Jogos Matemáticos

Project presentation

Team Members

Diogo Carvalho

Team Manager

Diogo Cunha

UX Designer

Pedro Santos

QA Engineer

Ricardo Cruz

Product Owner

Pedro Amaral

Architect

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DevOps Master

Context

- "Jogos Matemáticos" are board games;

- These types of games usually involve rational and logical thinking;

- More than one player is required to play each game;

- They have been/ are promoted by Fábrica Centro Ciência Viva de Aveiro.

Problem

Platform
Lack of a platform where users can play math games virtually

Tournaments
Tournaments organized by Fábrica da Ciência Viva must be performed in person

Board
Participants have to physically go to the tournament's location, or they need to print the board at home (not very practical)

Covid-19
Inability to play in person with other players due to covid-19 restrictions

Objectives

Development of chosen games for web/ mobile

Web App/ Mobile App

Play in person or remotely

Rank players based on their individual skill level at each game

Play/ Train without the need to find another person to play against

Easily set up and manage tournaments involving large groups of players

Stakeholders

Fábrica Centro Ciência Viva
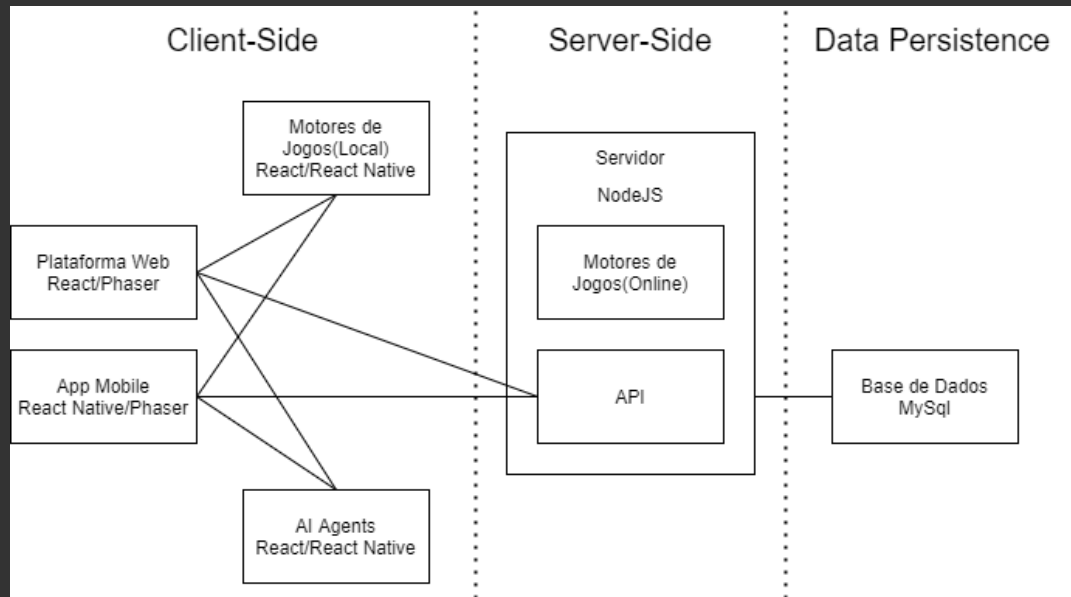

Educational Institutions

Kids/ Teenagers

Related Work

Online platform to play games or participate in tournaments of chess

Architecture Initial Proposal

Main modules:
- ➤ FrontEnd   -> R. Cruz & D. Cunha
    1. Web Platform   -> R. Cruz
    2. App Mobile   -> D. Cunha
- ➤ BackEnd   -> R. Baptista & P. Amaral & P. Santos
    1. Game Engines   -> P. Santos
    2. AI Agents   -> P. Amaral
    3. REST API   -> R.Baptista
- ➤ Persistence Data Layer -> D. Carvalho

Communication Plan

Discord

Slack

GitLab

Jira

Project Calendar

22/03

22/03 – 05/04

Backend:
 Requirements Analysis;
 Game Engines.

Frontend:
 Web App (Low fidelity prototype/ Initial implementation).

05/04-19/04

CI/CD

Backend:
 Database development;
 Game Engines;
 API Development.

Frontend:
 Web App (Core Functionalities);
 Mobile App (Low fidelity prototype).

19/04-03/05

CI/CD

Backend:
 Database Development;
 API Development;
 Game bots AI.

Frontend:
 Web App;
 Mobile App (Core Functionalities).

03/05-17/05

CI/CD

Backend:
 Game bots AI;
 API Development.

Frontend:
 Web App;
 Mobile App.

