Criterion B: Design
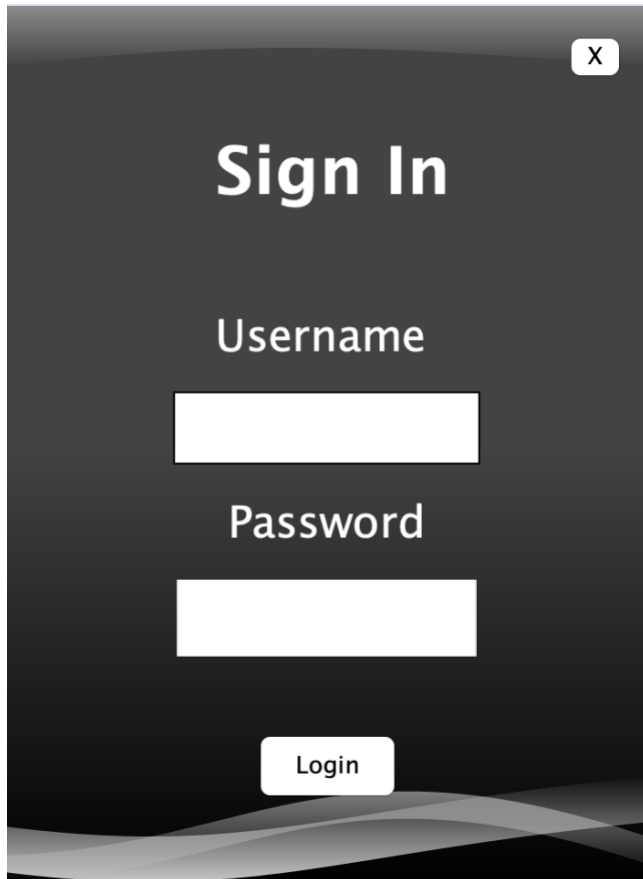
Login panel
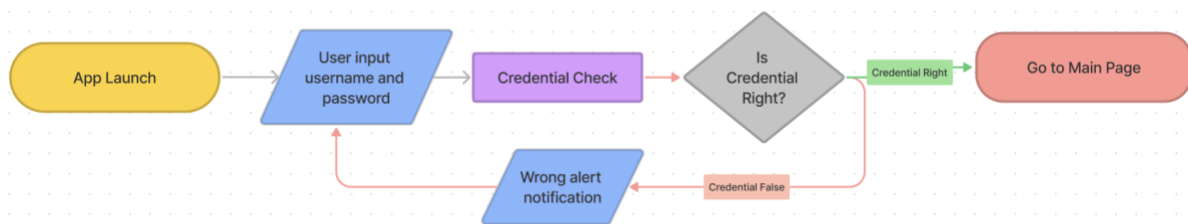

The login panel will take input for user username and password. It uses a fixed stated password for username of "admin" and "123" for password.
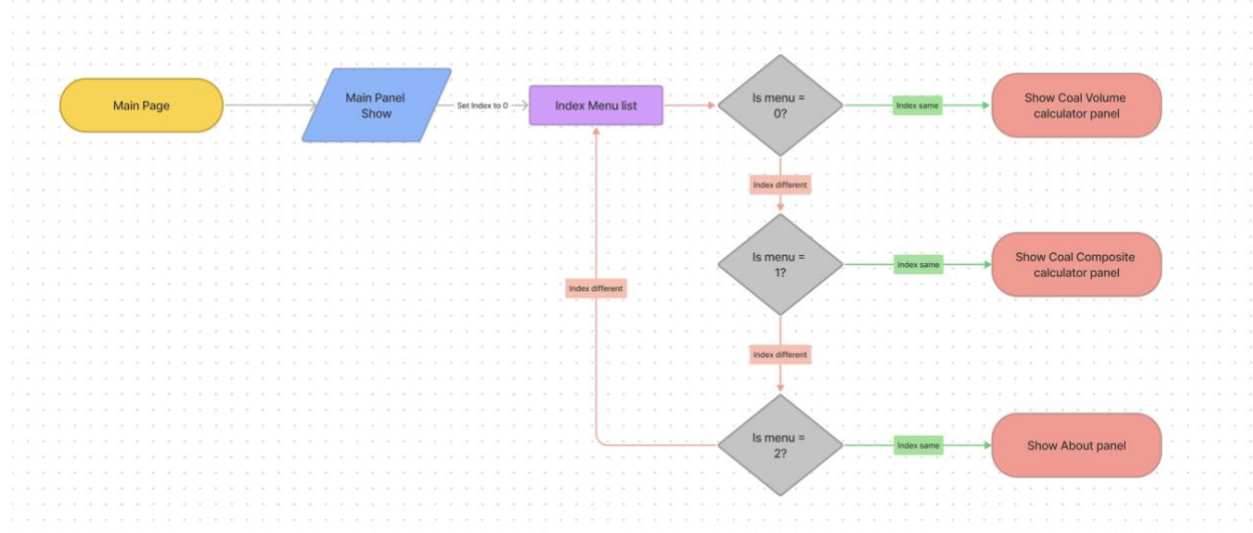
Flowchart:

If the user input the wrong credential, it will pop an alert notification.
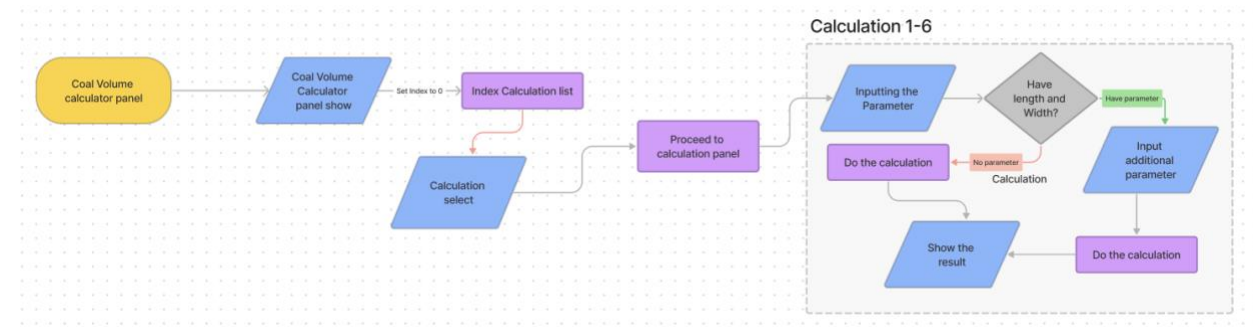
Main application

The main application will directly show the Coal actual volume panel choice with the sidebar for changing between the Section 1 and 2 or go to about page.

Section 1. Coal Actual Volume Calculator

This panel will bring choices for the user to select different conditions of each calculation (same input).

Here is the flowchart:

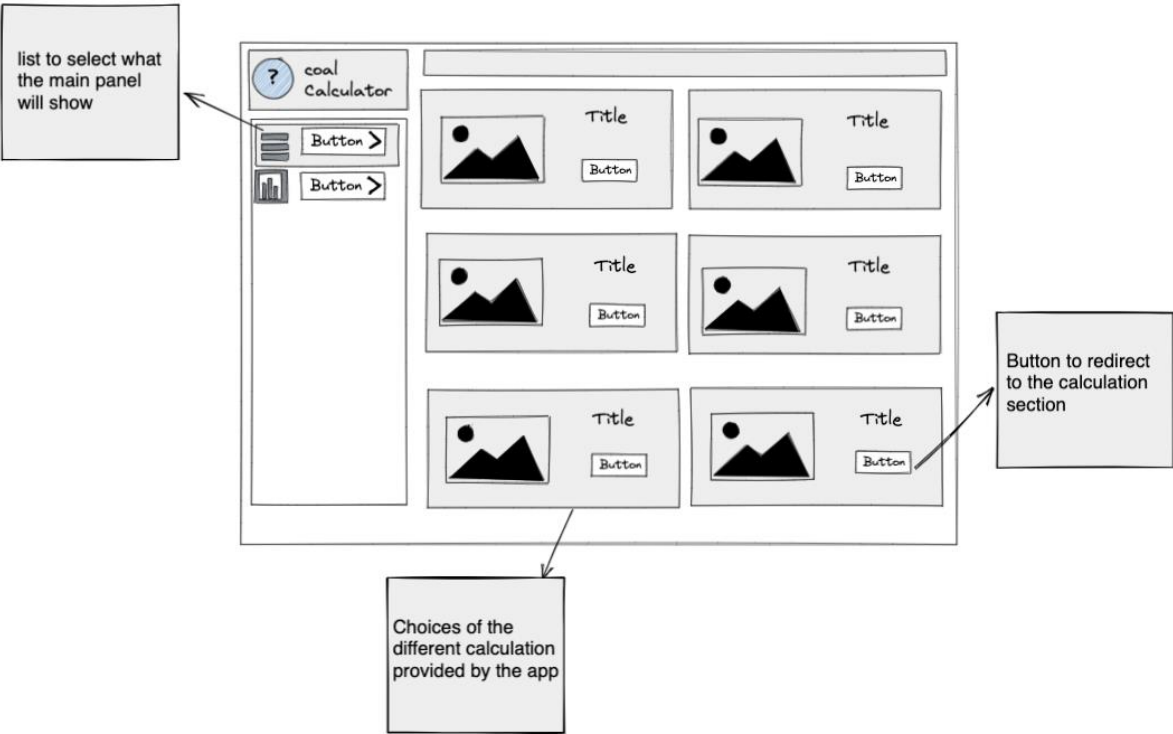

Input data

Data	Example
- Variable omega(degree) - Variable delta(degree) - Variable w(height)	- 30° - 20° - 4000 m

Additional data (optional choices) - Variable Width - Variable Length	- 1000 m - 1000 m
Location - Text field	

Output data

- Number in double form (meters)

Design

Input fieldtext to insert the parameter to the calculation

Condition to enable the input in the right panel and do the other calculation

coal Calculator

Button >

Button >

○ Condition

Input 1	Input 1
Filed text	Filed text
Input 2	**Input 2**
Filed text	Filed text
Input 3	
Filed text	

Button

Detailed image to crosscheck the problem

Button to execute the calculation
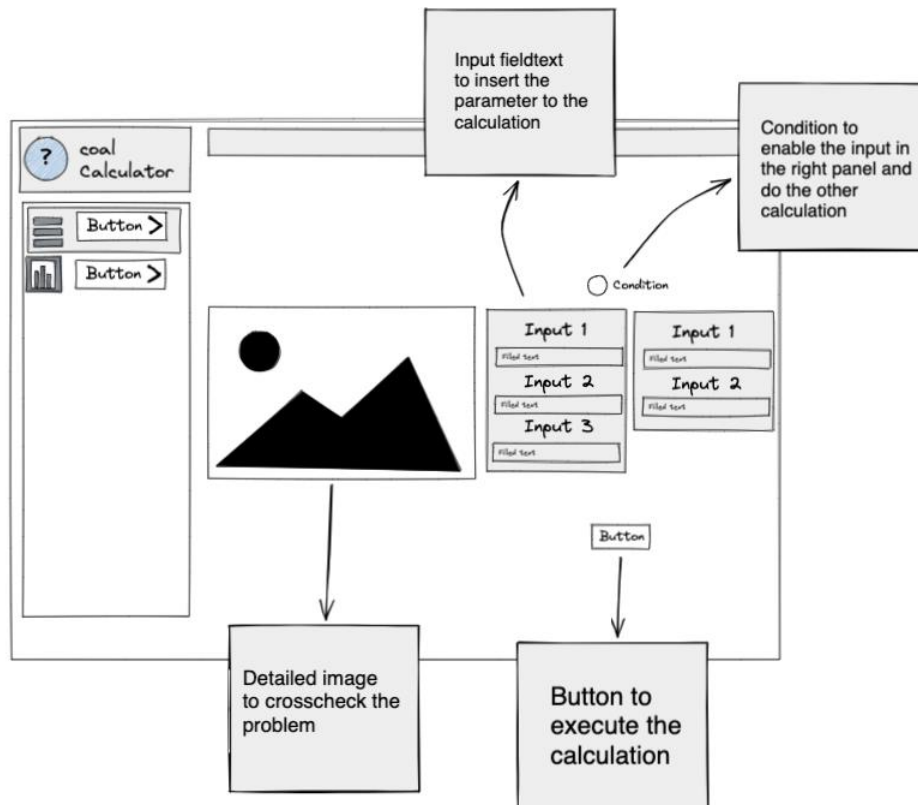
Section 2. Coal Blending Calculator

