Snack Helper - Getting Your Food So You Don’t Have To!

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What and Why

- Snack Helper is a robot designed to help you stay focused (or lazy) by delivering snacks to you from anywhere in your home.
  - You tell it what kind of snack you want and where to deliver it to, and it fetches the snacks for you.
- We used the Freight robot, as we wanted something mobile that wouldn’t be too obtrusive to have in your home.
- In the real world, it would have a bowl attached to carry snacks.
  - We simulate a bowl. The robot only has access to its internal state, and the amount of snacks in the bowl.
Our Environment

- Snack dispensers are scattered around a house, the Robot must move under them and request for snacks to be dropped into its snack bowl.
  - We made this realistic by accounting for the delay of the snacks falling.
  - Have to stop early or risk overfilling the bowl!
  - Robot must also be able to navigate around walls/obstacles.
How To Use

- We designed a webpage that allows the user to send instructions to the robot over the internet.

Snack Helper

Insert the coordinates you would like the robot to travel to

- x coordinate
  - 0.00

- y coordinate
  - 0.00

Which Snack would you like?

- Pretzels

Submit Coordinates
How It Works

- Robot is in waiting state.
- User sends movement command to robot via web interface.
- Robot looks up the snack dispenser’s position from a map, and moves there using the ROS navigation stack.
- Robot waits under the snack dispenser for just long enough to fill the bowl entirely.
  - We record how long the dispenser has been dropping snacks, and stop after a duration calculated based on the drop rate and time until the snack hits the bowl.
- Robot moves to desired end position, enters waiting state.
Questions?

Thank you for listening!