|  |  |
| --- | --- |
| Use Case 1 | Robot navigation to point A |
| Actors | Robot, bartender, people in bar |
| Use Case Overview | The robot must move to point A. It finds its location. It then finds its target location and then it moves to it while avoiding obstacles and regarding people in its path and its cargo. |
| Subject Area | Café. |
| Trigger 1 | The robot has a task assigned to it |
| Precondition 1 | The robot is idle |

# Use Case Scenario – Robot Navigation

## Basic Flow: Move

|  |  |
| --- | --- |
| Description | This scenario describes the situation when there are no obstacles in the way. This is the main success scenario. |
| 1 | Robot gets task |
| 2 | Robot figures out how to get to its destination |
| 3 | Robot moves to location |
| 4 | Robot arrives at its destination |

Alternative Flows

### 3A: Robot path blocked by person

|  |  |
| --- | --- |
| Description | This scenario describes the situation when there is a person blocking the robot’s path. |
| 3A1 | The robot asks politely for the person to step aside |
| 3A2 | The person moves to the side |
| 3A3 | The robot apologizes for the inconvenience |
| 3A4 | The robot continues |
| Termination outcome | Person that is blocking the robot is out of the way and the robot continues its way. |

### 3B: Person blocking path does not move

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| --- | --- |
| Description | This scenario describes the situation when the person blocking the robot’s path is not moving after a predefined timeout. |
| 3B1 | The robot asks politely for the person to step aside |
| 3B2 | The person does not move |
| 3B3 | If possible, the robot takes an alternate route, else calls a bartender for help |
| 3B3.1 | The bartender arrives and asks the person to move |
| Termination outcome | Person that is blocking the robot is out of the way and the robot continues its way. |

### 3C: Robot path blocked by unidentified object

|  |  |
| --- | --- |
| Description | This scenario describes the situation when there is an unidentified object is blocking the robot’s path. |
| 3C1 | The robot tries to move around the object, if there is no possible path call bartender |
| 3C31.1 | If there is no traversable path notify bartender |
| 3C1.2 | The bartender arrives and cleans up |
| 3C2 | The robot continues |
| Termination outcome | Object that is blocking the robot is out of the way and the robot continues its way. |

### 3D: Robot bumps into unidentified object

|  |  |
| --- | --- |
| Description | This scenario describes the situation when the robot bumps into an unidentified object. |
| 3D1 | The robot notifies the bartender that there has been a collision |
| 3D2 | The robot tries to move around the object |
| 3D3 | If nothing has spilled, the robot continues |
| Termination outcome | Object that is blocking the robot is removed and the robot continues its way. |

### 3E: Robot bumps into person

|  |  |
| --- | --- |
| Description | This scenario describes the situation when the robot bumps into a person. |
| 3E1 | The robot notifies the bartender that there has been a collision |
| 3E2 | The robot apologizes to the person |
| 3E3 | The robot asks the person to step aside |
| 3E4 | If nothing has spilled, the robot continues |
| 3E4.1 | If something has spilled, refer to the Robot Spilling Contents of Order Use Case |
| Termination outcome | Person that is blocking the robot is out of the way and the robot continues its way. |

# Use Case Flow – Robot Navigation

