Vigilance - Tiredness and Sleep benchmark

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AUT

Project Overview

Project Purpose

The purpose of the 'Vigilance' app is to test the users alert level and advise on whether they should or should not be driving. However, the app can also be applied for self-care, to ensure you don't burn out from extended work periods. The app works by having the user go through a series of tests to determine their reactive state. This would preferably be done the first time the app is used in order to determine a baseline reading of the user's awareness and responsiveness in a neutral state. Any further use of the app would compare test scores with the baseline scores and advise the user.

Methodology: Agile Development

The agile software development methodology has recently become one of the most
popular used software development techniques. Rather than the continuous drawn-out release
cycles in the waterfall methodology, the agile technique suggests regular short bursts of development in the form of Sprints. This allows customers and stakeholders to have more involvement in the software development process. We are fortunate to have a client that is available to meet as frequently as we may need. This fits great for the agile approach method as one of the key concepts are incremental improvements through stakeholder input. This helps deliver a higher quality
final product because it combats the difficult task of the client fully understanding and
identifying all requirements in the software project planning phase.

Project Beginnings

Initially, our project was to create a portable, voice reading application for the deaf and elderly so that they could still enjoy reading without the need for sight. However, the reading application conflicted with time constraints and client de-

| Participants	Contents	Date
Client, Team	Figure out requirements for the project.	9th May, 2020
Team, Mentor	Confirm the requirements and object s of the project.	9th May, 2020
Client, Team	Create mockups to help illustrate the app and its purpose, done with the help of the client to ensure everyone was on the same page	12th May, 2020
Team	Establish a development plan.	14th May, 2020

Objectives

- The application will benchmark the users reactions.
- The audience of the app was universal, so it had to be usable by children, adults or elderly
- Give the user advice on whether or not they should consider operating heavy machinery, specifically driving but can be applied in similar situations .
- Provide the user with personal statistics of their reactions scores overtime.
- Direct the user towards more information on the dangers of tiredness and sleep depravity

