 **Faculty of Computing, Engineering and Science**

# Assessment Cover Sheet 2024-25

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| **Module Code:** | **Module Title:** | **Module Team:** |
| CS2S566 | Tool Development for Computer Games | Carl Jones |
| **Assessment Title:** | | **Assessment No.:** |
| Adding Navigation Points to a Level Editor | | 1 |
| **Date Set:** | **Submission Date:** | **Return Date:** |
| 09/10/24 | 14/02/2025 | Within 20 working days |

**IT IS YOUR RESPONSIBILITY TO KEEP RECORDS OF ALL WORK SUBMITTED.**

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| **Marking and Assessment** |
| This assignment will be marked out of **100%**.  This assignment contributes to **50%** of the total module marks. |
| **Learning Outcomes to be assessed** |
| 1. As specified in the validated module descriptor [https://icis.southwales.ac.uk](https://icis.southwales.ac.uk/) 2. To identify the functional and non-functional requirements of a game engine / game design 3. Apply relevant software engineering techniques to develop applications to generate data for use in a game engine |
| *Awarded mark is only provisional: subject to change and / or confirmation by the Assessment Board.* |

# Assessment Task

In this assignment you will expand on the simple level editor you have built up in tutorials. The level editor displays 4 views (top, front, side, and perspective elevations) of a game level, you are tasked with implementing functionality to add and manipulate navigation points. The navigation points indicate locations that a game character or bot can follow and should be exported along with the level.

You will need to implement appropriate controls to allow the user to click in the current level to add navigation points at specific locations. The navigation points should be displayed as coloured spheres rendered at the specified location. The relevant properties of the navigation points should be displayed in the properties panel.

You will need to add appropriate controls to:

• Add navigation points

• Scale navigation points

• Reposition navigation points

• Delete selected navigation points

• Clear all navigation points

• Navigation points should be saved to a file when the level is saved.

• Load any saved navigation points when a level is loaded.

Implementation Guidelines:

• You can use code developed during tutorials as a template for your level editing tool.

• Use ImGui for creating the navigation point interface and controls.

• Store navigation points in an appropriate class or structure.

• Render navigation points as 3D spheres.

• Write navigation points to a file using XML format.

• Consider ease of use for the artist/designer.

Report

Your report must include a user guide and line by line code commentary. It should contain screenshots of your level editor. You should also include full code listing including detailed comments of the files that you have edited, as an appendix at the end of the report. You do not need to include code of the files that you did not change.

Deliverables

1. A zip containing the source code and executable of your implementation. This is to be submitted to Blackboard no later than the submission date shown on the assignment front sheet. Please name your zip file with your enrolment number (e.g. 12345678.zip).
2. A copy of your report also included in your zip file.

**Marking Scheme**

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| --- | --- | --- | --- | --- | --- | --- |
|  | **Fail (0/29)** | **Narrow Fail (30/39)** | **3rd Class / Pass (40/49)** | **Lower 2nd Class / Pass (50/59)** | **Upper 2nd Class / Merit (60/69)** | **1st Class / Distinction (70/100)** |
| code quality 30% |  Very poor code quality |  Poor code quality |  Satisfactory code quality not object-oriented |  Good object-oriented code |  Very good code object-oriented code with use of intuitive classes and structures |  Excellent object-oriented code with use of intuitive classes and structures |
| human computer interface 20% |  Very poor human computer interface |  Poor human computer interface |  Satisfactory human computer interface |  Good human computer interface |  Very good human computer interface |  Excellent human computer interface using |
| line by line  commentary  20% |  Very poor line by line  commentary |  Poor line by line  commentary |  Satisfactory line by line  commentary |  Good line by line commentary |  Very good line by line  commentary |  Excellent line by line comments |
| user guide 20% |  Very poor user guide |  Poor user guide |  Satisfactory user guide |  Good user guide |  Very good user guide |  Excellent user guide |
| Additional Features 10% |  Very poor user / no additional features |  Poor use additional features |  Satisfactory additional features |  Good additional features |  Very good additional features |  Excellent additional features perhaps using context sensitive pop-up menu |
| Global: |  | | | | | |