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MOBILE APP

SCIENTIFIC CONFERENCES APP

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Mobile Application Development
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Introduction

This report details the development of a mobile application designed to support the organization and participation in scientific conferences. Scientific conferences are crucial events for the exchange of knowledge among researchers, providing a platform for presenting and discussing scholarly work. This application aims to facilitate navigation and access to schedules, articles, and other essential information during these events.

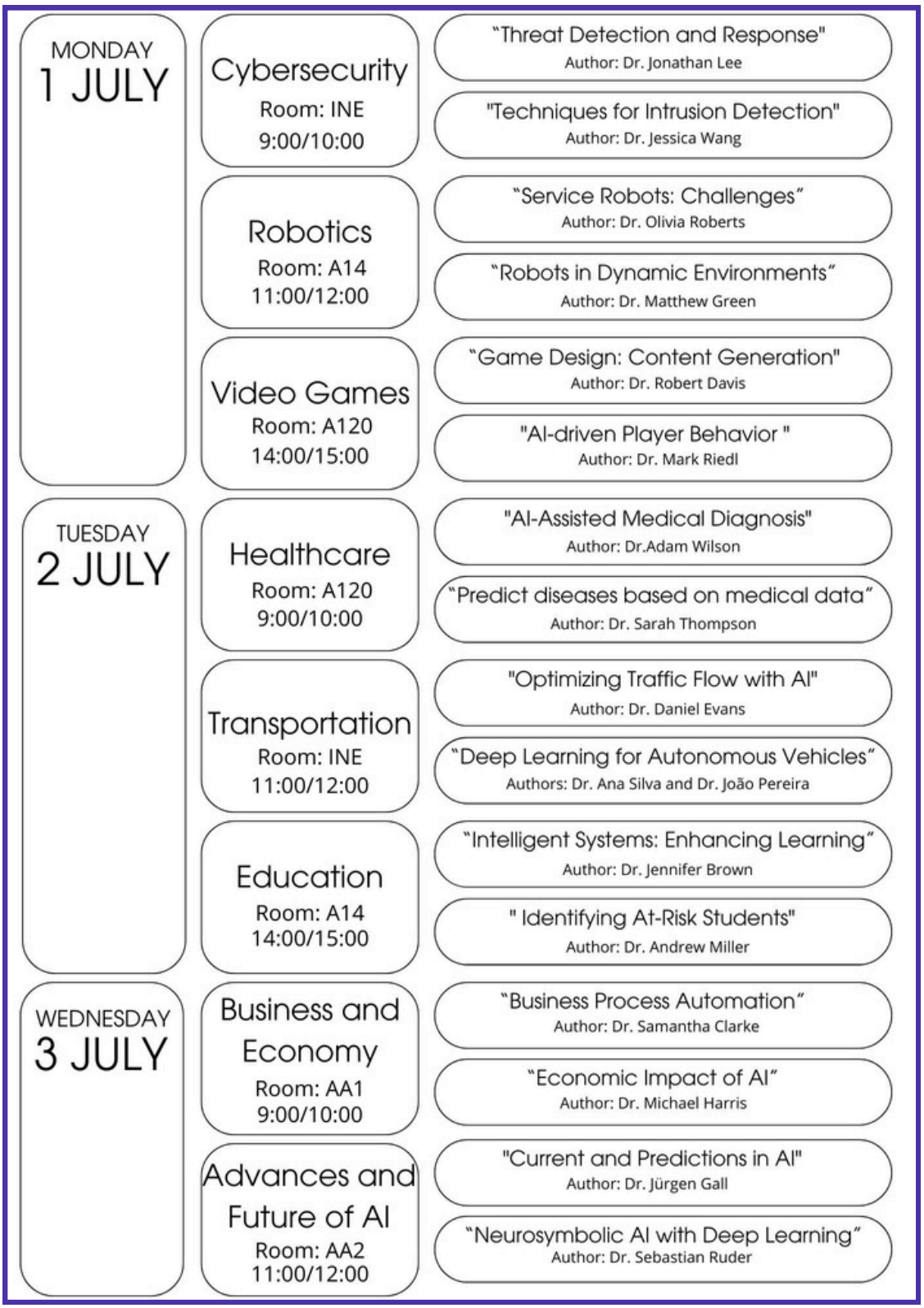
Project Justification

The need for such an application arises from the inherent complexity of managing and participating in scientific conferences, especially medium to large-scale events that can span several days and include multiple sessions in different rooms simultaneously. With the increasing digitalization and demand for mobile solutions, this application seeks to offer an intuitive and efficient tool for all participants, enhancing the conference experience through specific features such as:

- Article Listing and Details: Allows users to search and access detailed information about the presented articles.
- Personalized Schedule: Provides detailed schedules of sessions, making it easier to follow sessions of interest.
- Maps and Location Information: Offers maps of the conference venue to help participants navigate the location.
- Interaction with Authors: Enables participants to ask questions about articles, subject to approval by an administrator.