The Process

Research and Upskilling

When our project began only one of us had experience with Android app development, so time was spent upskilling not only Java but also Android app creation and using Android Studio IDE. Luckily there are great tutorials online for anyone wanting to develop an app regardless of experience, the one we used in particular was the official Google app development tutorial series. This was a great resource as it teaches great coding practices without cutting corners and ensuring the app is easy to develop upon for not just an individual but also large groups of developers.
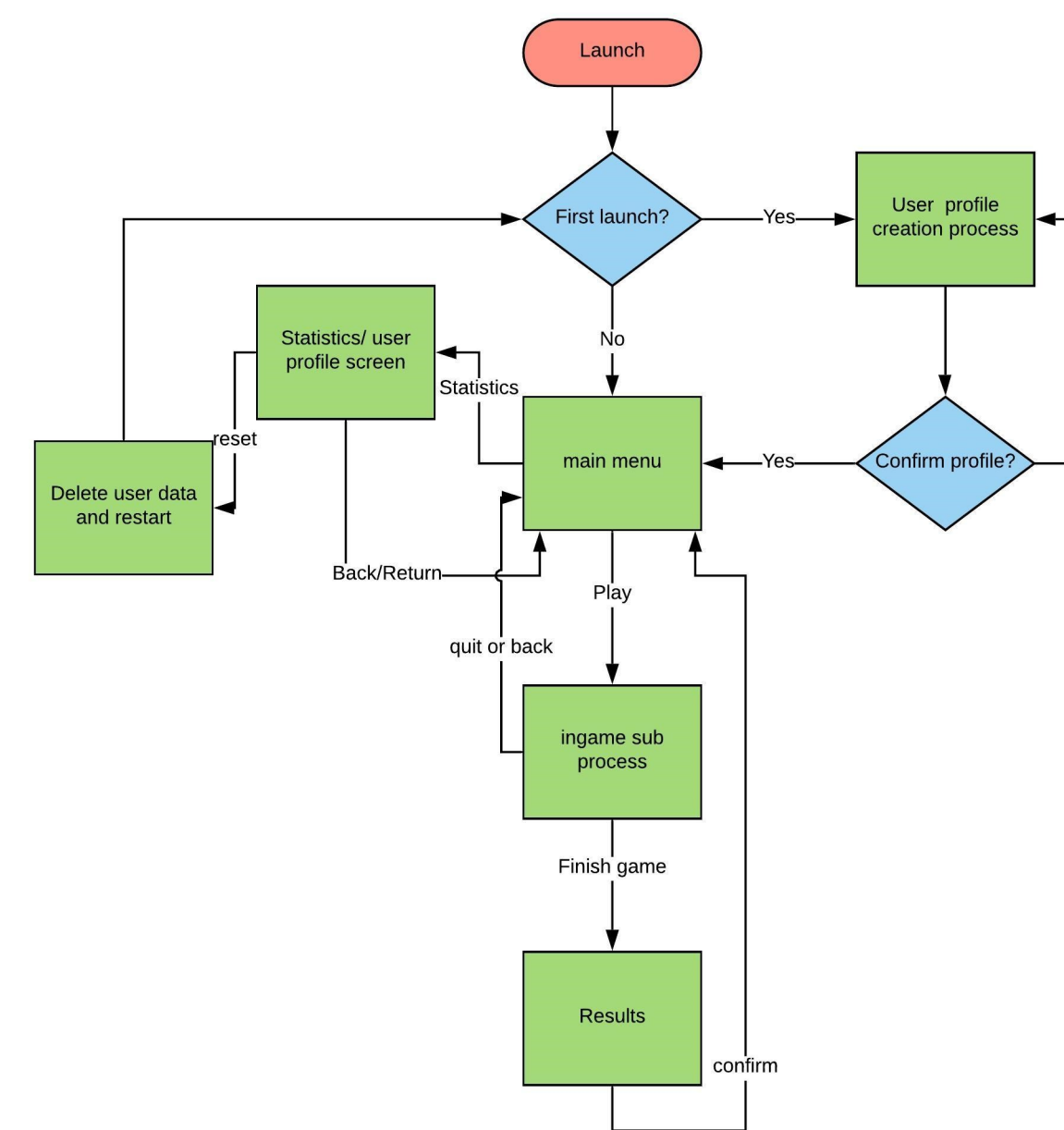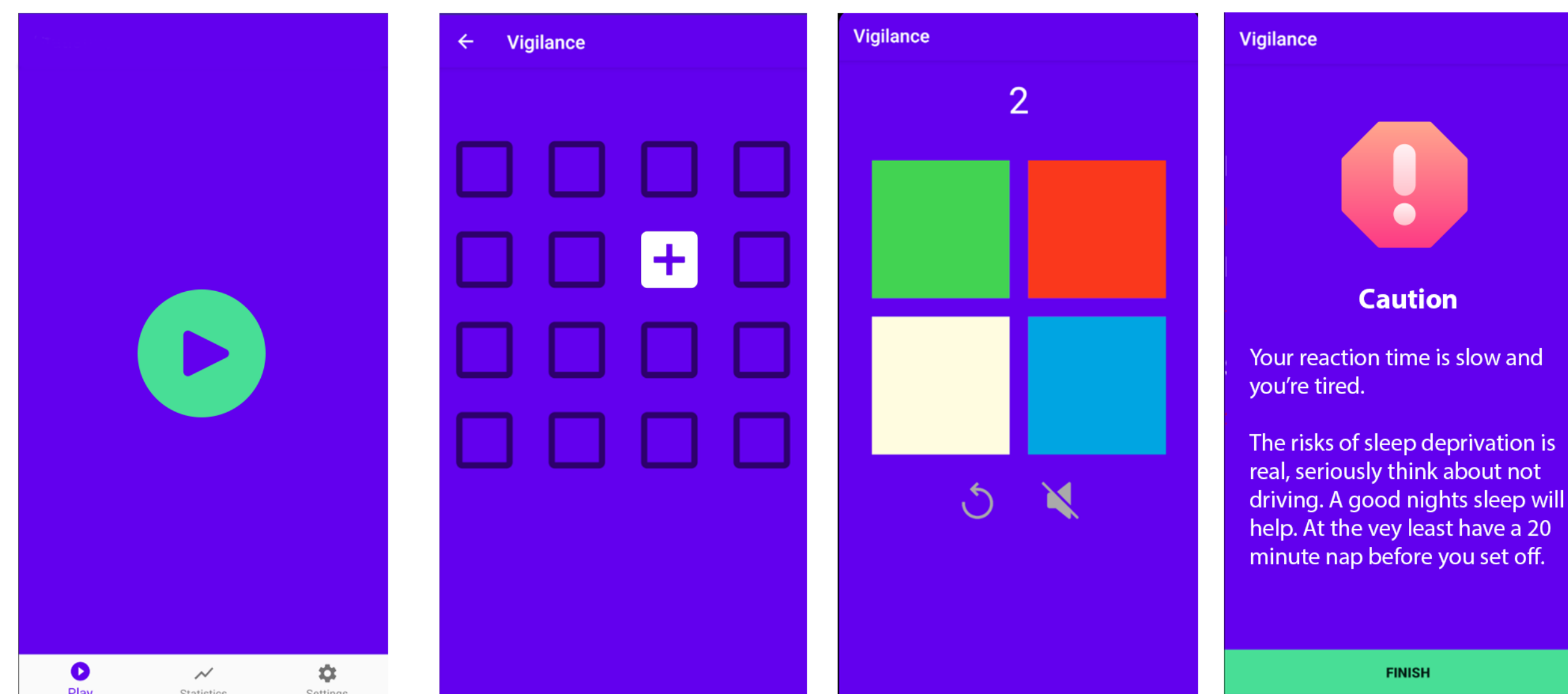

