THE EXPENSE MANAGER APP

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EXPENSE MANAGER APP

➢Expense management application.

➢Improve the quality of life of people with neurodevelopmental disorders and lower subjective numeracy.

➢Capacity to utilize numerical comprehension in relation to solving everyday problems.

➢Ability to comprehend data.

What is it?

WHY IS IT IMPORTANT?

➢ 1 in 4 adults in Ireland range at level 1 or below out of the 5-level assessment for numeracy.

➢ neurodevelopmental conditions can negatively impair a person in their mathematical ability in day-to-day life(Dyscalculia, ADHD, etc).

➢ Few budgeting applications are specifically aimed at adults with neurodevelopmental disorders and lower subjective numeracy.

➢ can be utilized to solve day-to-day problems.

The Problem

DYSCALCULIA

➢Neuro developmental disorder.

➢Impacts capacity to learn mathematics.

➢6% of people are thought to be affected with dyscalculia.
(https://www.dyslexia.uk.net/specific-learning-difficulties/dyscalculia/)

➢Influence individuals who in any case have ordinary intelligence and cognitive ability.
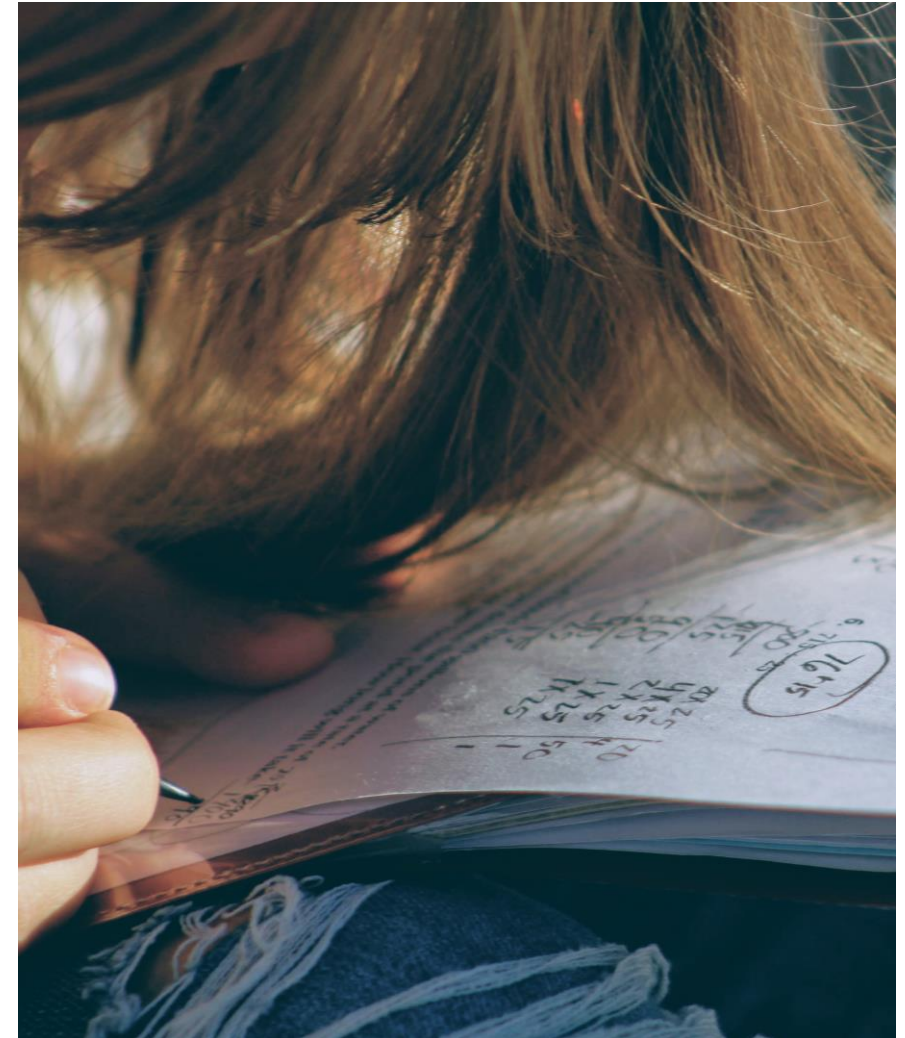
ADHD

➤Another example of a neurodevelopmental condition.

➤between 5.9% - 7.1% of children and young adults have ADHD.

➤can negatively impair a person in their mathematical ability in day-to-day life.

➤ADHD affects an individual's working memory.

MATH ANXIETY/SUBJECTIVE NUMERACY

An individual can experience a severe uneasiness and panic when presented with numerical tasks.

Negatively impact one's capability to complete the mathematical task.

can cause an individual to perceive their numerical ability as poor.

standardised school numeracy tests can cause one to become completely maths avoidant.

