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**Game Specialism – Programming – Reflection report**

I feel that choosing the programming specialism was a really good idea for me because I enjoy seeing and doing the back-end work when it comes to games. Seeing the progress instantly after each line of code written was a really satisfying experience. No good thing comes without sacrifice and, although I enjoyed a lot working on the briefs, they came with some problems and frustration when it comes to the process of getting the best result. I know that the briefs that I chose were in the beginner category, and maybe I didn’t invest a lot of time when it comes to creating the asked result, but the amount of information that I learned was incredible. This information will definitely come handy in the future when I will work on more complex problems and scripts when it comes to programming.

The first brief that I worked on was “Auto Scaling Text Box”. I think this exercise is really useful in every game, especially those where the players would want to talk with each other via chat. Although the method we were asked to use in order to get to the wanted result was outdated and we could do the same thing in an easier manner, I feel that it’s never bad to know two solutions to the same problem. Maybe the easiest way of doing this doesn’t work properly, so we know that we can always rely on scripts and programming to solving really complex problems when it comes to games.

In this exercise all we needed to do is to resize the borders of the text by the quantity of pixels used inside the box. One of the scripts contains the code that specifies the size of the text inside the box and sends the information to the second script. This script uses the information received and resizes the box that surrounds the text. Despite the fact that this brief is in the beginner category, I think it’s an exercise that everyone who wants to do programming in games should know.

The second brief that I worked on was “Instanced scrolling material” which was confusing at the start. When I saw the video example of the exercise I thought that we just need to move some pictures from the top side of the screen to the bottom side and they to make them appear again on top. After I talked to Paul he explained that the exercise is a bit different and we actually have to move the texture on the object with scripts. At first I thought this will be a hard exercise, even though was in the “Beginner” section. After I started doing some research and looking through the documentation Unity provides, the brief didn’t seem hard anymore.

The script used to do this was indeed easy to make. I made the variables editable in the editor (i.e. scrolling speed and direction) and then I applied those variables on the texture’s movement. I feel that even if we had to do the exercise I was thinking about, this was a better and faster solution to a similar “problem”. This brief will be really useful in the future when designing games. Instead of moving objects in the scene it is a better idea just to move the texture on the object. In this way the scene would be better optimised and maybe saving a lot of resources used for the game that can be focused on more important aspects of the game. For example, if in a game we have a waterfall, which isn’t the main focus of the game, this exercise would be the best solution when it comes to the movement of the water, instead of making objects acting like raindrops and making them fall and instancing them back at the top.

The third and final brief that I did was “Speedometer”. I feel that this was the most fun and useful exercise between the ones that I made. When designing car games, the speedometer shown on the UI is the most essential part. The player can learn a lot of information about the way they are playing the game just from a circle with an arrow shown on the UI. This exercise was the hardest out of the ones that I made, but it’s the most satisfying and rewarding so far.

At first I made the objects that I need for the brief in Photoshop, such as the background circle on the speedometer and the needle used to display the speed on the gauge. After this I found some really useful articles regarding the exercise I am doing on the Unity forums. I took measures of the limits of rotation for the needle, showing the minimum and the maximum speed. We need also to display the speed of the moving objects so I continued the script with a way of making the numbers representing the speed appear on the gauge. I calculated the angle where the numbers needed to appear and I divided it by 10 so I can get 10 segments of the same size displaying a different speed. After that I made a way of calculating the angle that the lines need to appear on the clock and made them appear. The problem that I encountered was that the text representing the speed was also rotating and that made the numbers unreadable in some situations. In the same script I made sure that only the lines rotate and not the numbers.

Lastly, I made the bindings that control the speed so I can test the functionality of the speedometer. The “object” is accelerating while pressing W and breaking when pressing S. To simulate the existence of a car, I also made a deceleration rate to show that when not accelerating the car loses speed over time. This gauge is essential for future car games that I will probably work on and I will definitely improve it by the next time I will use it.

I know that the briefs that I chose weren’t the hardest ones in the list and the time necessary to make them wasn’t long, but they are a very useful source of information for future projects I will be working on. I feel that I learned a lot about coding and unity and I made a really big progress in my knowledge when it comes to C#.

My interest in programming evolved and I will start working on small projects in my free time to learn more. A lot of people avoid the scripting part when it comes to making games because sometimes it can be really complex and you could face a lot of problems and frustration because “something doesn’t work”. This is the reason I enjoy programming, finding problems and facing them, because seeing that your code finally works after hours of struggle is the most satisfying feeling.

In conclusion, I had a really good experience when working on the briefs and I will definitely choose the same specialism next year. Next time I won’t do the “Beginner” part of the list and I will try to challenge myself more and definitely learn information that I never heard about and solve problems in ways that I didn’t think it would be possible.