Project/App

Artificial Intelligence Conference Schedule



Architeture

1.Mobile Application:

- Frontend: The mobile application, developed in Android Studio using Kotlin and XML, serves as the user interface. It is responsible for rendering the user experience, including navigation, article listings, schedules, maps, and other interactive elements. The frontend communicates with the backend through API calls to fetch and display data dynamically.
- UI/UX Design: Utilizing XML for layout design, we ensured a responsive and intuitive interface. The design prioritizes user engagement and ease of access to various functionalities like the search bar, article downloads, QR code scanning, and profile management.

2.Backend Services:

- Server-Side Logic: Developed in Visual Studio using PHP, the backend handles all server-side operations. This includes user authentication, session management, data processing, and business logic implementation.
- API Development: The backend exposes a set of RESTful APIs that facilitate communication between the mobile application and the database. These APIs handle requests for user actions such as login, article retrieval, commenting, and profile updates.

3.Database Management:

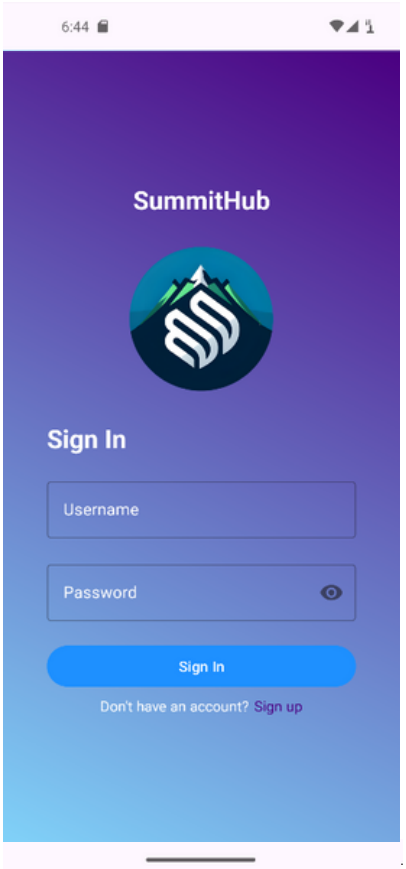
- Database Setup: The database is managed using XAMPP, with phpMyAdmin providing a graphical interface for database administration. The database schema is designed to efficiently store and retrieve data related to users, articles, conference schedules, comments, and other relevant information.
- Data Security and Integrity

4.Integration and Deployment:

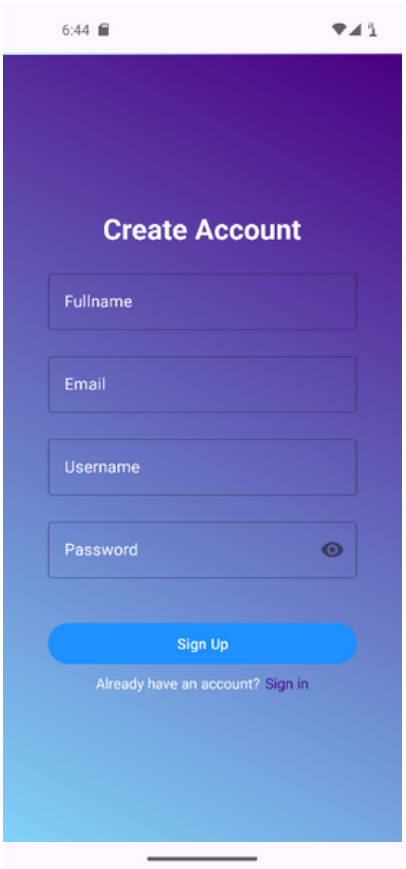
- Localhost Development
- Scalability Considerations: the architecture is designed with scalability in mind, allowing for easy transition to a cloud-based server environment for deployment at larger conferences.

