1- Summary of your software (you can reuse the same submission in D1 if it hasn't changed).

a One paragraph for the problem & partner (if applicable)

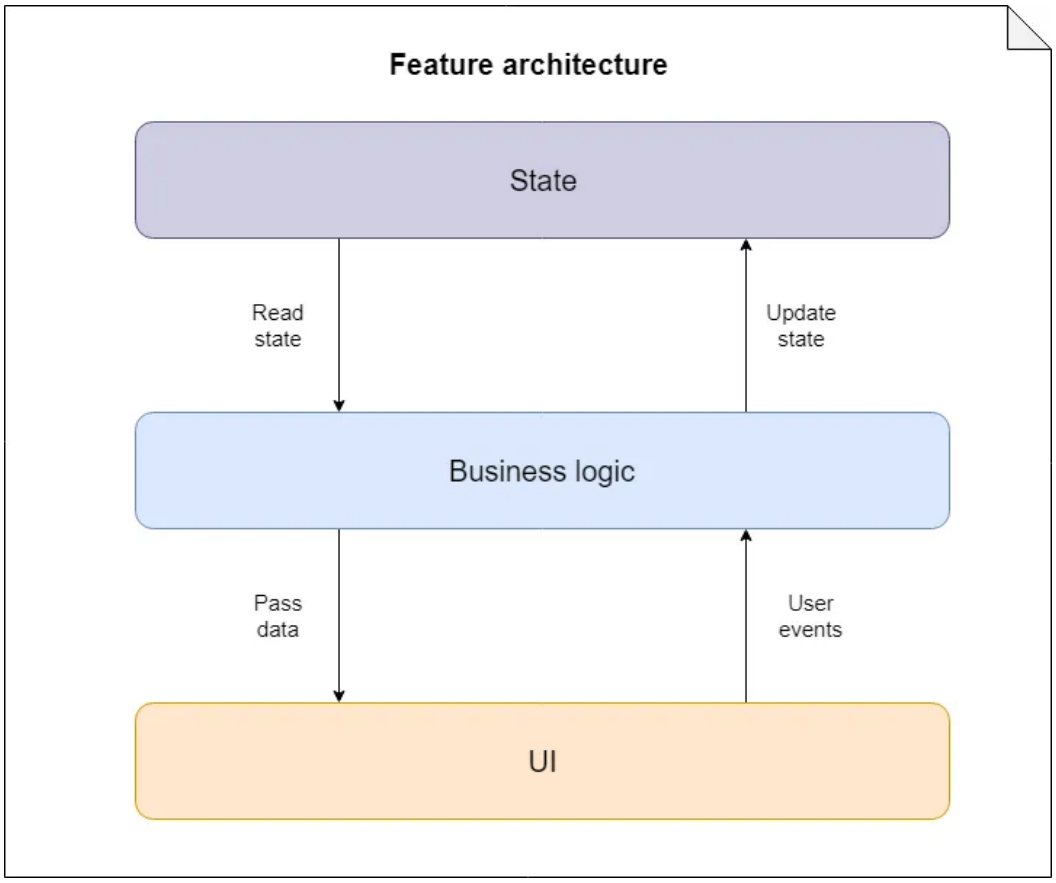
Our group is working on an educational assessment tool that aims to measure oral fluency, early literacy, and cognitive reasoning. We plan to build three major assessments that specifically test children's ability of spelling, speaking and recognizing words based on pictures and hints. The front end is based on React and uses Google Firebase/Cloud platform. Our partner is from Dr.Jang's Lab in OISE-UT, and we are currently working closely with them. Each week we will also have regular meetings with them to update our progress and ask questions about the project.

b. One paragraph introducing any existing software/infrastructure (if applicable)

Existing software that we have access to is the frontend for the pre-existing websites of the BalanceAI project, written in Typescript and React, with a Firebase database. Our responsibility is to create the front end for the new BalanceAI Discovery website, but we may reference the existing software. We were suggested by our partner to use React, Firebase and Material UI.

2. 1-4 paragraph(s) on how you decided to divide the project. Ideally, this will be accompanied by a software architecture diagram and how each component connects to the others.:

Our project is a web app with a user interface that is directly connected to a noSQL database. Hence, in this project, we will not be developing the core logic of the program. Our entire group is responsible for developing the infrastructure layer of the clean architecture structure, consisting of the UI and database. We will simply receive data from the user, and place it into the firebase database. However, the project is very front-end heavy. We are responsible for developing three to seven assessments. We are tasked with making the UI pleasing to the eye and easy to work with for small children. Also, we are responsible to place the input received by the user into the database. Hence, the group was divided into three subteams each who worked on designing one of the assessments: phonological awareness assessment, spelling assessment, and rapid naming assessment. All three teams designed the UI for their task and placed the data from their input into the firebase database. Our front end will be designed as described in the diagram: We will have a UI (all of the html, js and css files in the public folder) that receives and sends data to the business logic (mail.js file in the public folder). The business logic handles the data and stores it in the database state (firebase) such that it is easily queried and returned.



(reference: 1, 2)

A major component of this project is the frontend, as mentioned earlier. So far, we have implemented three main categories of UIs: the login page, the dashboard page, and the task page: one each for login and dashboard, and one for each task, resulting in three task pages. When designing the frontend, not only do we have to consider how it would send data to the database, but how it will fit the overall “theme” of the project as well—how well it would appeal to our target demographics, which are kindergarten-aged students, teachers, and parents (although we are mainly focusing on the students). To achieve this, we implemented our UIs loosely based on our prototypes, which include simple imagery, colours, and cartoon gifs and backgrounds, which younger children would be more likely to engage with. To build on the interactive side of the web application, we added little animations that play whenever the mouse is hovering over an icon. The simple interface makes it easy for children to interact with, and allows teachers and parents to navigate the different pages with ease.

3. One paragraph for part(s) each sub-team is responsible for.

Our group is divided into 3 subgroups. Group 1 consists of Sanjana and Fariha. They are responsible for designing the frontend component of the phonological awareness task page.

Group 2 consists of Jolie, Yasamin and Saad and they are responsible for designing the frontend component of the rapid naming task page and setting up the backend component using firebase. Group 3 consists of Ivan and Qiyi and they are responsible for designing the frontend component of the spelling task page.

Work cited

(1) Modern Frontend Architecture 101. Understanding what matters, away from… | by Bilel Msekni | Vue.js Developers | Medium

(2) Modern Frontend Architecture 102. Understanding what matters, away from… | by Bilel Msekni | Vue.js Developers | Medium