BrainMe
A Quiz Application

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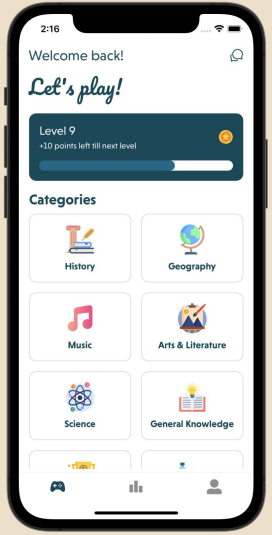
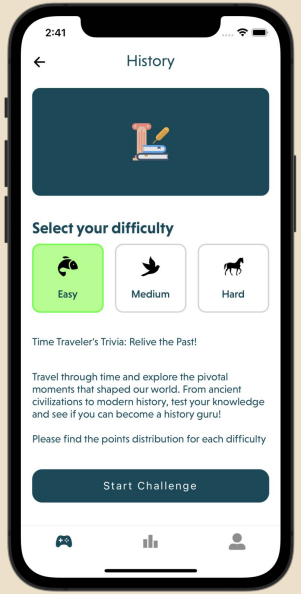
What is BrainMe?



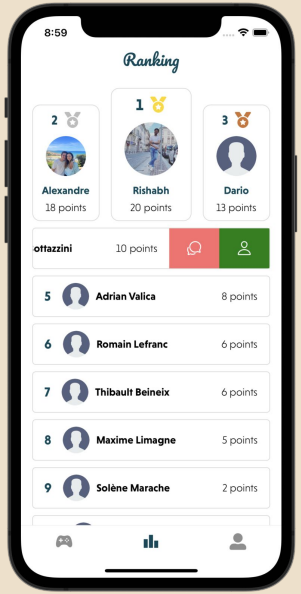
- A quiz application
- Choose your own topics

- Select difficulty level
- User guide available



- Interactive quiz with timer of 15 seconds
- 5 available questions

- Compete on leaderboard
- Add and send messages to users
- Gamified Experience



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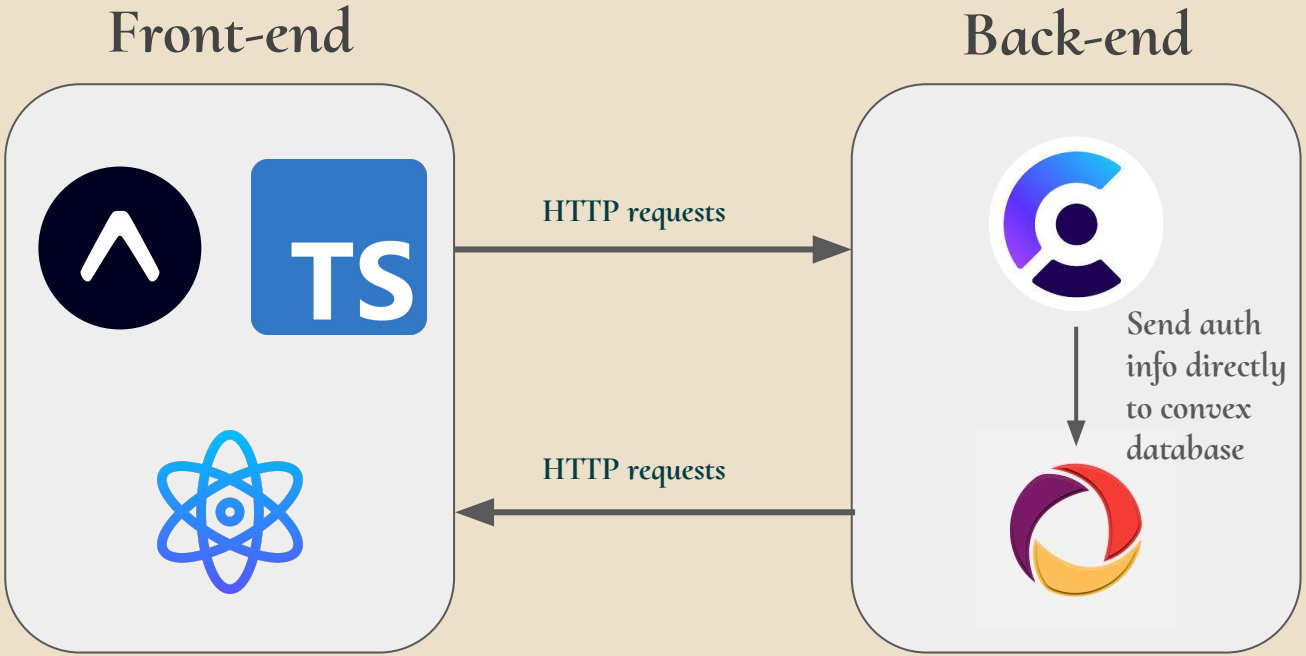
Technology Stack