Screens

Signin

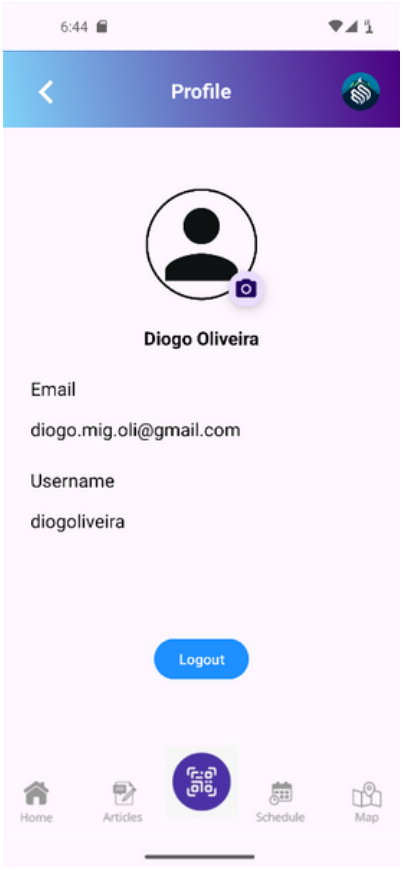


Signup

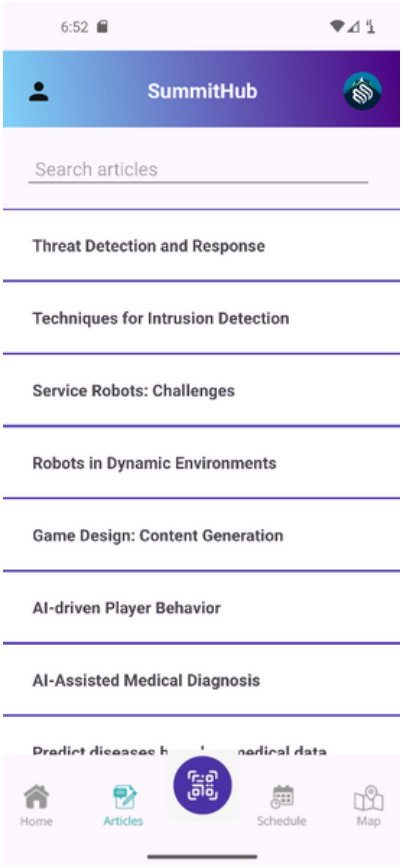


Homepage

Userpage

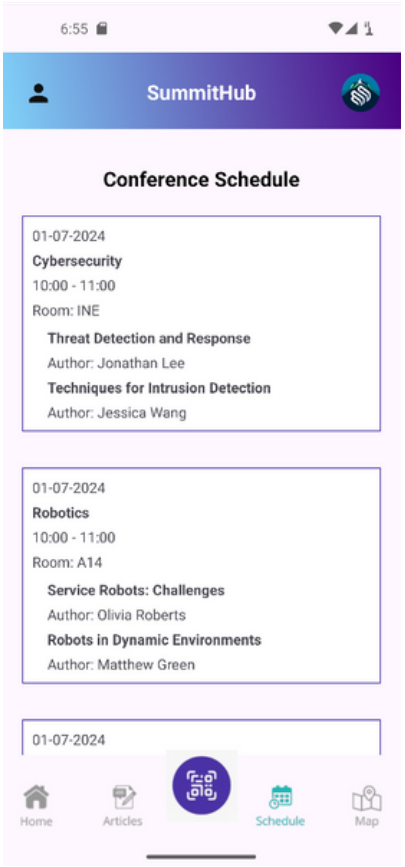


Articles



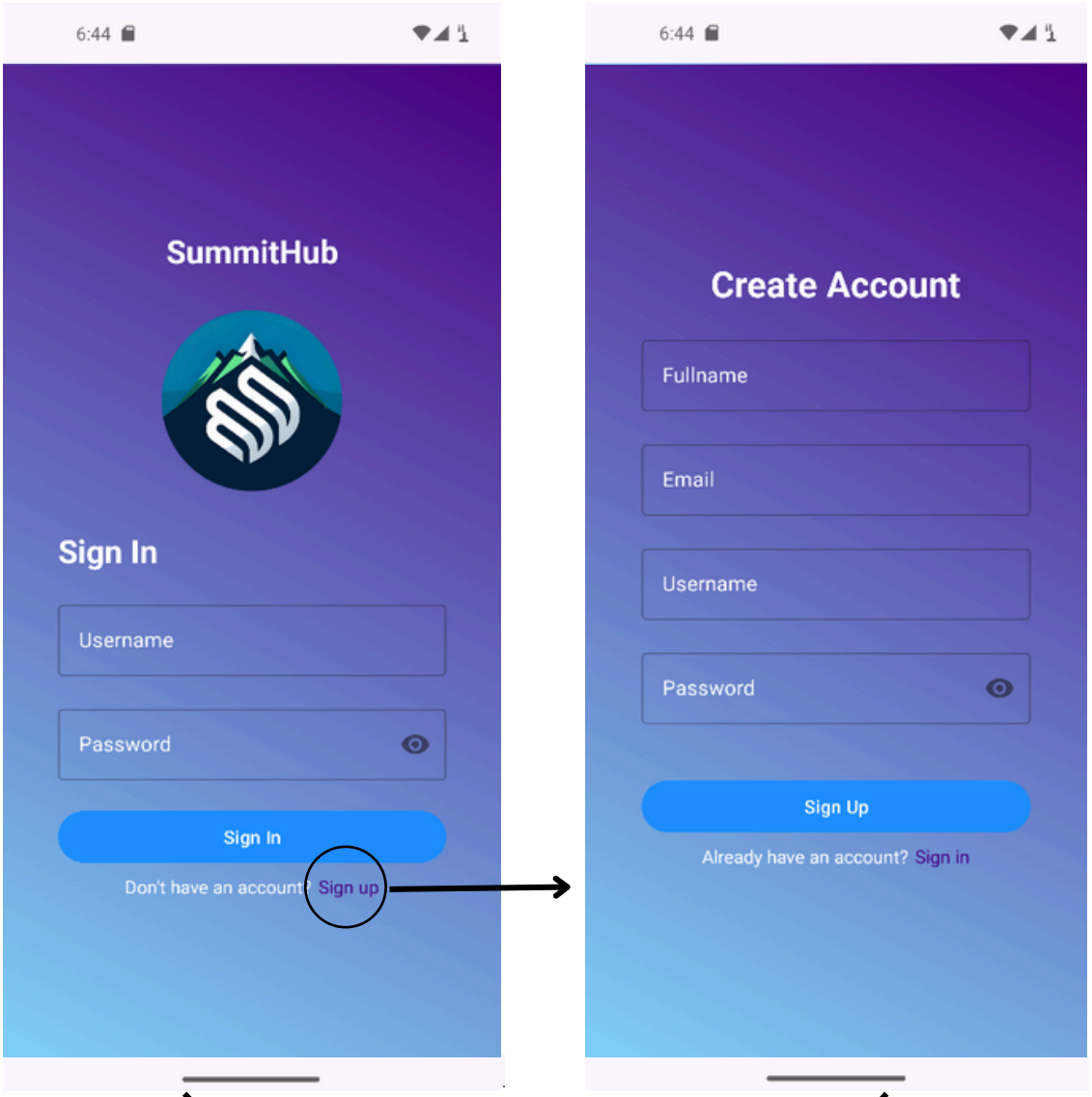
Article Detail

Schedule



Map

Storyboards



After Sign In


Profile
Diogo Oliveira
Email
diogo.mig.oli@gmail.com
Username
diogoliveira
Logout
SummitHub
Welcome, Diogo!
Inovação e Impacto: Conferência de Tecnologia AI 2024
Explore o futuro da tecnologia e inteligência artificial na "Inovação e Impacto: Conferência de Tecnologia AI 2024". Esta conferência multidisciplinar reunirá líderes industriais e académicos para debater as mais recentes pesquisas e inovações em áreas críticas como Cibersegurança, Robótica, Videojogos, Saúde, Transportes, Educação, Negócios e Economia. Com sessões que abrangem desde a detecção de ameaças