Tecnológico de Monterrey

***Construcción de software y toma de decisiones***

**Grupo**:

401

**Curso:**

TC2005B

**Profesor:**

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# Drummer vs A.I.

1. Executive presentation of the proposed solution.

PASPresentation.pdf

https://drive.google.com/file/d/1yYLFcKjBcj_yNn3zBg3qoRFYWbkewGD1/view?usp=sharing

2. Functional specification and system architecture.

For functionality, the game is a  2d side-scroller game, inspired by Megaman. The player has 3 lives and 3 defense points represented in a UI implemented bar, they shoot notes that destroy the enemies. The enemies are robots that shoot blasting sounds, the damage is only avoidable if the player has previously collected an earplug. Earplugs are items that add defense points to the player's defense, with a max of 3 defense points. If the player has no defense points the damage will reduce their health. Once their health is reduced it can't be recovered. The health is directed to the ear, presenting in a visual and simple way that without protection, loud noises can permanently damage the hearing. The main goal of the level is to defeat the boss and take a piece of the golden drums. The game has a movement and attack tutorial, 2 levels, a library where the player is able to read information about the items.

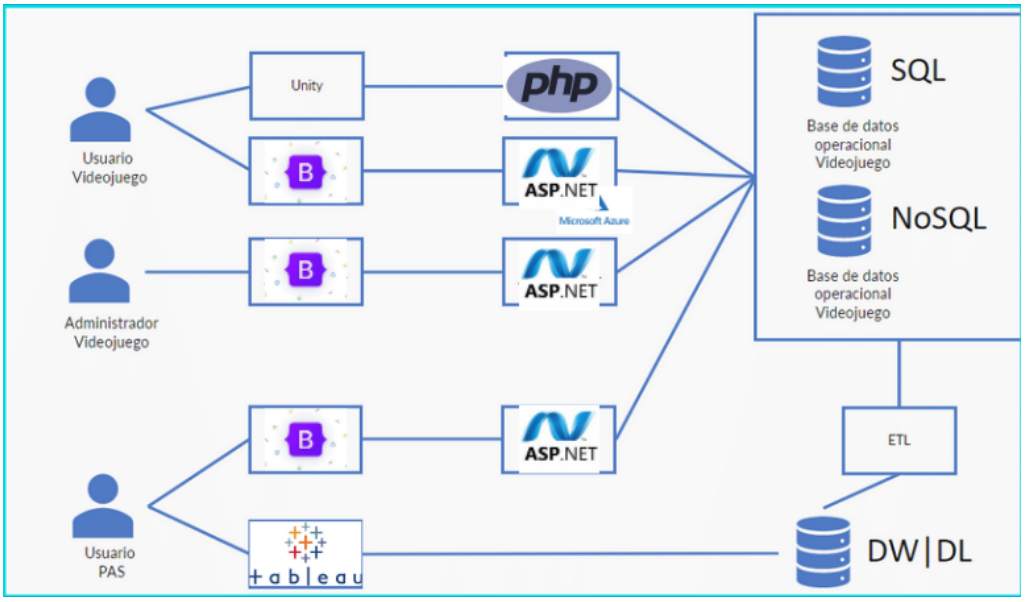
The  game is pretty light and has small graphic requirements, so it's possible to run the game on a computer with a basic microprocessor and with an integrated graphics card.

The Webpage

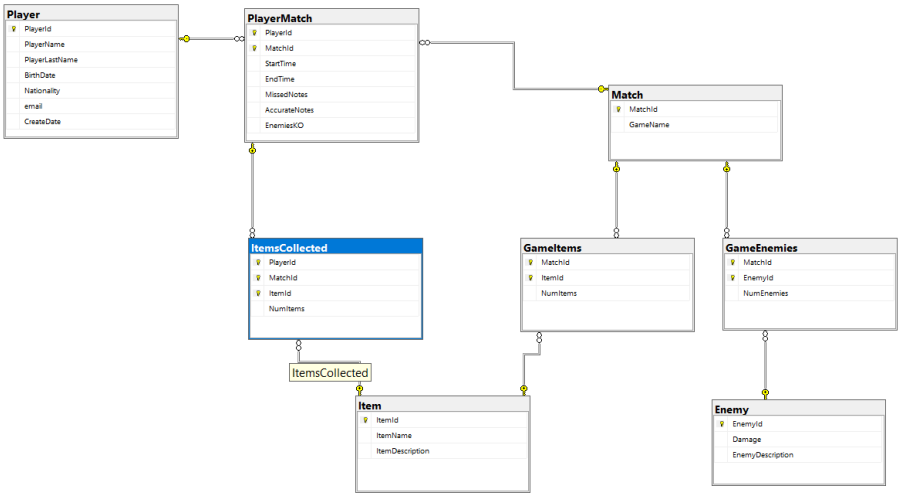
The Web site contains general information about the video game and PAS in the home page, additionally the guest will be able to navigate to the PAS official website and social networks. Also in the button player in the navbar the web displays a table with the players registered and the respective CRUD operations functioning (Create, Read, Update, Delete), this section and the web site in general is connected via .NET (Microsoft Framework) to the database in SQL Server, in which the data warehouse has been created to deploy graphs in the graphs button in the navbar. With this PAS will be able to track the important information extracted from the game so PAS can take decisions according to the objectives discussed.

An architecture of type MVC (Model View Controller) has been used to organized and create the web where framework use was .NET in which is the programming language for the model and the controller of the backend is C# and the views have been made in .cshtml (combination of C# and HTML) and bootstrap to style.

The web page can be accessed through the documents of it.




The design of the database in SQL Server is shown below.




The database is made with 8 tables, where 6 of them represent the “static” values of the game itself like the game type, enemies and items, also the Player table. And the other 2 tables “ItemsCollected” and “PlayerMatch” represent the instances of each game grouped by player.

3. Summary of amount of effort (hours) applied in the inception, design, construction, testing and release of the system.

In a fast summary of hours we took about 40 hours in the creation of the Web page and in the Unity project game, approximately, the instance of the database took around 15 hours, both the queries needed to create, update the tables and manage them through SQL server. The micromanagement joints so the whole ecosystem could work, required an approximate of 8 hours it took approximately 8 hours on the creation of the original sprites, 10 hours on the creation of the menus, and then about 9 more on the creation of enemie's patroll system and the attack on the Player with his health, defense and damages relations. 6 hours regarding the boss's behavior. And lastly around 10 plus hours of non implemented functionalities in the final executable. This leaves the

4. Videos where the project features are demonstrated, showing the information flows for each user type. Delivery: Open link to youtube. 10 minutes or less in length.

https://youtu.be/GrrapGVHaW8

Github repository with the web and unity projects

Gurtubay/VideogamePAS: Web app for PAS (github.com)