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Application Overview

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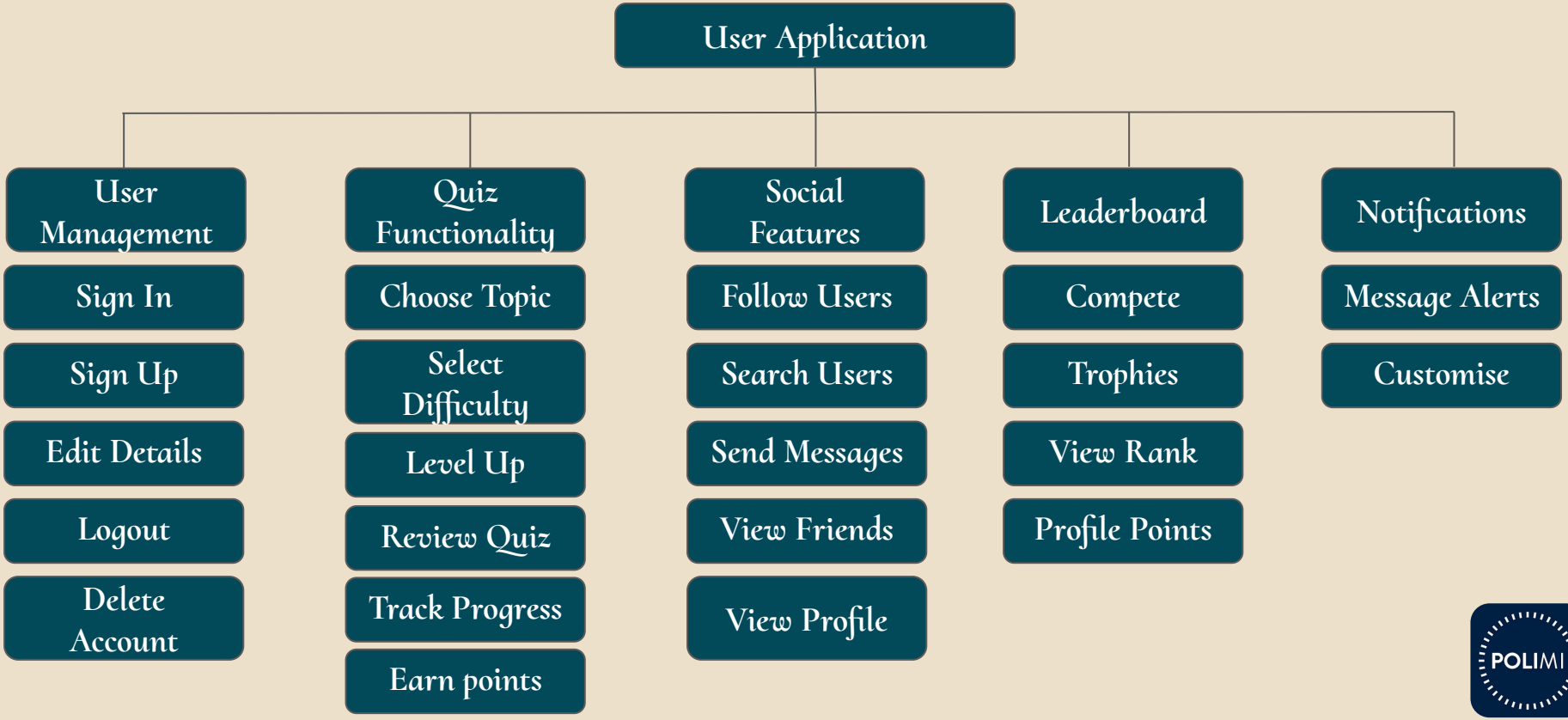
Functional Requirements



