Hackathon Project Description: Gamified Grade Tracker App - RankED

By: Jūrmala State gymnasium programming team

Source code for the project is available at: https://github.com/Elgarsc/DigiEduHack2024

Link to video pitch/presentation:
https://www.youtube.com/watch?v=JYmdnSqL5Qo&ab_channel=Mat%C4%ABssMeiers

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Overview:

This project is an Android app that brings a fun, gamified approach to academic tracking, helping students stay engaged with their grades and assignments. Built in Android Studio using Kotlin, the app uses a points-based system where users earn points and can view their ranking on a leaderboard based on academic performance. The app also features two widgets for easy access to the latest grades, homework, and upcoming tests. This app is designed to receive data inputs via an API connection with online schooling platforms, allowing for the seamless retrieval of grades and assignments in real time.

Key Features:

1. **Gamified Grade Tracking**:

   o Users can input grades per subject, which are then converted into points.

   o A point system awards achievements and badges, encouraging students to improve their scores.

   o An interactive leaderboard ranks users by points, promoting friendly competition.

2. **Widgets**:

   o **Homework and Tests Widget**: Organizes and displays upcoming homework and test dates by subject and date. Built with OOP principles, this widget offers easy customization.

   o **Latest Grades Widget**: Displays the user's most recent grade in a compact view, offering quick access to the latest performance.

3. **API Integration for Automated Data Import**:

   o The app relies on an **API connection with online schooling platforms** to fetch up-to-date grade information and assignment details, so it is only functional if there is an API for the platform.

   o Using the API, the app can import data from various sources, provided it matches the required list-based structure:

- Grades: (subject, date, grade)
- Assignments/Tests: (date, subject, isTest: Boolean, homework)
  - This API integration reduces the need for manual data entry, enabling a seamless experience for students to track their progress in real time.

Technical Stack:

- **Language**: Kotlin

- **Platform**: Android

- **Development Tools**: Android Studio

Potential Challenges and Considerations:

1. **API Permissions and Integration**:
   - **Permissions**: To access grades and assignments directly from school platforms, the app requires API permissions from these platforms. This can involve collaboration with school IT departments and compliance with institutional policies.
   - **Data Privacy and Security**: Handling academic information from API responses requires robust security to ensure data protection, especially when dealing with minors' information.
   - **Reliable API Access**: The app's functionality depends on the reliability of the connected API. Changes or downtimes in the API's service can affect the data consistency within the app.

2. **User Authentication**:
   - The app must establish a secure authentication system to verify users' access to their respective school's API. This process can involve authorization protocols to ensure safe connections and data integrity.

3. **Scalability and Customization**:
   - The app should support various school platforms' grading and assignment formats, requiring flexible and adaptable API endpoints.

Conclusion:

The Gamified Grade Tracker App combines productivity and motivation, making academic tracking a rewarding experience for students. Through the integration of an API connection with online school platforms, the app offers real-time access to grades and assignments, enhancing usability

and convenience. This project is designed for scalability and could serve as a model for future educational apps looking to incorporate gamified elements and API-driven data synchronization.

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