Main application flow diagram
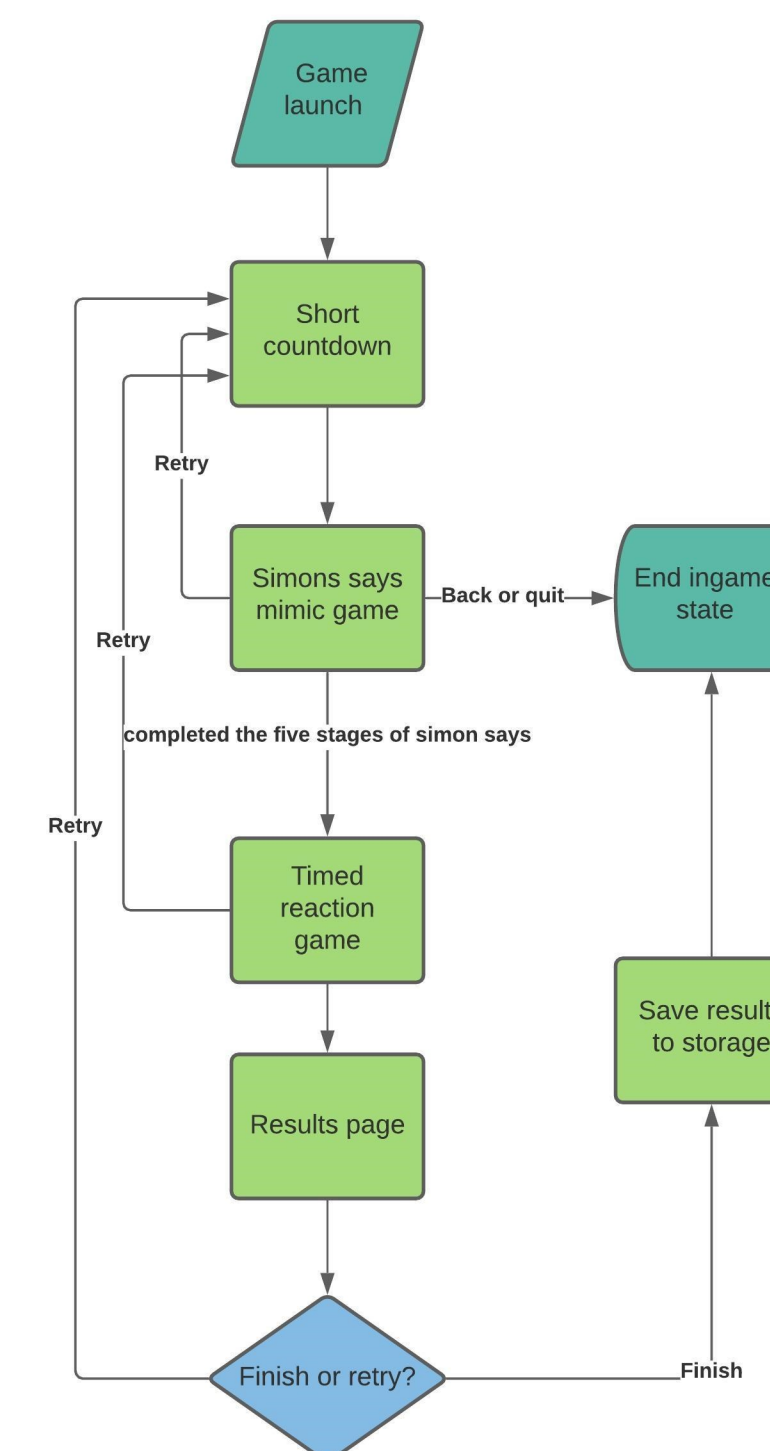
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Product Showcase

Challenges/Reflection

Technical Issue:

- The UI and UX design was difficult to work with specifically since there are a lot of dynamic elements, this was mostly because either of us had experience with development good UI.
- The game logical was difficult to start with due to frame timings and UI elements working in sync.
- Storing game scores and data was difficult as it had to be readable by a specific library that we were using to create graphs on android.

Non-technical issues:

- Setting up the initial development environment was tedious due to the fact some members had not used GitHub before.
- Communication was an issue due to the ongoing COVID situation, this made it much harder to organize during the first half of the project.

References

References

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