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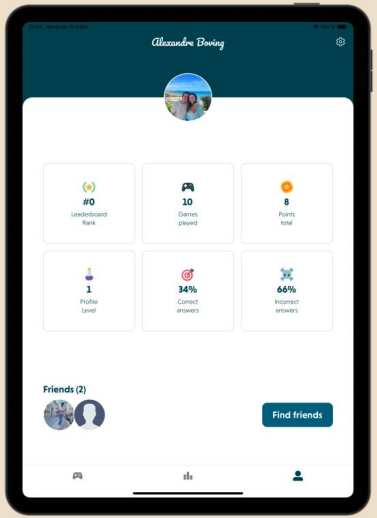
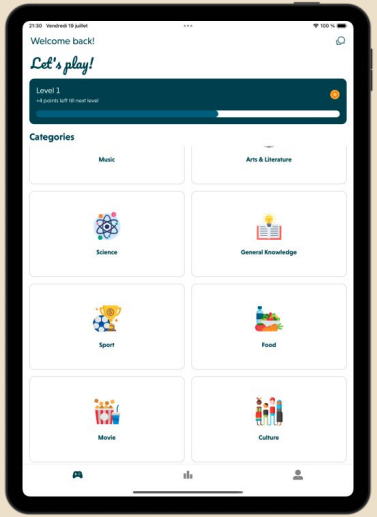
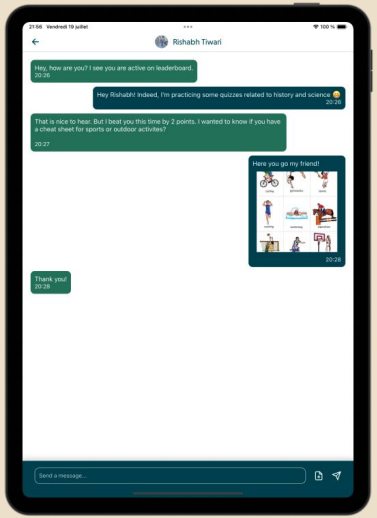
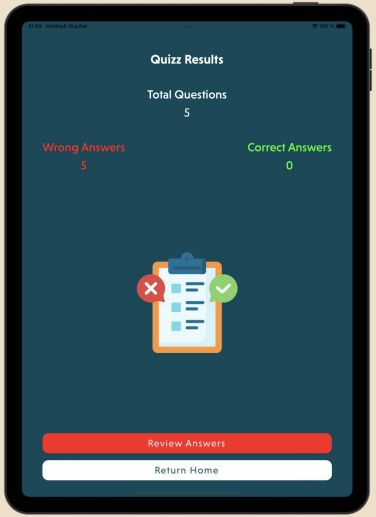
Tablet Support

- BrainMe offers diverse Tablet screens
- All features retained of Iphone
- Gamified Experience
- Adaptable Element Sizes and Weighted Design









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Architectural Design

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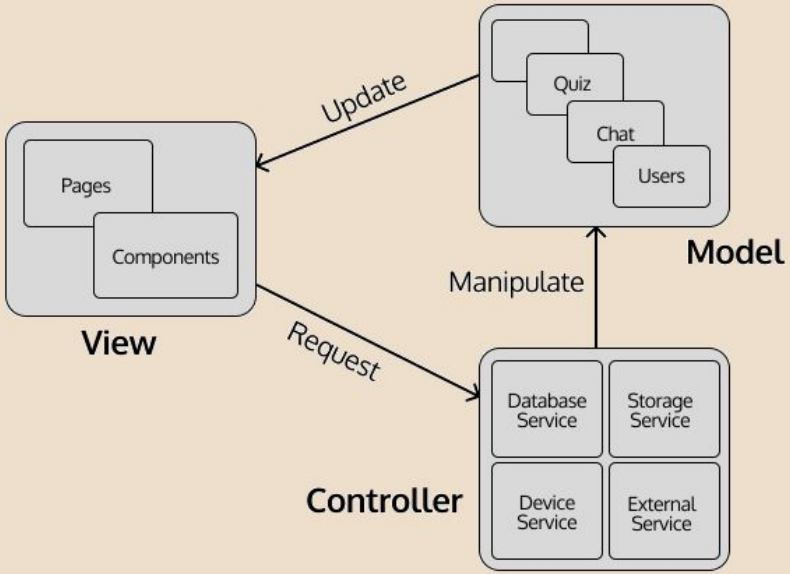
MVC Pattern



