**Faculty of Engineering and IT  
School of Mechanical and Mechatronic Engineering  
41069 Robotics Studio 2**

WaitForMe

Client: Tom Ugly’s Art Gallery

Project Team:

|  |  |  |
| --- | --- | --- |
| **Full Name** | **Student ID** | **Expertise** |
| Andrew Goode | 13852898 | WSL |
| Issy Pitt | 14040354 | Rover Team Lead, Assistant Robotics Engineer, Raytheon GradX, |
| Hallie Robins | 14253583 | Systems Integration Engineer |
| Thomas Dodgson | 13887791 | Being funny (situational) |

# Overview

Tom Ugly’s Art Gallery has tasked us with the automation of providing drinks to customer at the art gallery while they wait at tables. They have asked us to come up with a solution that utilises a TurtleBot design with multiple robots to delivery drinks in unison whilst avoiding objects and humans in the environment.

# Aims

1. Create a simulated environment of the Art Gallery, tables and drinks station.
2. Simulate at least 2 TurtleBot moving between the drinks station and the tables whilst avoiding objects.
3. Simulate 2 TurtleBot’s avoiding humans moving in the environment.
4. Implement functionality onto real TurtleBot’s.
5. Delivery drinks without dropping or spilling drinks during transportation

# Resources

Describe the resources required to complete the project. This includes: the robotics hardware & software available in the Lab, additional hardware & software you might need to source yourself, fabrication access (3D printing, laser cutting, etc.).

* Minimum of 2 TurtleBot’s for use in the lab
* ROS2 and gazebo

# Subsystems and Responsibilities

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| --- | --- | --- | --- |
| **Subsystem** | **Description** | **Lead by** | **Supported by** |
| SLAM, Path Planning and Object Avoidance |  | Andrew | Tom |
| TurtleBot Movement Logic |  | Issy | Hallie |
| Simultaneous TurtleBot Operation |  | Hallie | Issy |
| Software to Hardware Integration |  | Tom | Andrew |

# Evaluation

Additional information and clarification can be added here.

|  |  |  |
| --- | --- | --- |
| Subsystem 1 | | |
| P |  |
| C |  |
| D |  |
| HD |  |
| Extension |  |
| Subsystem 2 | | |
| P |  |
| C |  |
| D |  |
| HD |  |
| Extension |  |
| Subsystem 3 | | |
| P |  |
| C |  |
| D |  |
| HD |  |
| Extension |  |
| Subsystem 4 | | |
| P |  |
| C |  |
| D |  |
| HD |  |
| Extension |  |