



**Tecnológico  
de Monterrey**

Functional specification and system architecture

Project's name: Percusionatec  
May 2022

José Luis Madrigal A01745419  
Cesar Emiliano Palome A01746493  
José Ángel García Gómez A01745865  
Erika Marlene García Sánchez A01745158

Monterrey Institute of Technology and Higher Education, Campus Estado de Mexico  
Software construction and decision making.

### Functional specification and system architecture

1. The video game can be played on a computer.
2. The video game should be able to register the private information of the user in the database, including information like their name, gender, city, country, etc.
3. The video game should be able to measure and calculate relevant public data about the progress of the user and also update it in the database, like time played, score, levels played, etc.
4. The video game has to allow the users to initialize it at any moment of the day and at any time.
5. The video game must implement the reproduction of some real life system related to percussion.
6. The video game has to include 2 or 3 levels with progressive difficulty.

### Summary of amount of effort

INCEPTION	2 HR
DESIGN	6 HR
TESTING	40 HR
RELEASE OF THE SYSTEM	1 HR
TOTAL HOURS	49 HR

### System architecture

- We used C# to make the main script for the game and the framework of unity for all the design and animations.
- To send the data collected in the videogame to the database we used a typescript framework called NESTJS

- To make the web application for the administrator of PAS we used HTML and CSS for the main page and to make the login verification we used PHP.
- Finally, we used the TABLEAU Online tool to show the main graphs of the information obtained from the videogame.

