**Test cases**

Consider the sprint task #26 **Test loading file process**. Some of the test cases for this task are as follows:

|  |  |  |  |
| --- | --- | --- | --- |
| Test case  # | Scenario | Input(s) | Expected output |
| 1 | User click “Load File” button and choose text file. File contents are meaningful. | File | System will show the block view based on those file contents |
| 2 | User click “Load File” button and choose text file. File contents are insignificant. | File | System will give appropriate error message. |
| 3 | User click “Load File” button and choose any type file except text file. | File | System will give appropriate error message. |
| 4 | User click “Load File” button and choose multiple text files. | Files | System will give appropriate error message. |
| 5 | File content is invalid. One region has no agent | File | Invalid file |
| 6 | File content is invalid. One region has more than half the number of open spaces | File | Invalid file |
| 7 | File content is invalid. Environment size is invalid | File | Invalid file |
| 8 | File content is invalid. Region id is missing | File | Invalid file |
| 9 | File content is invalid. Agent id is missing | File | Invalid file |
| 10 | File content is invalid. Agent position is invalid, agent is not in open space | File | Invalid file |
| 11 | File content is invalid. Open spaces are not connected | File | Invalid file |
| 12 | File format is not correct | File | Invalid file |

Consider the sprint task #30 **Test algorithm of both moving one step and multiple steps**. Some of the test cases for this task are as follows:

|  |  |  |  |
| --- | --- | --- | --- |
| Test case  # | Scenario | Input(s) | Expected output |
| 1 | The environment has only one region. The region has only one agent. | File, 1 | The algorithm will return array of agent’s trace. Once target list is empty, and agents all go their target, the algorithm will stop. |
| 2 | The environment has only one region. The region has only one agent. | File, N steps(N>1) | The algorithm will return array of each agent’s trace. Once target list is empty, and agents all go their target, the algorithm will stop |
| 3 | The environment has only one region. The region has more than one agent. | File, 1 | The algorithm will return array of each agent’s trace. Once target list is empty, and agents all go their target, the algorithm will stop |
| 4 | The environment has only one region. The region has more than one agent. | File, N(N>1) | The algorithm will return array of each agent’s trace. Once target list is empty, and agents all go their target, the algorithm will stop |
| 5 | The environment has more than one region. Each region has only one agent. | File, 1 | The algorithm will return array of each agent’s trace. Once target list is empty, and agents all go their target, the algorithm will stop |
| 6 | The environment has more than one region. Each region has only one agent. | File, N(N>1) | The algorithm will return array of each agent’s trace. Once target list is empty, and agents all go their target, the algorithm will stop |
| 7 | The environment has more than one region. Each region has more than one agent. | File, 1 | The algorithm will return array of each agent’s trace. Once target list is empty, and agents all go their target, the algorithm will stop |
| 8 | The environment has more than one region. Each region has more than one agent. | File, N(N>1) | The algorithm will return array of each agent’s trace. Once target list is empty, and agents all go their target, the algorithm will stop |
| 9 | The environment has more than one region. Each region has more than one agent. | File, 0 | Nothing will display. Return error message |
| 10 | The environment has more than one region. Each region has more than one agent. | File, 10000 | The algorithm will visit all open spaces in target list and then stop. It will return array of each agent’s trace. |

Consider the sprint task #32 **Test after integrating algorithm and block view**. Some of the test cases for this task are as follows:

|  |  |  |  |
| --- | --- | --- | --- |
| Test case  # | Scenario | Input(s) | Expected output |
| 1 | The environment has only one region. The region has only one agent. | File, 1 | The screen should show agent’s moving trace and the color of trace should change. Once target list is empty, and agents all go their target, the algorithm will stop. |
| 2 | The environment has only one region. The region has only one agent. | File, N steps(N>1) | The screen should show agent’s moving trace and the color of trace should change. Once target list is empty, and agents all go their target, the algorithm will stop |
| 3 | The environment has only one region. The region has more than one agent. | File, 1 | The screen should show agent’s moving trace and the color of trace should change. Once target list is empty, and agents all go their target, the algorithm will stop |
| 4 | The environment has only one region. The region has more than one agent. | File, N(N>1) | The screen should show agent’s moving trace and the color of trace should change. Once target list is empty, and agents all go their target, the algorithm will stop |
| 5 | The environment has more than one region. Each region has only one agent. | File, 1 | The screen should show agent’s moving trace and the color of trace should change. Once target list is empty, and agents all go their target, the algorithm will stop |
| 6 | The environment has more than one region. Each region has only one agent. | File, N(N>1) | The screen should show agent’s moving trace and the color of trace should change. Once target list is empty, and agents all go their target, the algorithm will stop. |
| 7 | The environment has more than one region. Each region has more than one agent. | File, 1 | The screen should show agent’s moving trace and the color of trace should change. Once target list is empty, and agents all go their target, the algorithm will stop |
| 8 | The environment has more than one region. Each region has more than one agent. | File, N(N>1) | The screen should show agent’s moving trace and the color of trace should change. Once target list is empty, and agents all go their target, the algorithm will stop |
| 9 | The environment has more than one region. Each region has more than one agent. | File, 0 | The screen should show error message. |
| 10 | The environment has more than one region. Each region has more than one agent. | File, 10000 | The algorithm will stop. The screen should show agent’s moving trace and the color of trace should change. |

Consider the sprint task #37 **Test after integrating algorithm and graphical view**. Some of the test cases for this task are as follows:

|  |  |  |  |
| --- | --- | --- | --- |
| Test case  # | Scenario | Input(s) | Expected output |
| 1 | User views graphical view of one region in the environment. The region has only one agent. | File, 1 | The screen should show agent’s moving trace and the color of trace should change. Once target list is empty, and agents all go their target, the algorithm will stop |
| 2 | User views graphical view of one region in the environment. The region has only one agent. | File, N steps(N>1) | The screen should show agent’s moving trace and the color of trace should change. Once target list is empty, and agents all go their target, the algorithm will stop |
| 3 | User views graphical view of one region in the environment. The region has more than one agents. | File, 1 | The screen should show agent’s moving trace and the color of trace should change. Once target list is empty, and agents all go their target, the algorithm will stop |
| 4 | User views graphical view of one region in the environment. The region has more than one agents. | File, N steps(N>1) | The screen should show agent’s moving trace and the color of trace should change. Once target list is empty, and agents all go their target, the algorithm will stop |
| 5 | The environment has more than one region. Each region has more than one agent. | File, 0 | The screen should show error message. |
| 6 | The environment has more than one region. Each region has more than one agent. | File, 10000 | The algorithm will stop. The screen should show agent’s moving trace and the color of trace should change. |