cibernéticas até ao aprendizado profundo para veículos autónomos, a conferência oferecerá visões sobre como a AI está a moldar o futuro em diversos campos. Junte-se a nós para sessões informativas, debates estimulantes e a oportunidade de conectar-se com especialistas e profissionais de todo o mundo.
Home
Articles
Schedule
Map
Camera Permission
Do you accept to open the camera?
No
Yes
Allow Project_DAM to take pictures and record video?
While using the app
Only this time
Don't allow
SummitHub
Search articles
Threat Detection and Response
Techniques for Intrusion Detection
Service Robots: Challenges
Robots in Dynamic Environments
Game Design: Content Generation
AI-driven Player Behavior
AI-Assisted Medical Diagnosis
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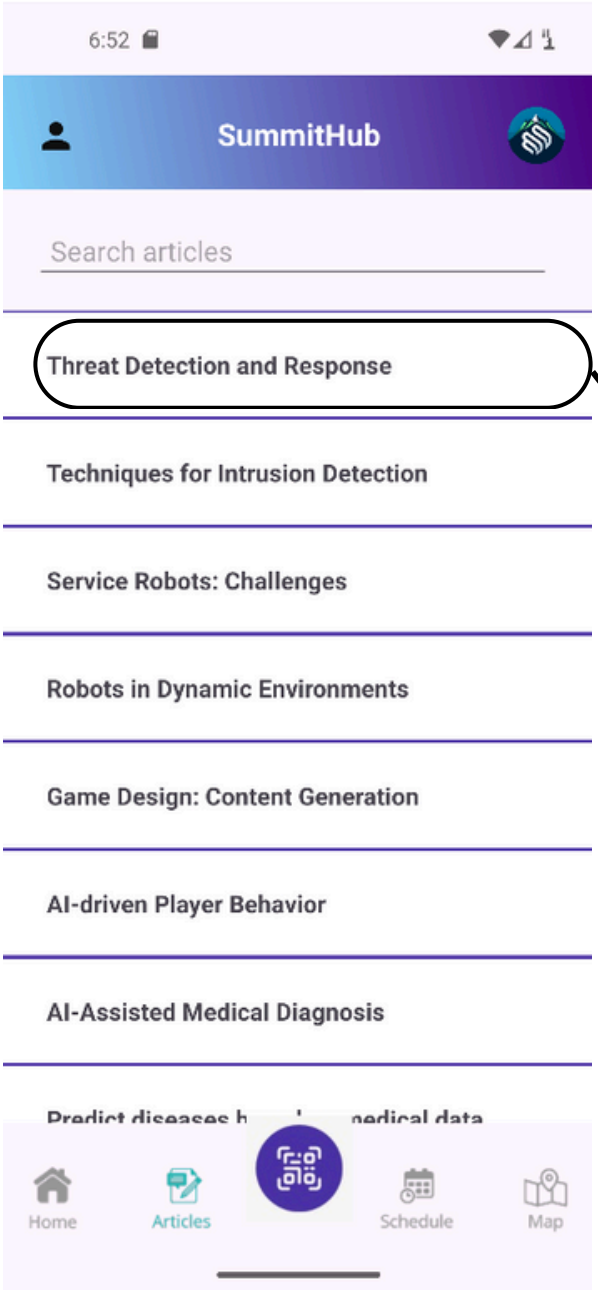
Conference Schedule
01-07-2024
Cybersecurity
