

Bluering Design Notebook

Introduction

The design notebook introduces the overall design of our software product for this project. It will contain the design principle of our GUI and backend database, which will help the user to have a comprehensive understanding of our product. Some comparison results will be analysed here and explain why we choose to use the specific technology and tools.

GUI (Frontend)

Main Frame:

- We put all the main functionalities on the main page to make sure the easy and fast operation. **Everything on one page** could be preferred in the industry.
- The order of 3 components is designed to make the operating logic clear and reasonable.
 - **File browsing part:** This part is put on the left side of the Main Frame as selecting files is the first step to use this software.
 - **Run counting part:** This part is put on the top of the file browsing part with *compare* button as it changes following the number of selected files.
 - **Information part:** This part component is put on the right of the software as we treat it as an optional operation. The user can analyse data without reading any information.

Result Frame:

- Table and graph are put together on the result frame as we want them to show at the same time as the result of analysis.

Database Frame:

- Several conditions will be able to fill in the text control to search from the database.
- A tree list will be shown on the frame for the user to select the raw data file for downloading.

Computation (Backend)

- All the process is running **locally** instead of in the database. As we want this software to be able to run even if there is no internet connection and the user can get analysed results without connecting to the internet.
- The user is able to store and download data from the database if there is an internet connection.
- All the data is read from the local drive and it has to make sure that the format of the data file is constant and correct.

Database (Backend)

The detailed database design diagram: [Database Diagram \(Bluering\)](#)

- Two main tables: Body and Header.
- Body will store all the data used for calculation.
- Header will store the information of the measurement.