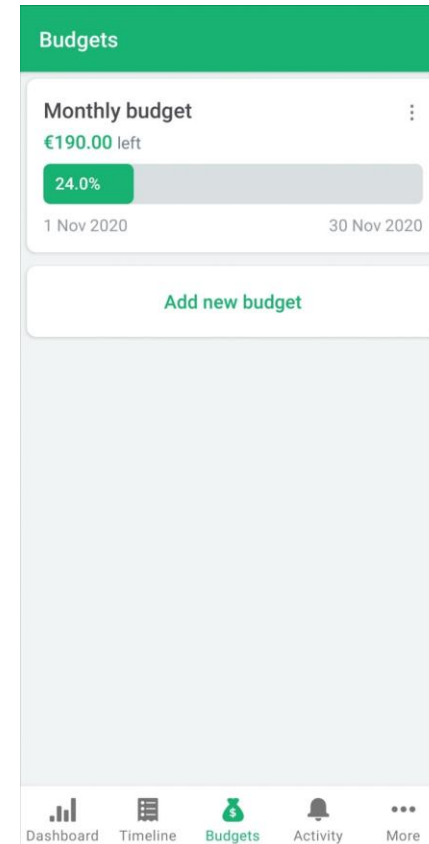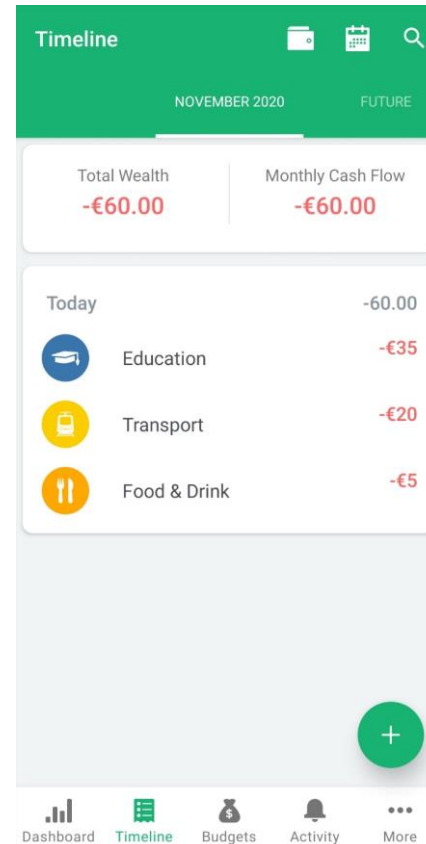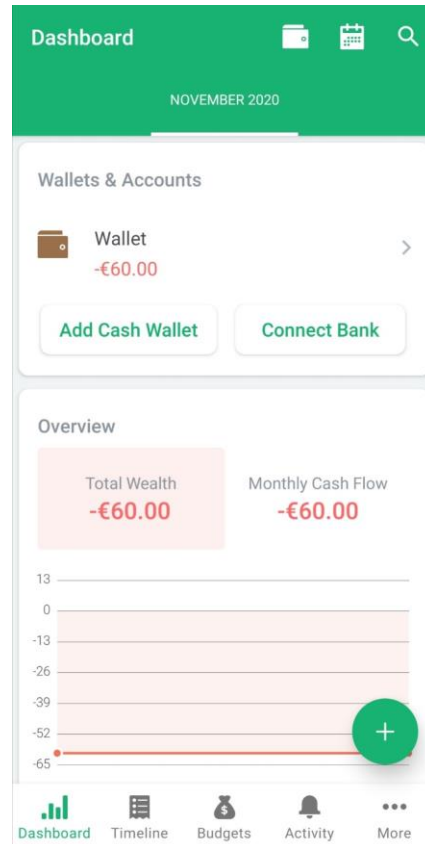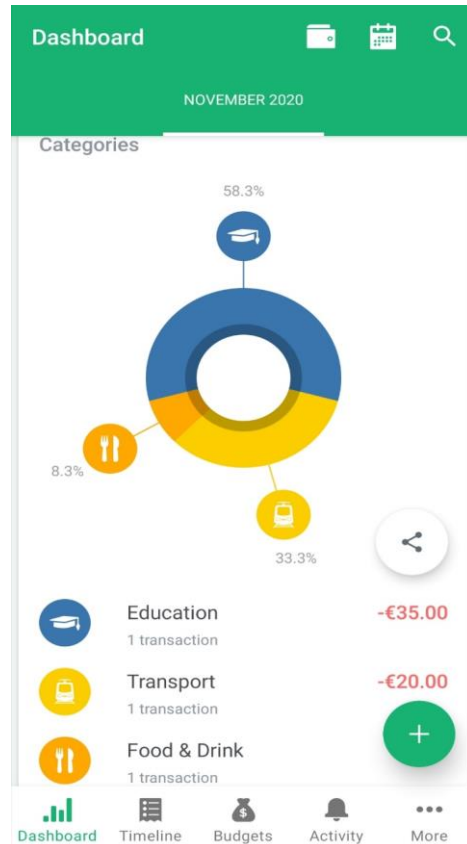May not reflect actual numerical ability.

➢Spendee

➢Monefy

EXISTING APPLICATIONS

SPENDEE

MONEFY

PRELIMINARY SURVEY

Survey conducted with 29 anonymous participants.

51.7% were diagnosed with a neurodevelopmental disorder.

6.3% were diagnosed with Dyscalculia.

75% were diagnosed with ADHD.

44.8% said they had maths related anxiety.

Are you diagnosed with a Neurodevelopmental disorder?

