Warehouse AGV

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Objective

Develop a collection robot, which is able to identify and collect objects for ACME Robotics. The robot needs to ientify packages, localize and navigate autonomously in an industrial setup/warehouse.
User needs to provide an approxiamte pickup and srop-off location for the package.
The final output will be the simulation of this task alongside a demonstration.

Methodology

SLIC allgorithm : Superpixeling
Software Development practices : Agile Iterative Process (AIP), Test Driven Development (TDD).

Software Testing: Unit testing using GTest and ROSTest.
Valgrind for checking memory leaks and profiling
GithubCI for code integration and Coveralls for codecoverage
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Specific Approach

> Robot Used: PAL Robotics TIAGo Robot
>Object Detection: Image Segmentation using OpenCV libraries
>Navigation: Navigation2 ROS 2 Library
>Manipulation: MoveIt 2 ROS 2 Library

Key Milestones

Formalize the design	11/30
Setting up the repo and other dependencies with the integration of Travis and coveralls	12/2
UML update and stub creation	12/4
Class Implementation	12/6
Design unit tests	12/8
Checking the test cases	12/10
Check for errors	12/11
Final update of the activity diagram and class diagram, and the readme file	12/13