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4th year project proposal

Title

My idea for my 4th year final project is something that is now becoming more of a norm in the gaming industry, I am proposing to develop a data analytics library to assist in the development of a companion app for a video game.

Aims

The aims of my 4th year project is to track user stats while they play the game, these details will then be shown to the user through the mobile device, so they can continue to view their stats while they are playing the game and while they are not playing so they can keep a digital track of their game data wherever they are.

Once this is complete then developers will be able to use the data analytics library that I have developed in their game to be able to collect all the player behavioural data that they need and then be able to use that data to create their very own companion app for the players.

Also, throughout doing my project I aim to further improve my skills as a programmer by learning the new material that I will need to utilise in my 4th year project to be able to get it to work with the technologies that I have in it.

I will aim to collect data from the game and send that data to a remote cloud database where this data will be housed for when I need to query it.

Finally, I aim to be able to gather that data back using a mobile application, the user will be able to see this data wherever they are in the world.

Objectives

The main objectives of my 4th year project will be to first get the data from the video game and get that data to be displayed to the user wherever they are, there will be a few ways in which I plan to do this.

To gather the data from the game I am going to create a library in C# to have different functions in it which allow data to be parsed into them and have some data returned so each function will return a different data set.

I will then need to get that data that is returned from the library stored in a cloud database so that any user will be able to access it from wherever they are, so to get the data stored I will have to use networking to get the data sent from Unity to the database.

Once the data is in the database I will need a means of getting that data back through the companion app and to get that data back then there will need to be some networking involved from the app side.

Research

I have researched different articles online to see if I can find anything like what I am aiming to develop, I came across an article

https://unity3d.com/learn/tutorials/topics/analytics/introduction-unity-analytics

This is a video that talks about an introduction to unity’s own data analytics engine, the presenter goes on to talk about 2 main features that will be available to all developers. These features are a Realtime data view for developers and a heatmap for developers to see where players are dying the most in games or how many users are completing the levels. The Realtime data view is showing developers how many of their unity games are being downloaded, the revenue they are getting from that and many more. This may be good for developers but there is nothing for the player themselves to seem enticed enough to continue playing whatever game that they are gathering data on.

There are many different types of languages that can be used to develop the library that I will need to make if I want to gather data from a game, I have chosen to use C# because that is unity’s default programming language and will make more sense in creating a library in that language.

From researching online, I found this article:

<https://www.tristancartledge.com/setting-up-and-building-a-unity-class-library/>

this is an article that shows how to build a library for use within unity which is a great help because the article shows exactly what frameworks to target for the unity engine to recognise our compiled dll file to be able to call our functions.

I will be using android studio for the development environment for the mobile application because of the native android java language which I feel more proficient developing in and I have previous experience of the development environment and language.

  I will be using the scripting PHP for initiating the connections to the database as it is a powerful scripting language and unity and android studio both give access to networking libraries to make use of HTTP requests.

<https://docs.unity3d.com/Manual/UnityWebRequest-SendingForm.html>

This article shows us how to use www web requests within unity which utilises the unity networking library unity engine. Networking to allow unity to send http requests by using the www web request object which allows the user to post a form to a server which has parameters of the identifier followed by the variable that needs to be passed along too. This helps us to establish connections to databases through unity’s side.

Potential outcomes

The potential outcomes for this project are that it gets completed exactly as I proposed, I would like it so that the users can have full view of their data wherever they are, so they can use their cellular data to view the data or WIFI. If anything, the project will have the application and if there is enough time then there will be a website too that would show graphs of the data gathered.