10:00 - 11:00
Room: INE
Threat Detection and Response
Author: Jonathan Lee
Techniques for Intrusion Detection
Author: Jessica Wang
01-07-2024
Robotics
10:00 - 11:00
Room: A14
Service Robots: Challenges
Author: Olivia Roberts
Robots in Dynamic Environments
Author: Matthew Green
01-07-2024
Universidade NOVA de Lisboa
Estacionamento Centro Clínico de...
Estacionamento Diário - Palácio da Justiça
Palácio da
Google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Search articles
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Techniques for Intrusion Detection
Service Robots: Challenges
Robots in Dynamic Environments
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AI-driven Player Behavior
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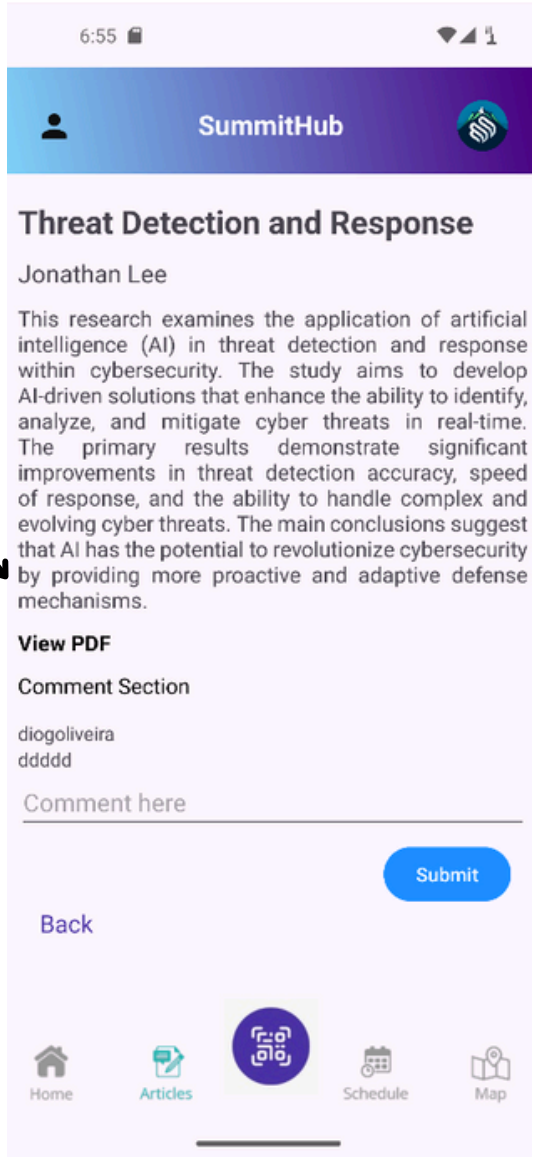
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Threat Detection and Response