29 responses

- yes
- No

48.3%

51.7%
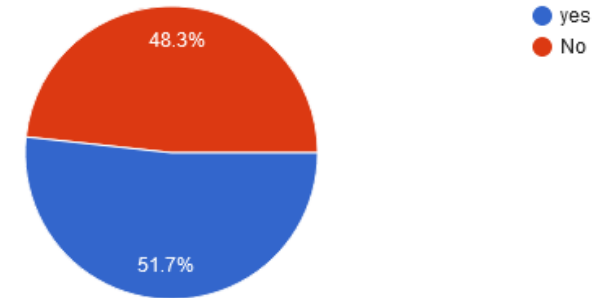
Do you have maths related anxiety?

29 responses

- Yes
- No

55.2%

44.8%
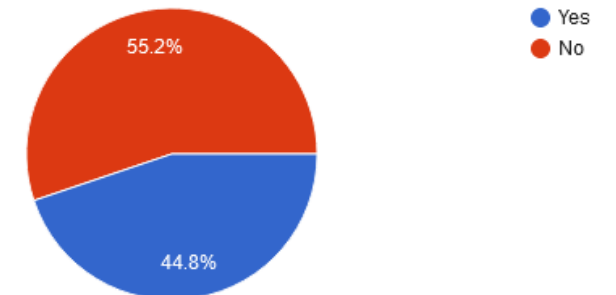
PRELIMINARY SURVEY

64.3% said they had difficulties managing finances.

82% of participants said they did not use an application to manage finances.

When asked "how do you manage your finances instead?" responses varied from excel spreadsheets, pen and paper to using nothing.

When asked "would you consider using one?" 92.3% said yes.

Do you use an application to manage your finances? (i.e bills, food, etc)

29 responses

● Yes
● No

82.8%

17.2%
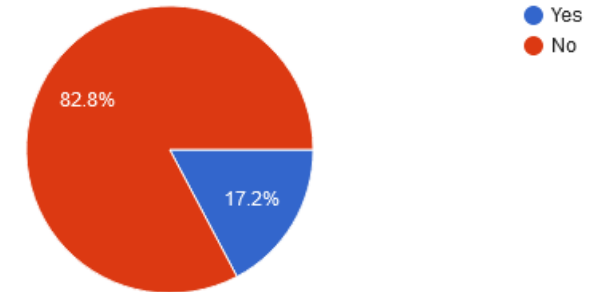
Do you find it difficult to manage your finances?

28 responses

● Yes
● No

35.7%

64.3%
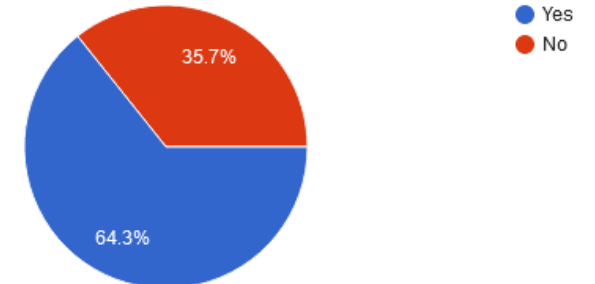
PRELIMINARY SURVEY

Participants were asked "What helpful features would you want in a money managing application?"
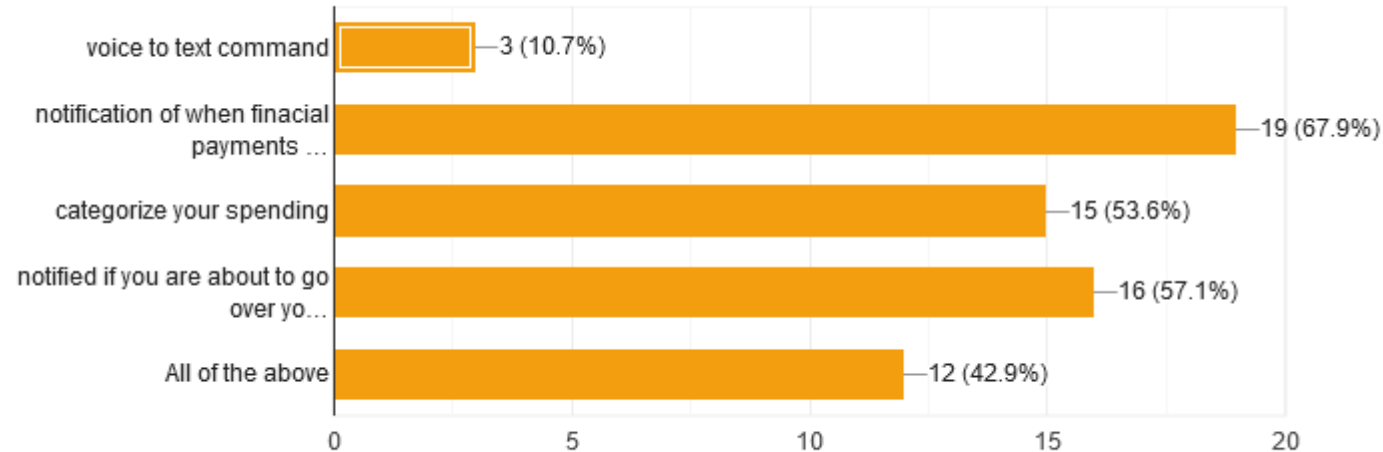
PERSONAS

