Computer Science NEA report

My name is George Dimas Fox and I moved to England last year, this is my report on my Computer Science NEA project which is about a 2D fighting game. A 1920 x 1080 screen size is what I chose as that is what most PCs’ base screen size are. Additionally, seeing as how I only started coding 9 months ago (as in Indonesia computer science coding is not a subject unless you are in university) I had to lots of research and watch youtube guides on python and the neat little tricks you can use within it. I’ll have a dedicated section of report about the research I gained somewhere in this section (will be named “research”). The base/main body of the code will be similar to a video I found from the internet (I will put the link in the research area), but it will be more detailed and have more options than shown in the video.

I believe (during my making of the program) the best approach to take in making a 2d fighting game is to make the parts of the game in a chronological order. What I mean by that is I will make the first screen (the start screen), and follow that by having multiple buttons as to which type of game mode you wish to choose. After that, having a character selection screen would be great, but I would leave the boxes empty as coming up with the characters themselves may be difficult, so having an empty layout/template would be good as I can put in the desired characters once I have found them. Next step would be to have a map selection as most fighting games would have different background sceneries during the fights/battles. Same as before, I’ll make up a code which allows me to put in any image and then find a suitable image after. This part irritated me a bit as I could not find the right image to use since every image comes in different resolution sizes, so finding the perfect one was a struggle. Then, I decided to use a resolution converter, it worked a bit but felt inconvenient if I had to resize every single image to a suitable size, then I continued watching the video as mentioned earlier, and I learned a code which automatically resizes images to the suitable size as your desired resolution.

I started of by making a layout and screen as a fighting game would have lots of different arenas (fighting locations), so having a screen to test out and see how certain things work will be a good idea. However, during the process of making the screen, I already came across a simple problem which is shown as below:



I was searching for a solution for a couple of hours, when I realized that I made a simple spelling mistake.

Once I fixed that problem, I moved onto the next part of the plan.

**18/08/2023**, I decided that taking notes of the dates of when I do the work and what I do will be a more efficient way to backtrack and understand what I have done so far with the program. Today, I realised I should focus on making the main menu screen first, and to do so I would need to approach my original plan from a different angle. As a result, <https://www.youtube.com/watch?v=GMBqjxcKogA&t=92s> provides me with a good understanding of how layering and adding multiple screens to pygame works.

**21/08/2023,** after searching and asking my friends for help, I realised pygame has its own button function. <https://www.youtube.com/watch?v=G8MYGDf_9ho> this video taught me an effective way of using the button class and has made my code pretty flexible regarding the button sizes and what not. A new issue I found was how to scale the button sizes based on the changing resolution. Update on the task (if I say update then I mean that I have found a current issue), I realised that the code works well and all, but I will be having troubles in keeping it tidy, so I have to search for a solution which enables me to continue the code in a tidy manner.

**22/08/2023,** I realised the previous youtube video I used was lackluster with the information given and caused me to go through a lot of pain and turmoil in finding a current solution. First, I thought I could use the MOUSEBUTTONDOWN feature, but I decided not to as having my current code could be useful as I can use it for other codes as well if I was to make different ones, so I did further research and it turns out there is this video <https://www.youtube.com/watch?v=2iyx8_elcYg>. This video directly linked to the previous video and tells me how to effectively use the code made and implement it into making a main menu screen, this is the code used A computer screen shot of text

Description automatically generated. I decided to put that into a separate file so my main code can look as tidy as possible.

Youtube video: <https://www.youtube.com/watch?v=s5bd9KMSSW4&t=498s>

Resolution converter