Jonathan Lee
This research examines the application of artificial intelligence (AI) in threat detection and response within cybersecurity. The study aims to develop AI-driven solutions that enhance the ability to identify, analyze, and mitigate cyber threats in real-time. The primary results demonstrate significant improvements in threat detection accuracy, speed of response, and the ability to handle complex and evolving cyber threats. The main conclusions suggest that AI has the potential to revolutionize cybersecurity by providing more proactive and adaptive defense mechanisms.
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Comment Section
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ddddd
Comment here
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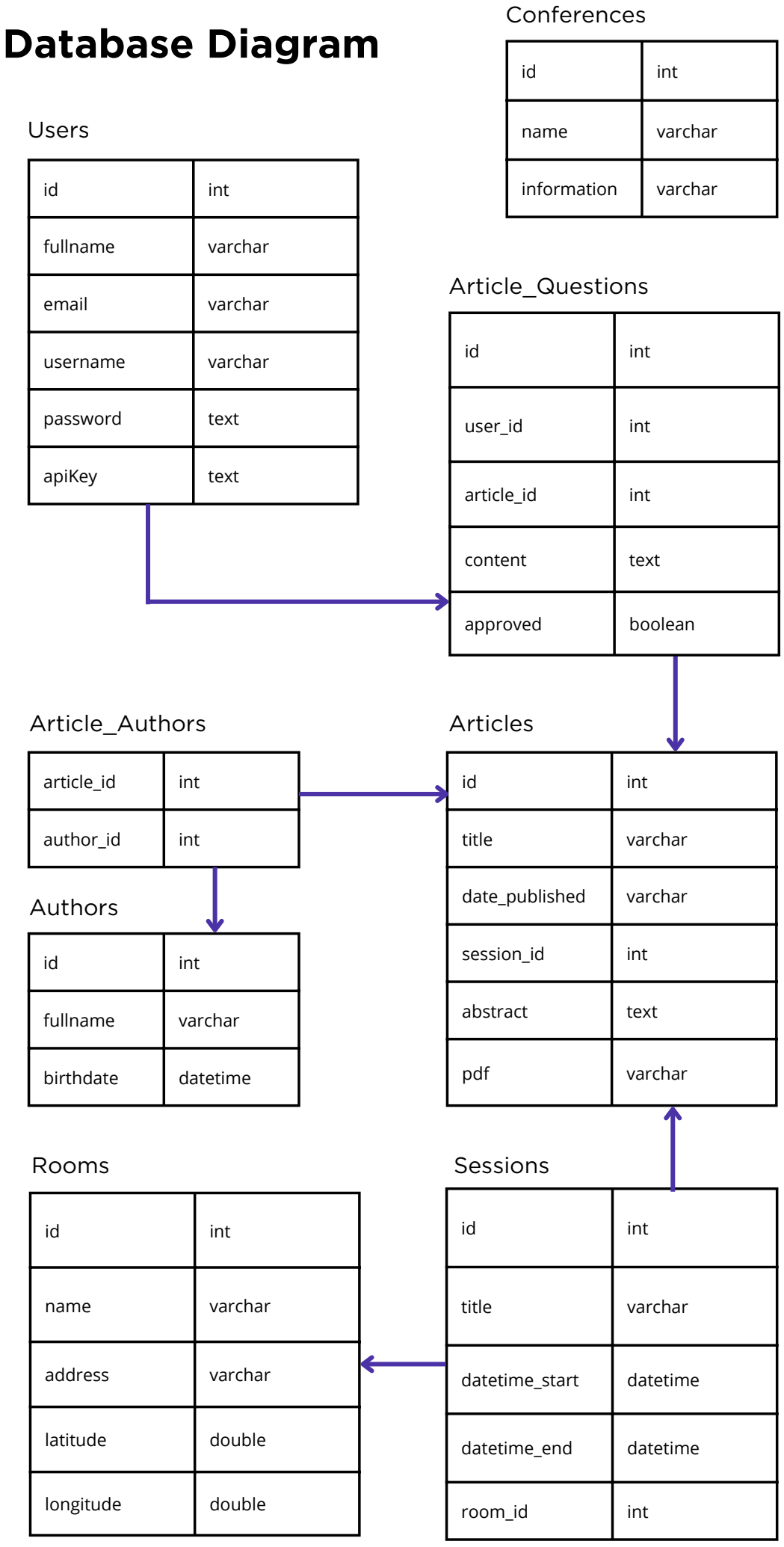
Database Diagram