WIREFRAMES FOR MONEY MANAGEMENT APPLICATION

Login and register screen.
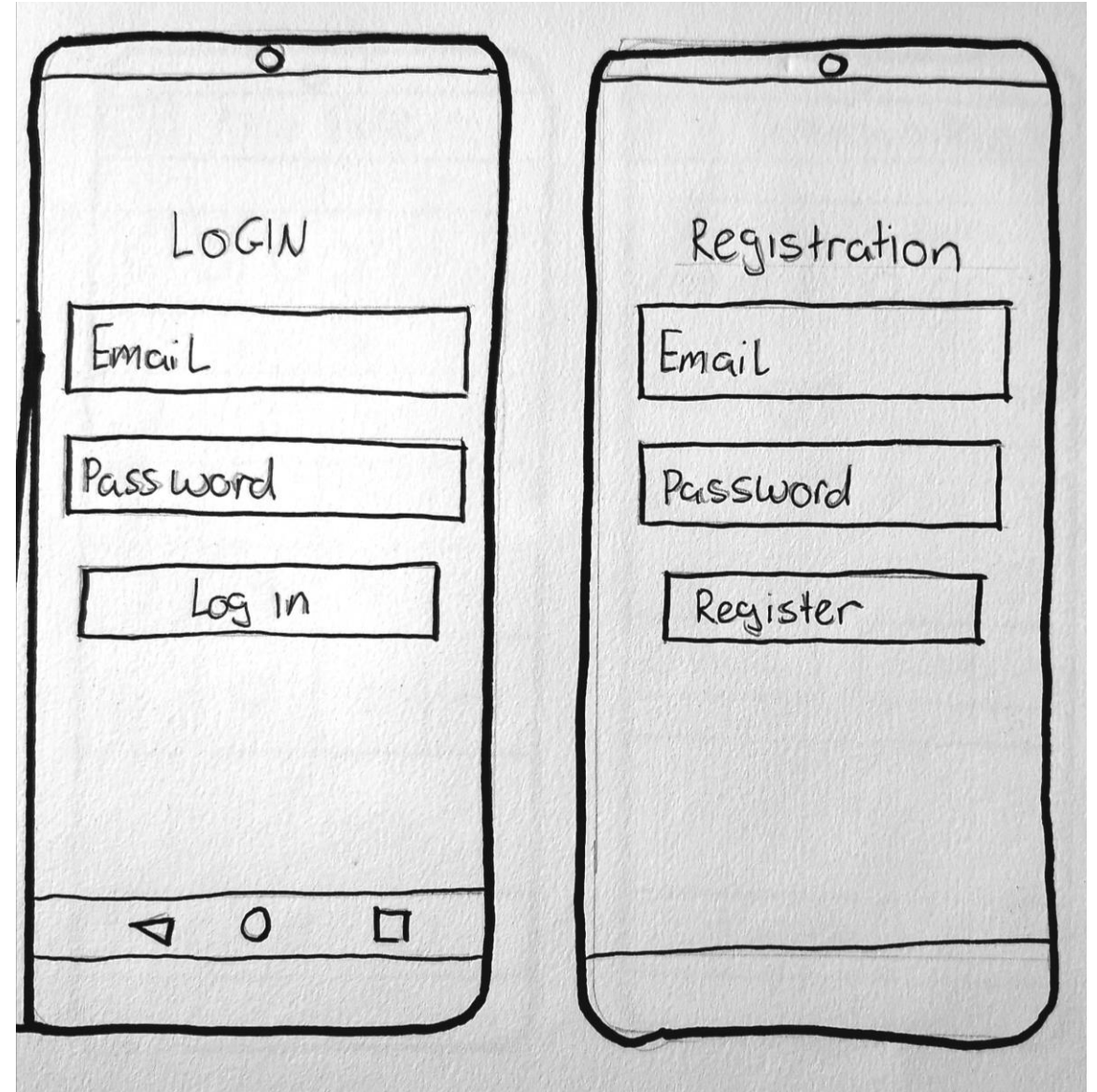
WIREFRAMES FOR MONEY MANAGEMENT APPLICATION

