

Department of Computing and Networking

Games Degree Year 3

## Third Iteration Report

## Aoibhinn McAuley C00146854

## Darren Kelly C00157765

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**User Stories Implemented**

**Multiple Shapes User Story:**

As a user I want the game to have more than just one type of shape for me to control and position in the grid.

Conditions of satisfaction:

* There a multiple shapes for the user to place in the grid.

Sub Task: As a user I want each unique shape to a colour.

**Clearing a full grid square of shapes User Story:**

As a user I want to be able to clear a full grid of squares by positioning the different shapes appropriately .

Conditions of satisfaction:

* Full grid squares made up of shape parts clear.

**Have a new shape spawn after the pervious one has stopped moving User Story**

As a user I want a continuous amount of shapes to spawn after one another when the pervious one has been placed in the grid.

Conditions of satisfaction:

* A new shape spawns after when the pervious one has stopped moving.

**Add Collision detection between shapes User Story**

As a user I want the shapes to land on each other as expected and not be able to pass through each other.

Conditions of satisfaction:

* The shapes treat each other like solid bodies.

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**Add Collision detection between shapes and** **plane User Story:**

As a user I want the shapes to collide with the sides of the matrix as expected.

Conditions of satisfaction:

* The shapes treat the sides of the matrix like solid bodies.

**Instant drop function User Story:**

As a user I want the current shape to drop instantly and land directly below it when I press the space bar.

Conditions of satisfaction:

* The shapes velocity is increased appropriately.

**Let each shape have a shadow User Story:**

As a user I want the current shape to have a shadow on each side of the matrix and if there is a shape below it I want to the shadow to be on top of it.

Conditions of satisfaction:

* The shapes all have a shadow visible on all sides of the matrix and any shapes below it.

**Level progression user story User Story:**

As a user I want there to be multiple levels to complete that I achieve by clearing a certain amount of lines. I also want a score to be visible on screen and to increase with each cleared line and level.

* Conditions of satisfaction:

The game has multiple levels and a score that increase as expected.

**Different camera views User Story:**

As a user I want there to be multiple camera views I can switch between.

* Conditions of satisfaction:

The game has multiple camera views that user can switch between.

**Simple GUI** **User Story:**

As a user I want to be able to see if the sounds are switched on, my current score, level and the amount of grid squares cleared. .

Conditions of satisfaction:

* I am able to see the current state of the sounds, my score, level and grid squares cleared.

**User Stories Started But Not Implemented**

**Menu system User Story**

As a user I want there to be a start screen, a pause screen and an end screen.

Conditions of satisfaction:

* There is a menu system consisting of a starting screen, pause screen and an end screen.

**User Stories Not Implemented**

**Two player network system User Story:**

As a user I want to be able to play against another player who is playing on a different computer through a network system.

Conditions of satisfaction:

* There is a two player online option.

**Display next shape user story:**

As a user I want to be able to see what the next shape will be before it is used.

Conditions of satisfaction:

* The next shape to be used is displayed on the screen for the player to see.

# Additional Work Completed

Due to our lack of time management for this sprint we were unable to start any additional user stories or sub tasks for this iteration.

**Work Breakdown**

Aoibhinn:

I started creating the different shapes cube, T shape, T shape opposite, L shape, L shape opposite. I gave them their unique colour textures and their individual bounds restrictions. I also coded them to rotate properly and keep their shape after rotation. The last things I implemented were level progression, the amount of layers cleared, and a score that uses a multiplier depending on speed and level when clearing a layer of the array. These are all shown in a GUI box on screen for the user to easily see.

Darren:

I created the zShape.I then implemented the shapes Aoibhinn and I made into the project and got them spawning and colliding appropriately. I amended the collision detection so they would behave as expected and clear and drop appropriately as it did not easily transfer over from the previous iteration as the shapes were now made up of many cubes. I converted all of the instances of integer timers in the project to Ogre::timer so that the game would run appropriately no matter what frame rate it was running at. Also integer timers that increase by one every frame are extremely bad practice.

**Reflection**

During this iteration we ran into some problems. We failed to manage our time properly and fell short on what features we should have had implemented at this stage, with that said we still improved on what we had completed in the previous iteration and improved game play based on the feedback we received from the play testing session (adding in the shadow to help placing the shape, adding in the instant drop function so the grid square could be completed faster.)

What we learned during this iteration:

* We learned how to make an object containing multiple cubes and making it respond appropriately within the 3D array.
* We changed our instant drop function as it could not work the way we initially intended it to with multiple cubes inside objects.
* We learned how to make multiple shapes work within the grid, clear appropriately, and then drop into their desired positions in the array (we had to completely change our algorithm for dropping the shapes into position as the method we thought we work correctly did not.
* During creating the drop function we ran into a lot of problems as there was an error in the member variable for keeping track of position of the cubes that we missed before. This caused many strange errors in clearing layers that caused us to think for a long time that it was the method logic causing the error although it was a simple assignment of the variable m\_position inside the cube class that was not meant to happen causing varieties of confusing hard to follow errors.
* We also learned how to use timer within ogre and never to use integer variable timers as they can range hugely as frame rate changes throughout gameplay. We now understand that it is a very bad practice.
* We also learned that we should comment our code correctly as we progress through the project as this took us some time commenting after the project had been finished.

Declarations of Originality

DECLARATION

I declare that the work I am submitting for assessing by the Institute examiner(s) is entirely my own work, save for any portion(s) thereof where the author or source has been duly referenced and attributed.

I further state that I have read, and am familiar with, the Institute Examination and Assessment Regulations and that I am not, so far as I am aware, in breach of any of these regulations.

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