Functionalities

Implemented Functionalities:

- User Authentication:

- Login/Create Account: Users can securely create a new account or log in to an existing account using their credentials.

- Conference Details Visualization:

- Schedule Screen: Displays the conference schedule, including all sessions, times, and locations.

- Map Screen: Shows the localization of the conference with a detailed map for easy navigation.

- Article Management:

- Article List: A screen that displays all the articles related to the conference.

- Article Details: Users can view detailed information about each article and have the option to download the article in PDF format.

- Search Bar: Allows users to search for specific articles by keywords.

- QR Code Scanning:

- Camera Integration: A screen that opens the phone's camera to scan QR codes for quick access to conference information or articles.

- User Profile Management:

- Change Profile Picture: Users can update their profile picture from the settings.

- Logout: Users have the ability to log out of their account securely.

- Article Interaction:

- Comments: Users can write comments on each article to facilitate discussions and share insights.

Functionalities

Not Implemented Functionalities:

- Push Notifications: The feature to send push notifications to users about conference updates or new articles was not implemented.
- Offline Mode: An offline mode to access the conference schedule and articles without internet connectivity was planned but not implemented.
- Social Media Sharing: The functionality to share articles or conference details directly to social media platforms was not developed.

Functionalities

Detail of Main Functionalities:

- User Authentication:

- The login and account creation functionality ensure that user data is secure and only authorized users can access specific features of the app. We implemented form validation and secure password storage to enhance security.

- Conference Details Visualization:

- The schedule screen provides a comprehensive view of all sessions, helping attendees plan their day effectively. The map screen aids in navigating the conference venue, enhancing user experience.

- Article Management:

- The article list and detailed view allow users to access a wealth of information related to the conference. The ability to download articles in PDF format is particularly useful for offline reading and archiving. The search bar facilitates quick and easy access to specific articles, improving usability.

- QR Code Scanning:

- Integrating the camera functionality to scan QR codes streamlines the process of accessing additional information, making the app more interactive and user-friendly.

- User Profile Management:

- The ability to change profile pictures and log out provides users with control over their personal information and account security.

- Article Interaction:

- Enabling comments on articles fosters community engagement and allows users to share their thoughts and feedback, enhancing the overall value of the content provided.

Technologies used

For the development of our Android application, we employed a variety of technologies and tools to ensure a seamless and efficient workflow. Below is a detailed list of the technologies used in different components of our project:

- Android Application Development:

- Android Studio: Our primary Integrated Development Environment (IDE) for building the Android application. It provided us with the necessary tools and functionalities to develop, test, and debug our app.
- Kotlin: The primary programming language used for writing the Android application code. Kotlin's modern features and compatibility with Java made it an ideal choice for our project.
- XML: Used for designing the UI components of the Android application. XML files allowed us to create a structured and visually appealing user interface.

- Backend Development:

- Visual Studio: Utilized as our development environment for writing backend code. Visual Studio provided a comprehensive set of tools for coding, testing, and debugging our backend services.
- PHP: The server-side scripting language used to develop the backend logic. PHP's simplicity and compatibility with various databases made it suitable for our backend needs.

Technologies used

- Backoffice Development:

- Visual Studio: Also used for developing the backoffice component. It allowed us to efficiently manage our PHP files integrated with HTML and CSS.

- PHP, HTML, and CSS:

- PHP: Handled the server-side operations and logic within the backoffice.

- HTML: Used for structuring the content and layout of the backoffice interface.

- CSS: Applied for styling and enhancing the visual appeal of the backoffice interface.

- Database Management:

- XAMPP: A free and open-source cross-platform web server solution stack package. XAMPP provided us with an easy-to-use platform for setting up our local server environment.

- phpMyAdmin: A web-based database management tool used to manage our MySQL database. It offered a user-friendly interface for database administration tasks such as creating tables, executing SQL queries, and managing data.

- Localhost: Our development environment was set up on localhost, facilitating easy access and management of our database during the development phase.

Problems encountered

During the development of our Android application in Android Studio, our team faced several challenges, primarily related to the backoffice and backend components of the project. These issues are detailed below:

- Backoffice Development for Admins:

- Complexity in UI Design: Designing a user-friendly and efficient backoffice interface for administrators proved to be more complex than anticipated. We had to ensure the interface was intuitive while providing comprehensive functionalities.

- Role-Based Access Control: Implementing a robust role-based access control system to manage different administrative permissions was challenging. Ensuring the security and proper segregation of duties required meticulous planning and testing.

- Database Connectivity:

- Database Schema Design: Creating an optimal database schema that could handle the application's data requirements while maintaining performance was a significant task. We had to iterate several times to ensure the schema was efficient.

- Establishing Secure Connections: Ensuring secure and reliable connections between the backoffice and the database involved overcoming issues related to network configurations, SSL certificates, and firewall settings.

Problems encountered

- Backend Development:

- API Development and Integration: Developing and integrating APIs to handle data requests between the backend and the front-end application involved several hurdles. Ensuring data consistency, handling edge cases, and managing API response times required substantial debugging and optimization.

- Fetching Data from Backoffice and Database:

- Data Synchronization: Ensuring real-time synchronization of data between the backoffice, database, and the mobile application was a complex task. We encountered issues with data lag and inconsistency that required significant effort to resolve.

These challenges highlighted the importance of thorough planning, continuous testing, and iterative development in successfully integrating the backoffice and backend components with our Android application. Despite these difficulties, we were able to overcome them and deliver a functional and robust application.