17/05-31/05

CI/CD

Backend:
 Game bots AI;
 API Development.
 (TBD…)

Frontend:
 Web App;
 Mobile App.
 (TBD…)

31/05-14/06

Backend:
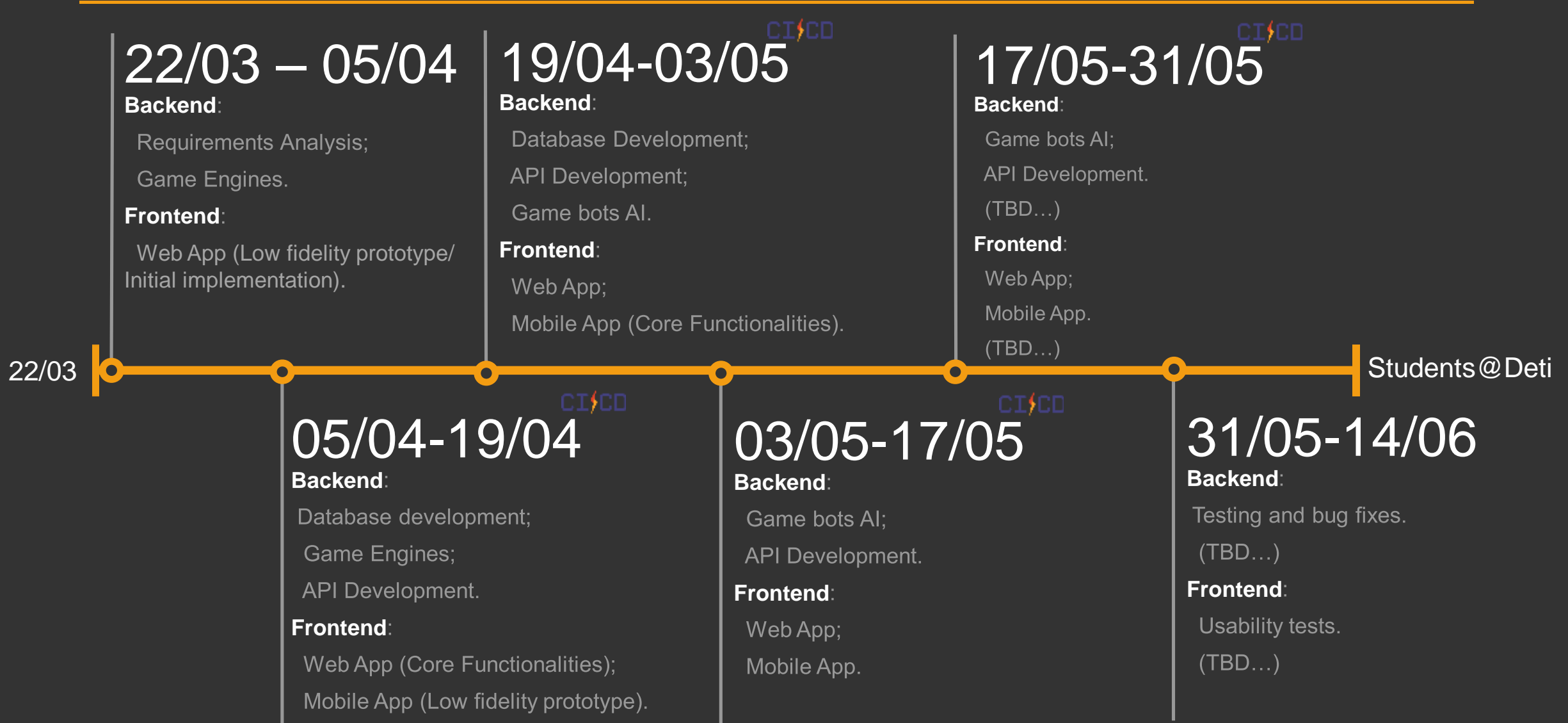 Testing and bug fixes.
 (TBD…)

Frontend:
 Usability tests.
 (TBD…)

Students@Deti

Expected Results

Web App/ Mobile App

Easy to use web and mobile applications which are interactive, responsive, dynamic and aesthetically pleasing while also ensuring the safety of our user's data

Games

Several fully functional and entertaining games that successfully catch the user's attention while also giving the feeling of real competition

Artificial Intelligence

Give the player the option of competing online or offline against non-human opponents of varying difficulty levels

Team Members

The development of our individual programming skills as well as our cooperative spirit while working as a software development team

Links

GitLab

https://gitlab.com/Miglou/pi_mathgames

http://xcoa.av.it.pt/~pi202021g07/