The Playground: mobile platform to connect amateur basketball players

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Background and motivation

Over the past decade, Portuguese basketball has undergone a notable period of growth and international recognition. This is exemplified by key achievements such as men's national team achieving its fourth qualification and the women's national team securing its first qualification for the European Championship, by Neemias Queta's presence in the NBA, and by the unprecedented inclusion of Ticha Penicheiro in FIBA's exclusive "All of Fame" group. These milestones reflect not only athletic success but also the sustained efforts of clubs, federations, and the broader basketball community in Portugal. This evolving context highlights both an increased public interest in the sport and the importance of developing new tools that can support and expand community engagement around basketball.

In this context, the development of digital solutions aimed at amateur players emerges as both relevant and timely. While professional basketball in Portugal garners visibility, grassroots participation remains a critical pillar for sustaining long-term growth. Organizing informal games, meetups, and local tournaments often faces logistical challenges, such as coordinating player availability or finding suitable courts. A dedicated digital platform can address these gaps by streamlining game organization, fostering interaction among players, and promoting healthy competition through features like ranking systems.

By leveraging modern mobile technologies, this project seeks to contribute to the continued development of basketball culture in Portugal, connecting enthusiasts and reinforcing a sense of community around the sport.

Objectives

The central objective of this project is to design and develop a cross-platform mobile application and its supporting backend services to facilitate the practical organization of amateur basketball games. The solution aims to provide features such as real-time court availability, game invitations, player schedule coordination, and a ranking system to promote competitive engagement. From a technical standpoint, the project addresses several challenges: implementing efficient real-time data synchronization to handle dynamic court availability; designing a scalable and resilient backend architecture capable of supporting varying user loads; ensuring cross-platform consistency and performance through modern UI frameworks; and integrating user-friendly interfaces that balance usability with feature richness. These objectives collectively contribute to the development of a robust, maintainable, and responsive system.

Tentative work plan

- Literature and State-of-the-Art Review: Research existing technologies and best practices for developing cross-platform mobile apps for this case. As well as similar competitor platforms.
- System Design and Technology Selection: Design the architecture of the mobile application and backend service, selecting and justifying appropriate technologies.
- Implementation and Integration: Develop and integrate the frontend and back- end components, including core features.
- Testing and Quality Assurance: Implement comprehensive testing procedures to ensure code quality, functionality, and performance.

- User Validation and Refinement: Conduct user testing, gather feedback, and refine the application based on user input.
- Documentation and Dissertation Preparation: Document the development process, results, and analysis, and prepare the final dissertation.

References & related work

- Global Tenis Network
- Playtomic - Play padel