**Crazy Pong Developer Diary**

**UNITY VERSION: 3.7f1**

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**Introduction:**

Crazy Pong is a cloned and tweaked version of the Ataris 1972 arcade game Pong. With its own difficulties and different levels.

# Week 1: October

First entry to the developer diary. I've thoroughly read through the design document that I have received. I have looked up similiar projects on the internet to see how the development process should begin and be staged. First step would be create a basic level (Easy level in my case) and get everything working, then begin to develop on the enemy AI/menus.

# Week 2: October

Upon receiving my assets from the customer, I took a look at them to make sure all necessary assets were there. I created a blank Unity skeleton with all the scenes that I will need. Began setting up the environment. Pre-made all the script names and imported assets.

# Week 3: October

Created a basic layout of the background, also added all the necessary game objects and put them in their right positions. Attached corresponding scripts to them and made game objects into prefabs. Also began working on the movement of the player and computer paddles.

# Week 4: November

Went into depth with player control paddle. Keys up and down arrows move the player paddle up the x and y axis. Set up floats for move speed, top and bottom boundaries. Vector2 for starting position and used localPosition to record position of the paddle. Created if statement for KeyCode inputs, the Y position of paddle, cant exceed topBounds/bottomBounds.

# Week 5: November

Began to implement the ball and working on its script. Created a game manager object, instantiated the ball when the game is ran by loading it from the Resources/Prefabs folder and making it a gameObject. The ball controlled the collisions between the boundaries and paddles. Got basic ball movement down this week. The ball was bouncing but would get stuck at the top and just bounce back and forth. Need to randomize bounce angles. Also experimented with ball movement speeds and direction. When the ball is instantiated it bounces off the computers paddle and moves towards players zone. A tag on the ball is added so the computer AI can react when the ball is going towards it.

# Week 6: November

Began working on the advanced movement of the ball. To get a random bounce angle I had to use radian. We covered this last year in one of our modules labs but with python. I applied the same logic to get random bounce angle method using minRad and maxRad. I hard coded these values and applied them to Random.Range built in unity command. Made the ball use this formula when it hit top/bottom of the player paddle and walls. This was very time consuming to do and get it correct.

# Week 7: November

Began working on UI. I wanted to get a skeleton level down first that works 100% before I attempted to do any of the other levels/difficulties. Made a Main menu, Pause Menu, Difficulty Menu and Levels Menu. Made a HUD script for all the ingame UI, this also recorded the score and incremented it by 1 when a player/computer got a point. A win text appeared on either side depending who scored 10 points first. Me and the customer agreed that the Settings Menu is not necessary so did not include it. The menus were set up as the design document stated. I used an individual script for each menu that controlled the button navigation. The customer wanted the menus to be navigated using the up and down arrow keys. I added a green ball to show where the user was when navigating through the menu. The navigation used index ints, the green ball was offsetted to keep up with the index.

# Week 8: December

This week I added sound. The customer did not want any background music so this was no implemented. When ball hit paddles/walls a sound was made. The soundManager object that is present in all of the scenes controls the main sounds. The sounds are loaded from the Sounds folder in assets with this object. I encountered a problem with WIN/Lose condition sounds. The sound would just go into an infinite loop. Did not figure this out, so excluded for now. Began developing on the difficulties aswell this week. Made the ball slower/faster depending if it was easy/med/hard difficulties. In hard’s case the ball has to get hit at just the right angle to score a point and fool the computer AI.

# Week 9: December

Began working on the Crazy Mode and Double Trouble modes. Highly underestimated the workload on these. For Crazy mode, came to a solution with the customer instead of extra collision, the balls would spawn at the top and bottom of the play area. Created 2 spawners that used a timed spawning class, after several seconds the balls would be in the playable area. The computer AI would get too overwhelmed with all the balls and paddle would not move. Added a second paddle to the double trouble mode. Began my test plan.