Dashboard.
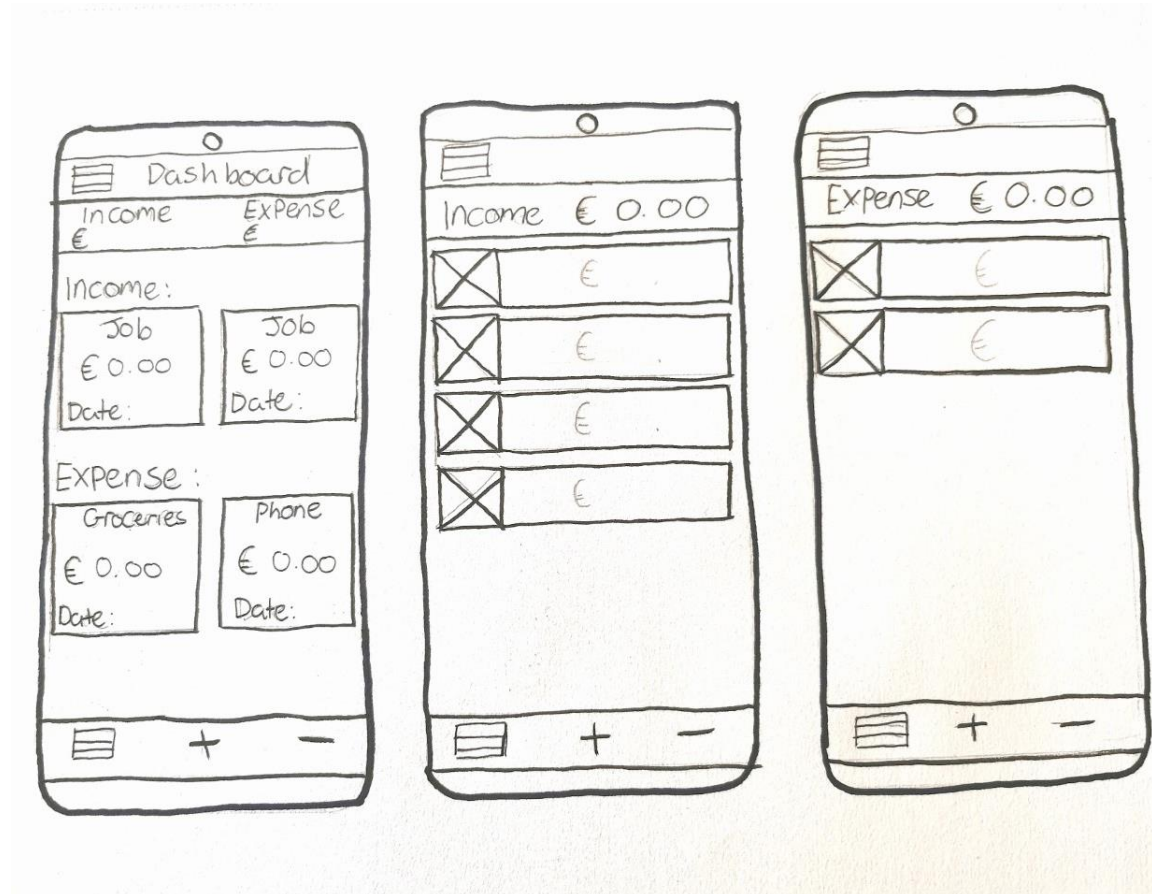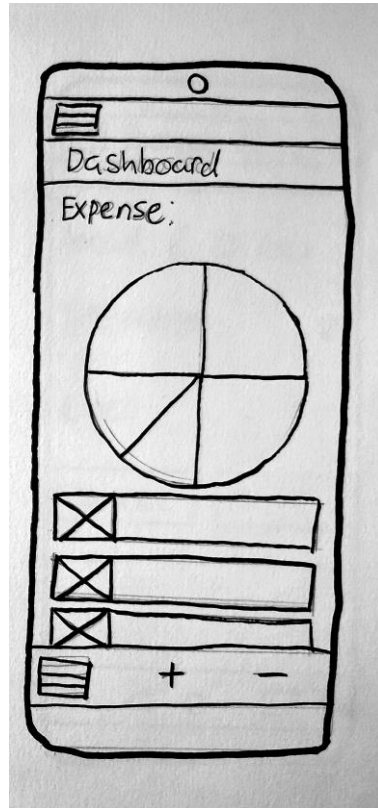
WIREFRAMES FOR MONEY MANAGEMENT APPLICATION

Adding an expense/income.
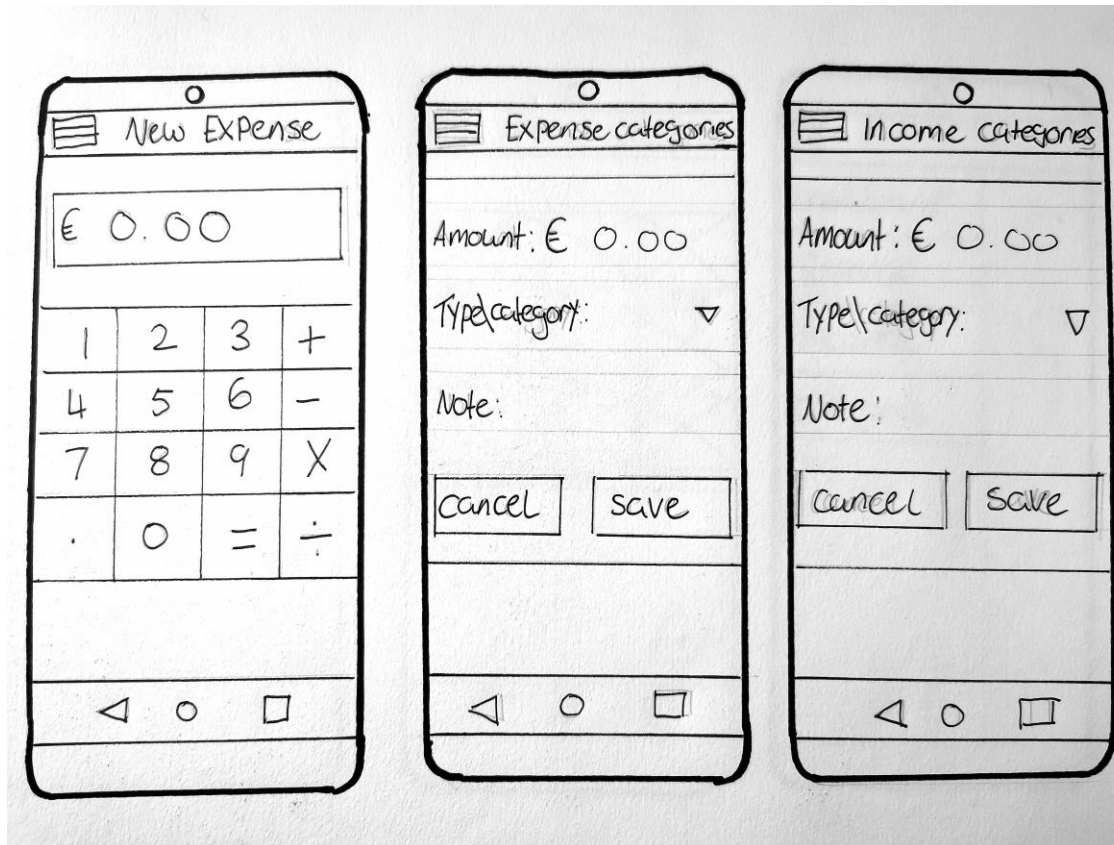
WIREFRAMES FOR MONEY MANAGEMENT APPLICATION

