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(Working Title)OW2DSailing

This is the game design document for the open world 2d sailing project from Beniers Gaming Industries. This project will grow over time and its features will be expanded over the following months. 24-01-2021

GDD

Game Design Document

Inhoud

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# Inleiding

This project was first conceived by Rick Beniers in 2020.

the first idea was a simple ship of the line in an 2D open world were it could sail around, attack other ships and explore the world.

The first iteration was started on 24-01-2021 which would cover the Documentation set up in order to get a better idea of the game and the requirements needed to realise the very first idea about this project. The project will be expanded over time and multiple features will be documented and added in the project.

# POR(program of requirements)

**24-01-2021**

The player will start the application in a standard 2 mast ship. When the player presses on one of the W, A, S, D keys on his/her keyboard the ship will react and the following will happen depending on the player input :

* W : the ship moves slowly forward.
* W + A : the ship moves slowly forwards and towards port(left).
* W + D : the ship moves slowly forwards and towards starboard(right).

**03-02-2021**

The player can move and navigate his ship around the world.

However the unity function to add force create unexpected results and weird behaviour. To remove this behaviour the unity function need to be replaced with manual code and functions to add force to the ship object. This can be achieved be directly influencing the X and Y position of the ship object in units per second.

Both the function for forward movement and sideways movement need to be expanded to achieve this. The guideline for sideways movement should be : ~~check the Z rotation of the ship object for an angle in the ship position and change X and Y position based off this indication~~ this has been replaced by a quaternion function.

**13-02-2021**

When the player is moving his ship, make the camera follow the player position(not rotation) in order to create minimal situational awareness.

**20-02-2021**

The player needs a certain terrain to move around and maybe even interact with in some way in the future terrain generation will be done through a Perlin noise map to create a random generated world every time. The terrain will be in 3d and mostly consist of island and small land masses. In the future this can be expanded upon to maybe create larger landmasses/ continents.

# Version Control & management

|  |  |  |
| --- | --- | --- |
| Iteration/Version | Description | Date start & date end |
| Iteration 1(V0.1) | Setting up project docs. | 24-01-2021 --- 24-01-2021 |
| Iteration 2(V0.2) | 1st realisation fase | 24-01-2021 --- 03-02-2021 |
| Iteration 3(V0.3) | 2nd realisation fase | 04-02-2021 --- 10-02-2021 |
| Iteration 4(V0.4) | 3rd realisation fase | 13-02-2021 --- 18-02-2021 |
| Iteration 5(V0.5) | 4th realisation fase | 20-02-2021 --- |

# Schedule Iterations

## Iteration 1(V0.1)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Task | Description | Priority(1 - 5) | Finish Date | Status |
| 1 | Create Word Doc GDD with an introduction page. | 5 | 20:00 24-01-2021 | Done |
| 2 | In GDD add Version control & management page. | 4 | 20:10 24-01-2021 | Done |
| 3 | In GDD add POR. | 5 | 20:20 24-01-2021 | Done |
| 4 | In GDD add schedule page | 5 | 20:30 24-01-2021 | Done |
| 5 | In GDD add Software requirements page. | 3 | 21:01 24-01-2021 | Done |
| 6 | In GDD add Functional design flowchart. | 4 | 21:50 24-01-2021 | Done |
| 7 | Update table of contents. | 5 | 21:51 24-01-2021 | Done |

## Iteration 2(V0.2)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Task | Description | Priority(1 - 5) | Finish Date | Status |
| 1 | Place ship controller object. | 5 | 21:00 31-01-2021 | Done |
| 2 | Create movement script | 5 | 21:01 31-01-2021 | Done |
| 3 | write keyboard input detection | 5 | 21:40 31-01-2021 | Done |
| 4 | Write Forward movement | 5 | 23:00 31-01-2021 | Done |
| 5 | Write left movement | 5 | 02:40 03-02-2021 | Done |
| 6 | Write right movement | 5 | 02:40 03-02-2021 | Done |
| 7 | Write player controller movement. | 5 | 22:30 31-01-2021 | Done |

## Iteration 3(V0.3)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Task | Description | Priority(1 - 5) | Finish Date | Status |
| 1 | Get ship X & Y position | 2 | 08-02-2021 | Done |
| 2 | Get ship Z rotation | 2 | 08-02-2021 | Done |
| 3 | write change z rotation script | 3 | 09-02-2021 | Done |
| 4 | Write change x, y position script | 5 | 10-02-2021 | Done |
| 5 | Write Quaternion rotation script | 5 | 10-02-2021 | Done |

## Iteration 4(V0.4)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Task | Description | Priority(1 - 5) | Finish Date | Status |
| 1 | Write camera follow script | 5 | 19:30 13-02-2021 | done |
| 2 | get player ship position(x, y) | 5 | 19:32 13-02-2021 | done |
| 3 | Set camera position with player position | 5 | 19:47 13-02-2021 | done |

## Iteration 5(V0.5)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Task | Description | Priority(1 - 5) | Finish Date | Status |
| 1 | Create noise map | 5 |  |  |
| 2 | Implement octaves | 5 |  |  |
| 3 | Implement colours | 5 |  |  |
| 4 | Build mesh | 5 |  |  |
| 5 | LOD | 5 |  |  |
| 6 | Endless terrain experiment | 5 |  |  |
| 7 | threading | 5 |  |  |
| 8 | LOD switching | 5 |  |  |
| 9 | Seams | 5 |  |  |
| 10 | Create Falloff map | 5 |  |  |
| 11 | Normals | 5 |  |  |
| 12 | Collisions | 5 |  |  |
| 13 | Flat shading | 5 |  |  |
| 14 | Data storage | 5 |  |  |
| 15 | Colour shading | 5 |  |  |
| 16 | Texture shading | 5 |  |  |
| 17 | optimization | 5 |  |  |
| 18 | refactoring | 5 |  |  |
| 19 | Fixing gaps | 5 |  |  |
| 20 | Implement terrain into game | 5 |  |  |

# Software Requirements

|  |  |  |
| --- | --- | --- |
| Software |  |  |
| Program : | Program description : | Priority(1 - 5) : |
| Microsoft office | Documentation editor | 5 |
| Unity3D | 3D editor | 5 |
| Visual studio | Code editor | 5 |
| Paint3D | Sprite editor | 4 |
| Audacity | Sound editor | 3 |
|  |  |  |
| Hardware |  |  |
| Program : | Program description : | Priority(1 - 5) : |
| Windows 10 | Operating system | 5 |
|  |  |  |

# Functional design