- Separation of Concerns
- Easily reusable
- Easy maintenance and modifications
- Increases Scalability

- View:
  - Presents data visually.
  - Updates UI elements.
- Model:
  - Manages application data.
  - Implements business logic.
- Controller:
  - Processes user inputs.
  - Coordinates between model and view.

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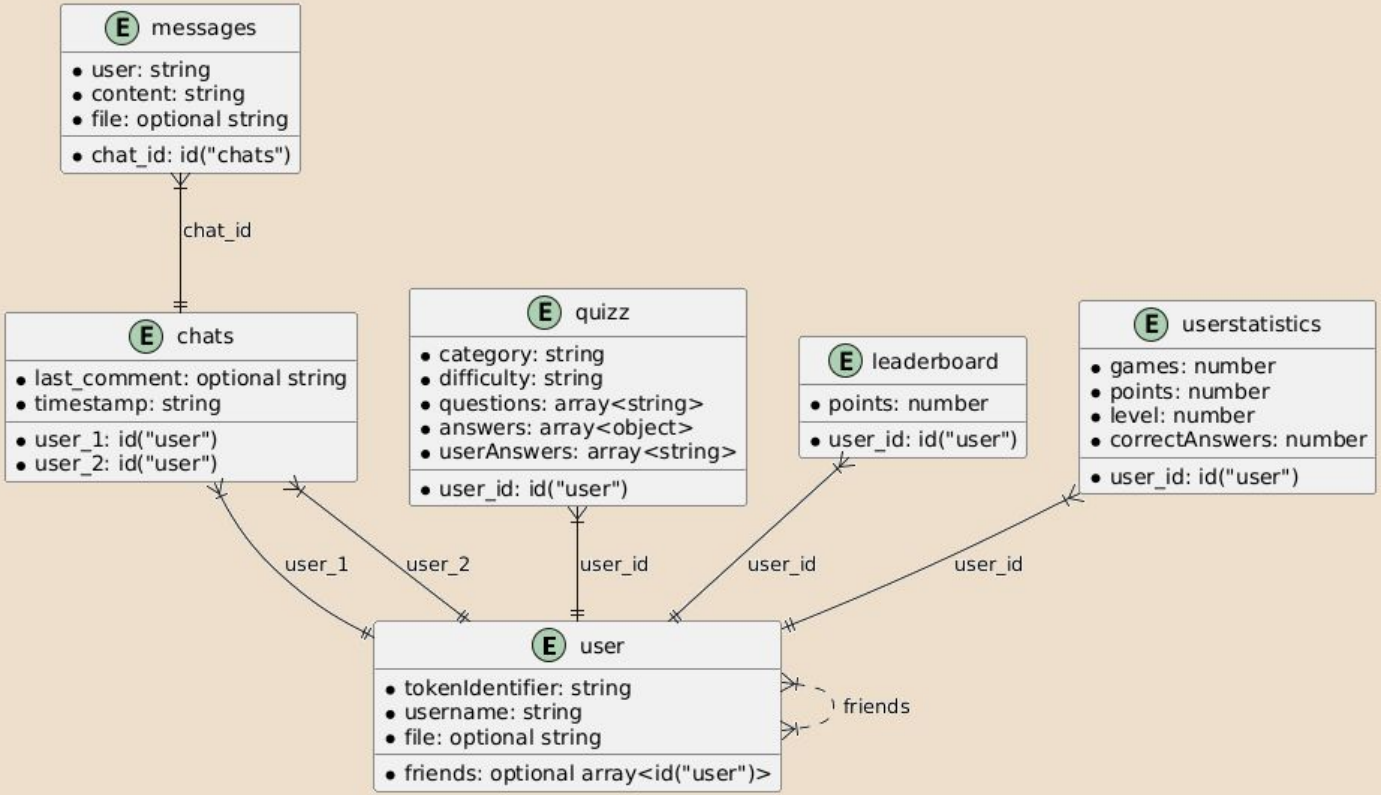
ER Diagram



