot will ensure that the wash cycle is complete, and remove the clothes from the machine. It will then shake out the clothes, and put them into the dryer. It will then close the dryer door, select the settings, and start the machine.

Title: Remove and Fold Clothes
Description: The robot will ensure the drying cycle is complete, and remove the clothes from the machine. It will then fold the clothes, and put them back into the hamper.

Title: Deliver Laundry
Description: The robot will ensure all the clothes have been placed in the hamper (i.e. none are on the floor) and bring the hamper to the user's room.

Assumptions

- washing machine starts out empty.
- drying machine starts out empty
- the robot is waterproof and can deal with wet clothing
- the robot has the capability to turn on and operate the washing machine
- the robot has the capability to turn on and operate the dryer

Questions

Question: Does the customer want their clothes separated into whites and darks?
Answer: No, mixing is ok!

Question: Does the customer want their laundry delivered? If so, to what location?
Answer: Yes, to my room.

Question: How long should a laundry cycle take?
Answer: Less than two days would be ideal, three days is my limit.

Question: What settings on the washing machine do you prefer?
Answer: Perm press warm.

Question: What settings on the dryer do you prefer?
Answer: Medium temperature.

Tasks

Title: Load Washing Machine
Description:
Implement a Robot class with variables: washing machine location, dryer location, room location, and user settings.
Implement a method to move the robot to the start location and open the laundry machine door.
Implement a method to determine if there is a full load of laundry that needs to be done.
Implement a method to insert detergent into the machine.
Implement a method to start the machine and enter the correct settings.
Dependencies:
This is dependant on a properly functioning interface with the laundry machine.

Title: Switch Clothes from Washer to Dryer
Description:
Implement a method to allow the robot to make sure the washing machine has completed its cycle.
Implement a method that allows the robot to remove clothes from the washing machine and put them into the dryer.
Implement a method to check if the washing machine is fully empty.
Implement a method to shake out the clothes.
Implement a method to turn off washing machine.
Implement a method to close the dryer door and select the settings.

Title: Remove and Fold Clothes
Have robot utilize Datetime class so that it knows when the dryer is done.
Modify the closing the wash machine method by adding a feature to to open the wash machine.
Modify the method to remove clothes from the washing machine to allow the robot to remove clothes from the dryer.
Implement a method so that when it removes the item, it scans over the item, and if there are more wrinkles per square inch than desired (reference user settings variables), put if off in a separate pile.
Implement a method to use its arms to fold the clothing item and put it in the pile.
Dependencies: Methods including opening washing machine and removing clothes from washing machine (from Switch Clothes from Washer to Dryer task).

Title: Deliver Laundry
Implement a method to have the robot use its arms to pick up the pile of folded laundry.
Implement a method to allow the robot to locate and drive on its wheels to that the room while holding the pile of laundry.
Implement a method to allow the robot to unload the laundry.
Implement a method to allow the robot to return to its original location.
Dependencies: Working path finding algorithm, dependable use of arms.