Categories.
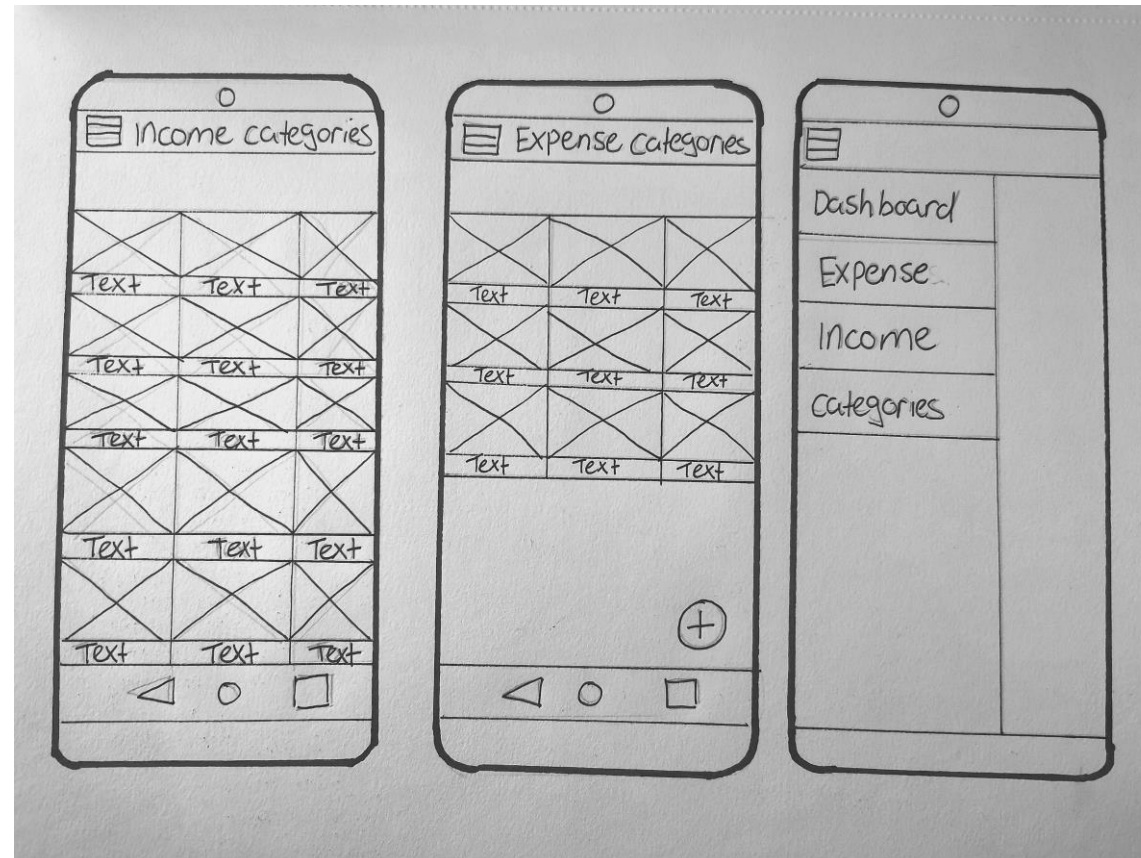
IMPLEMENTATION

- The Expense manager app is an application built using Android studio tools and Firebase to create a visual financial aid for people with neurodevelopmental disorders and low numeracy.

- The application is intended to be used by people who struggle with managing their finances on a day-to-day basis.

ANDROID STUDIO/FIREBASE

- Android Studio (AS) uses a highly integrated Gradle build system.
- Offers dependency management.
- Enhances the developer experience because it's more extensible.
- User Interface
- Stability of System

USER CASE DIAGRAM

STRUCTURE OF ANDROID

An android project within android studio consists of source files, resource files and app modules. The folders and files inside android studio include:

- Manifest file/folder
- Java folder
- Resource folder
- Gradle scripts
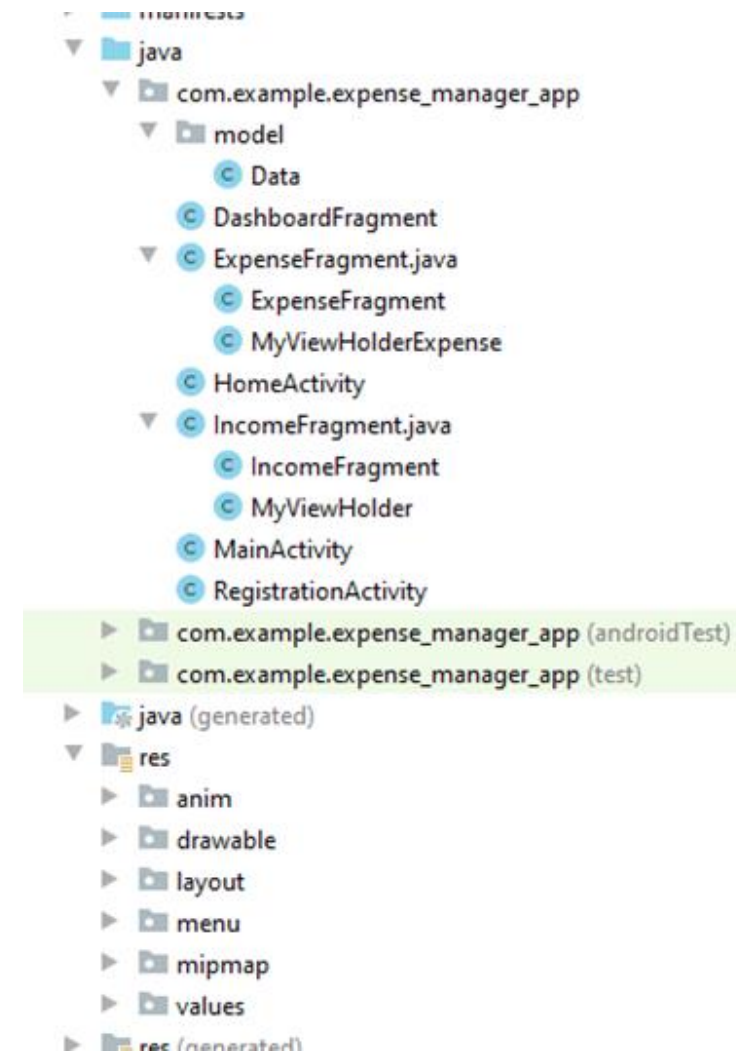
MODEL VIEW VIEWMODEL (MVVM)

MVVM is a design pattern that helps in the construction of software.

It assists in separating business logic of the application from View and UI.
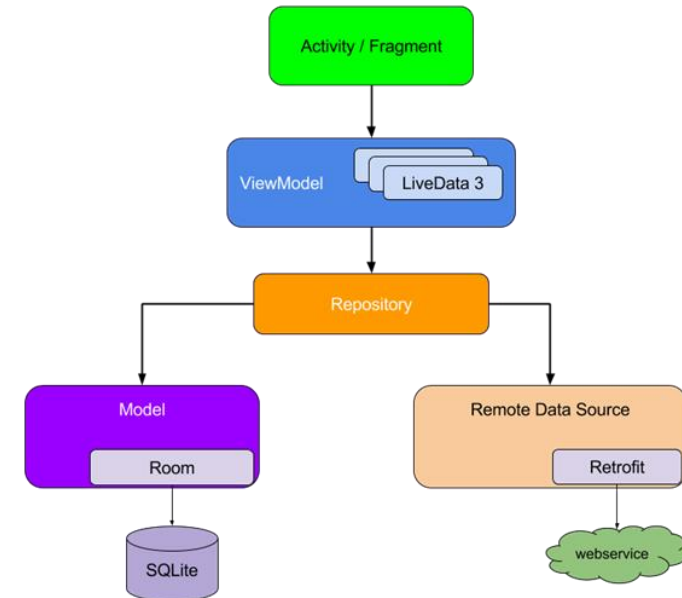
FIREBASE

➢ The Assistant tool window in **Android Studio.**

➢ Backend-as-a-Service (Baas).

➢ Firebase is a complete package of products that allows to build web and mobile apps.

➢ manages all data real-time in the database.

➢ Allows syncing the real-time data across all the devices.

➢ Quick display data in the application.

➢ Faster then any backend web services.

FIREBASE REALTIME DATABASE

- Expense manager app uses firebase Realtime Database which allows for quick development and high quality.

- Firebase is a NoSQL database.

- Firebase is a large JSON object.

- This means the database has no schema, tables, or columns. Instead, it is a combination of key/value pairs

```
ExpenseDatabase
    ERMZXQ5yeKNfuudXYC7BKdETcOI3
        -MYojQ9SJ9df8lGjkZXJ
            amount: 100
            date: "Apr 21, 2021"
            id: "-MYojQ9SJ9df8lGjkZXJ"
            note: "Groceries for this month"
            type: "Groceries"
        -MYoldVDZd4jgk60S6gm
        -MYopeqX1KmgeTZ-y3nW
        -MYosPTqkG6wVPX5NbKB
        -MYt0wK8LmJOs73BTzF6
        -MZXxsHxWzj1TVKxSk9_
IncomeData
    ERMZXQ5yeKNfuudXYC7BKdETcOI3
        -MYgcZw_Qd4uLRjfSDL6
            amount: 100
            date: "Apr 20, 2021"
            id: "-MYgcZw_Qd4uLRjfSDL6"
```