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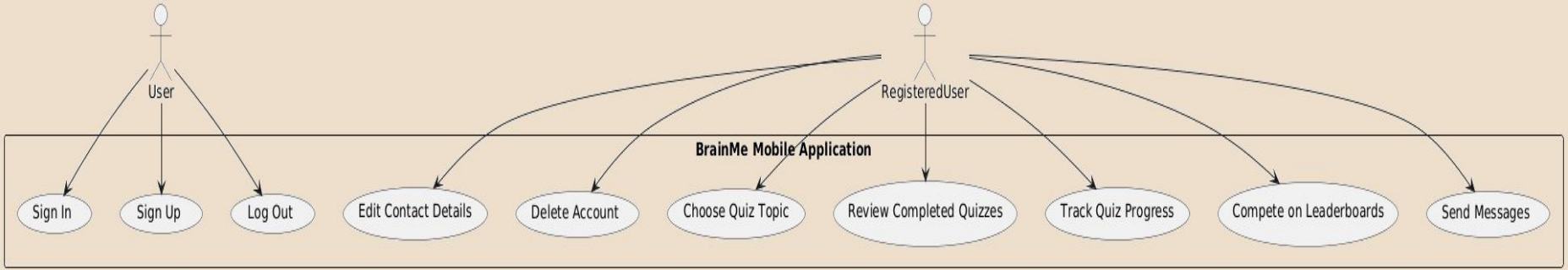
Use Case Diagram



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Implementation

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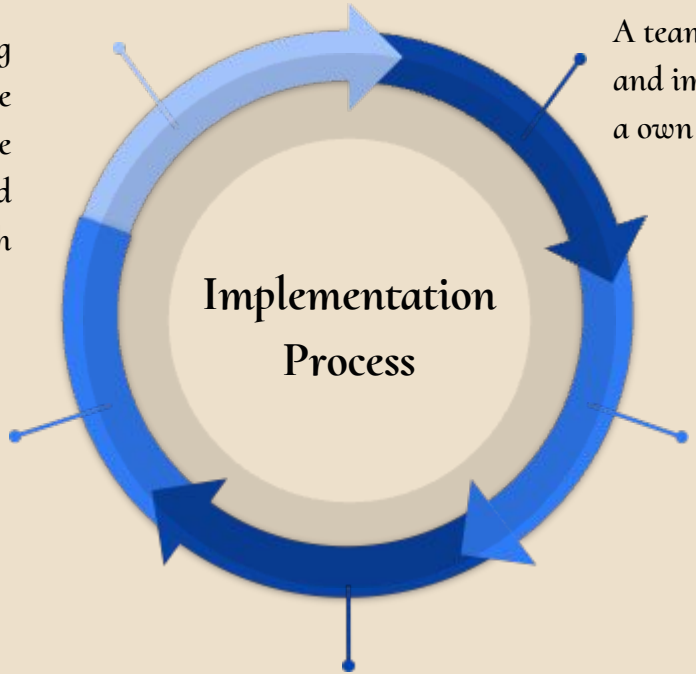
Implementation Process

1. Coding
A team member picks a task and implements this feature in a own branch



2. Push to Github
The team member pushes the branch to the repository on Github and creates a pull request.

3. Automatic testing
The pushed code is automatic tested.
Only if all test pass the process continues.

4. Reviewing
Another Team member reviews the code and approves it

5. Merging
The pull request is merged to the development branch. After each complete feature, the development branch is merged to the production branch