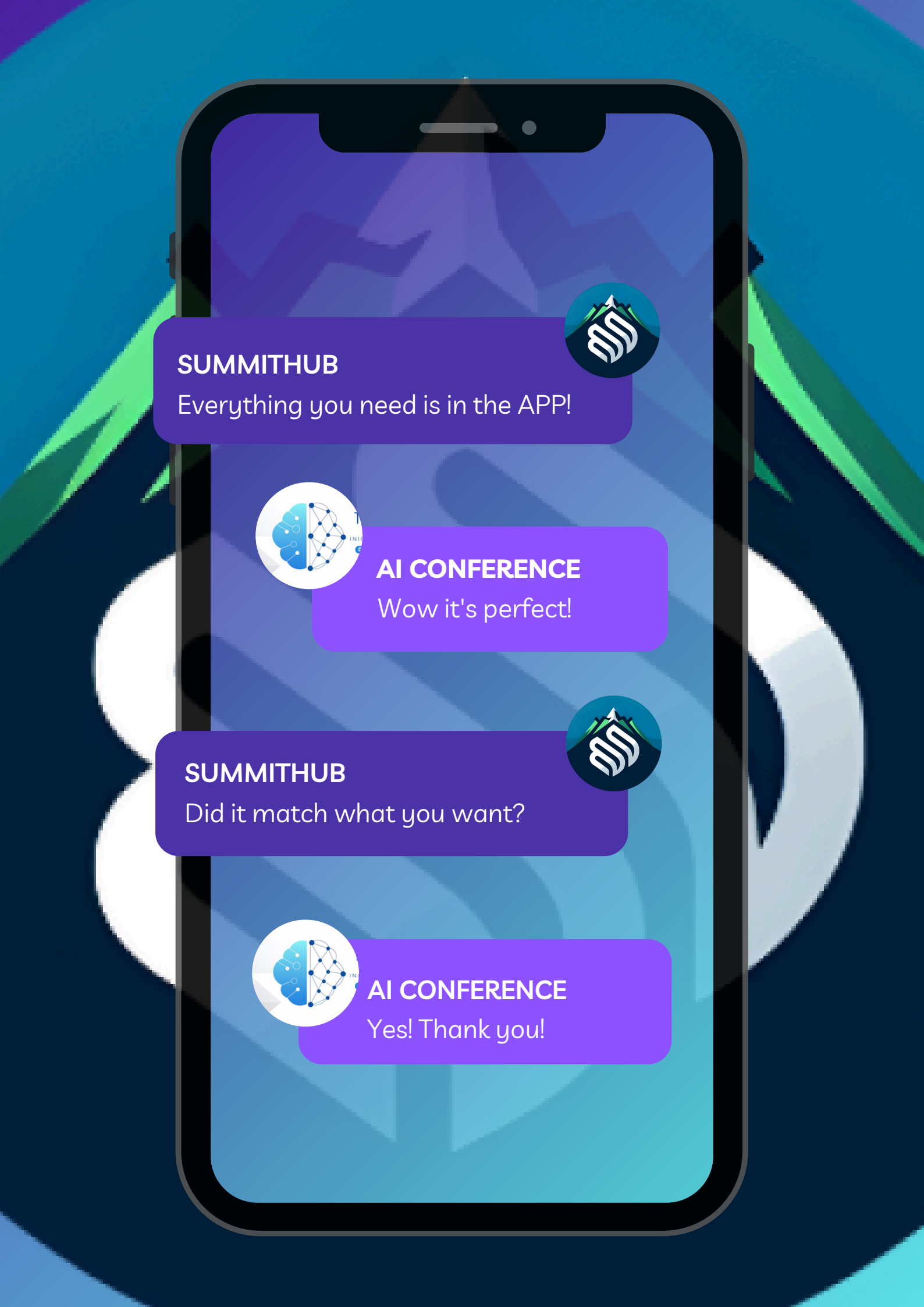
Conclusion

The development of our mobile application was driven by the need to enhance the organization and participation in scientific conferences. Recognizing the complexities and challenges inherent in managing medium to large-scale events, our application aims to provide a streamlined and user-friendly solution for conference attendees. By leveraging modern technologies and robust design principles, we have created a tool that not only facilitates easy access to essential conference information but also enriches the overall experience for participants.

Our application includes several key functionalities that address the specific needs of conference attendees. From detailed schedules and interactive maps to comprehensive article listings and real-time QR code scanning, we have ensured that users have all the necessary tools at their fingertips. The ability to comment on articles and update user profiles further enhances user engagement and personalization.

Throughout the development process, we encountered and overcame various challenges, particularly in the areas of backoffice and backend development. These obstacles, while demanding, provided valuable learning experiences and ultimately contributed to the robustness and reliability of the final product. Our use of Android Studio for the mobile application, Visual Studio with PHP for backend services, and XAMPP with phpMyAdmin for database management allowed us to build a cohesive and efficient system.

In conclusion, our application successfully addresses the complexities of managing and participating in scientific conferences. By providing an intuitive interface and a suite of powerful features, we have created a tool that not only simplifies the logistical aspects of conferences but also promotes greater interaction and knowledge sharing among researchers. As digital solutions continue to evolve, we are confident that our application will serve as a valuable asset for future scientific conferences, enhancing the experience for all participants.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