SAMPLE SCREENS FORM THE EXPENSE MANAGER APP

LOGIN AND REGISTRATION

DASHBOARD

INCOME

EXPENSE

USER TESTING

The main goal for the application:

- It should be simple to understand and communicate information to the user

- The user should be able to organise data they add to app

The user completing the tasks will test if the goals that are set are met with satisfaction

USER TESTING (CONTINUED)

❑The user should be able to login/register

❑The user should be able to add an expense

❑The user should be able to add an income

❑The user should be able to view the dashboard

❑The user should be able to view income and expense

❑User should be able edit Income or Expense

❑User should be able to delete income or Expense

RESULTS

o The overall results of usability testing were successful.

o The calculations and database testing conducted on The Expense Manager App served to test the apps features.

o User testing was conducted with 3 participants who are diagnosed with a neurodevelopmental disorder. This were recruited as friends of developer. This included ADHD and Dyscalculia.

o The results from the user testing showed that The Expense Manager App was simple and easy to use.

o However, there were improvements that could be made to the application.

FUTURE WORK

➢Dive deeper into categorizing income and expense.

➢More visual features such as diagrams and charts so that users can visualize what they are spending and earning.

➢research should be done on people with neurodevelopment disorders and low numeracy to improve the user experience of the application.

➢More interviews would be conducted about why an application like the expense manager app is beneficial for improving the way of living for the target users.
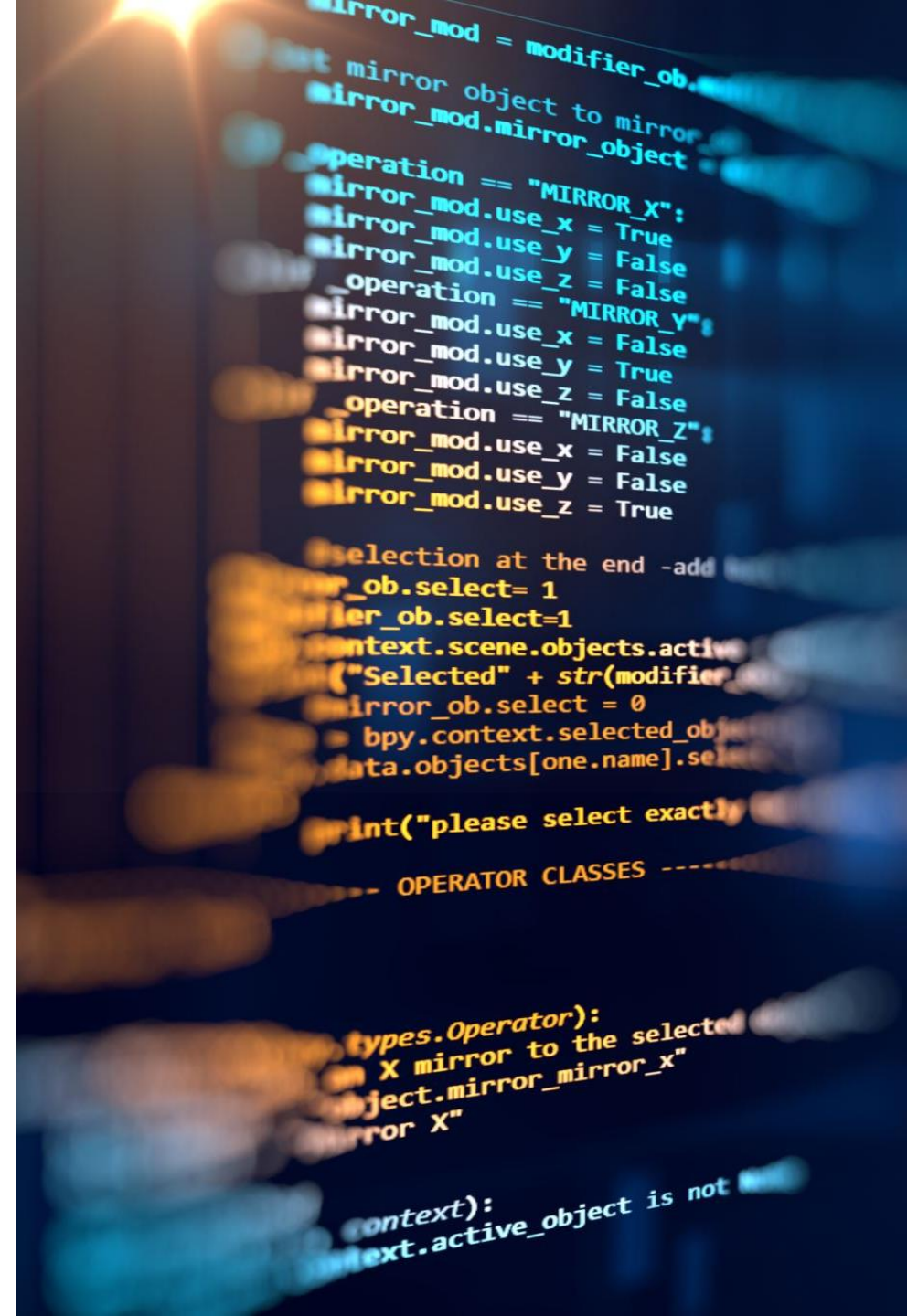
THANK YOU   QUESTIONS?

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