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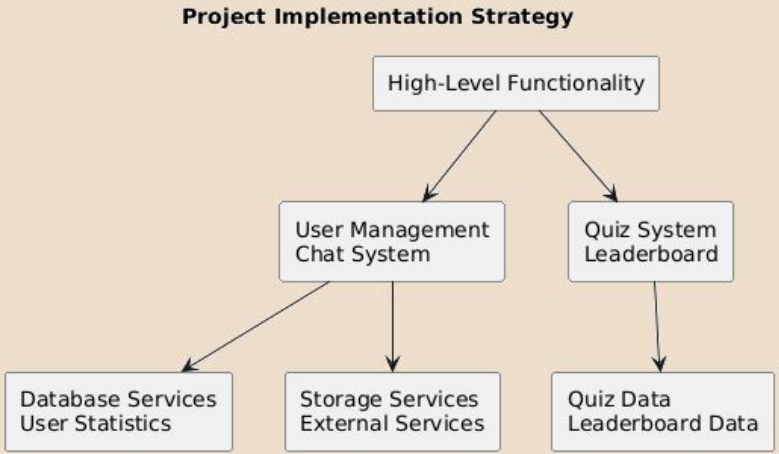
Top Down Integration



- The project implements a Top-Down Integration strategy.
- It begins with the integration of top-level components using stubs for lower-level modules.
- Incremental integration and testing of lower-level components replace the stubs progressively.
- Comprehensive testing ensures the overall system functionality once all components are integrated.

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Testing

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Testing Details

- 100% of the functional requirements were tested.
- 29 unit tests were performed covering each and every component.
- Widget tests and automatic testing were also performed.
- Goal was to achieve at least 80% coverage.
- It helped us to identify the issues quickly and fix issues.
- Lastly, we also performed user testing by making other users try our application.

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Testing Details

File	% Stmts	% Branch	% Funcs	% Lines
All files	91.15	65.78	92.59	91.15
app	85.71	75	81.81	85.71
sign-up.tsx	89.28	90	100	89.28
welcome.tsx	83.33	60	71.42	83.33
app/(app)/(profile)/accounts	100	50	100	100
family-name.tsx	100	50	100	100
assets/images/auth	100	100	100	100
apple.png	100	100	100	100
facebook.png	100	100	100	100
google.png	100	100	100	100
components/auth	100	56.25	100	100
action-button.tsx	100	50	100	100
auth-social-button.tsx	100	50	100	100
footer-text.tsx	100	100	100	100
input.tsx	100	100	100	100
separator.tsx	100	100	100	100
structure.tsx	100	50	100	100
constants	100	100	100	100
Colors.ts	100	100	100	100
hooks	100	100	100	100
useWarmUpBrowser.ts	100	100	100	100

Suites (9)
- 9 passed
- 0 failed
- 0 pending

Tests (29)
- 29 passed
- 0 failed
- 0 pending

/Users/icon1c/Desktop/BrainMe/BrainMe/__tests__/sign-up.test.tsx 0.62s

SignUp Screen	*renders without crashing and allows user to sign up*	passed	0.267s
SignUp Screen	*renders verification screen after sign up*	passed	0.016s
SignUp Screen	*verifies user email with code*	passed	0.026s
SignUp Screen	*handles sign-up error*	passed	0.025s

/Users/icon1c/Desktop/BrainMe/BrainMe/__tests__/structure.test.tsx 0.092s

Structure Component	*renders correctly with title and subtitle*	passed	0.037s
Structure Component	*renders children components*	passed	0.002s
Structure Component	*applies safe area insets correctly*	passed	0s

Adrian Valica: EPFL, 20, Male, Computer Science Student

- **Installation:** Adrian found the installation process easy and quick.
- **Login and Registration:** He registered using his email and appreciated the smooth process.
- **Quiz Experience:** Adrian enjoyed the computer science quizzes. He found the questions challenging and relevant to his studies.
- **Leaderboard:** The leaderboard feature was exciting for him. It encouraged him to participate more actively.
- **Feedback:** Adrian suggested adding more advanced computer science topics. He also recommended enhancing the app's design for better user experience.

Demonstration

Conclusion

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Conclusion

- Learning curve was very high due to our implementation methodology and following agile principles.
- Writing tests was a major learning. It helped to resolve bugs and debug immediately.
- User testing gave a wide opening for further improvements
- We want to improve the app by creating virtual study rooms :
    - Enabling users to gain knowledge together and resolve problems
- More language support to engage users all around the world.
- Downloading the quiz and solutions offline to make the learning experience even better.

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Thank You

Any Questions?

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