Design
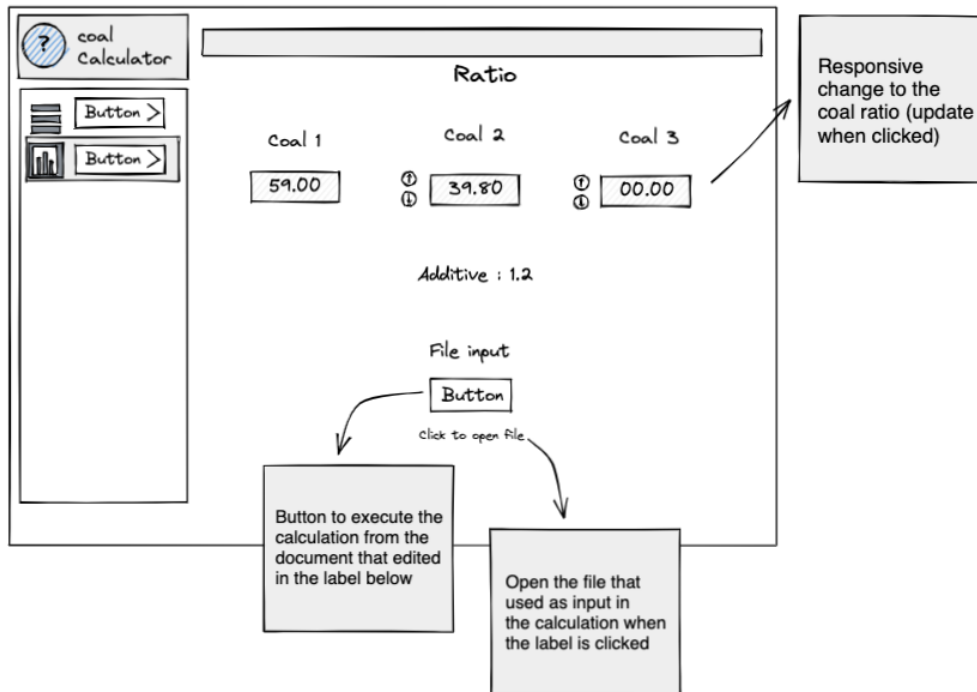
This is the panel for the coal blending section

Input data

Data						Example					
- Fixed ratio - adjustable with button - Fill the percentage for blending in the table from file provided											
TM % AR	IM %ADB	ASH %ADB	VM %ADB	TS %ADB	CV adb	TM % AR	IM %ADB	ASH %ADB	VM %ADB	TS %ADB	CV adb
						16.10	10.50	5.40	41.00	2.16	6355
						29.90	17.30	1.10	38.20	0.32	5534
						0.00	0.00	0.00	0.00	0.00	0

Location - File accessed via clicking button (app will directly open the .docx file)

Flowchart
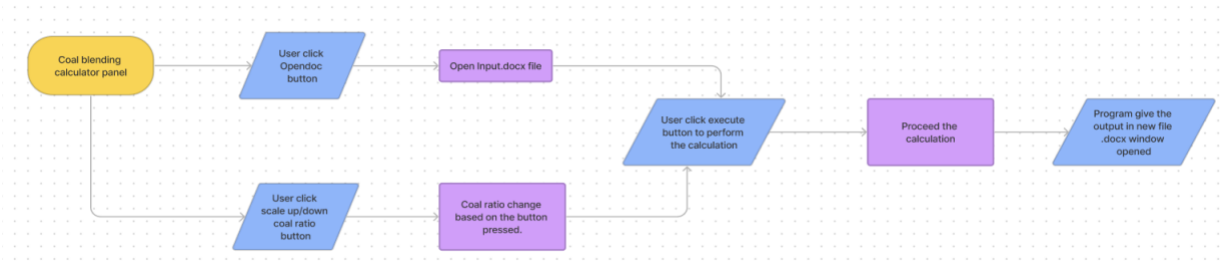
Full overview for the input and result

Input:

TM % AR	IM %ADB	ASH %ADB	VM %ADB	TS %ADB	CV adb
16.10	10.50	5.40	41.00	2.16	6355
29.90	17.30	1.10	38.20	0.32	5534
0.00	0.00	0.00	0.00	0.00	0

Result:

Materials	Ratio	TM %AR	IM %ADB	ASH %ADB	ASH %DB	VM %ADB	FC %ADB	TS %ADB	TS %AR	CV %ADB	CV ar
Coal 1	54.9	16.1	10.5	5.4	41	2.16	6355	6.03	43.1	2.02	5957.37
Coal 2	40.8	29.9	17.3	1.1	38.2	0.32	5534	1.33	43.4	0.27	4690.85
Coal 3	3.1	0	0	0	0	0	0	0	100	0	0
composite	100	21.04	12.82	3.41	0.5	1.32	5746.77	3.92	44.47	1.19	5205.22
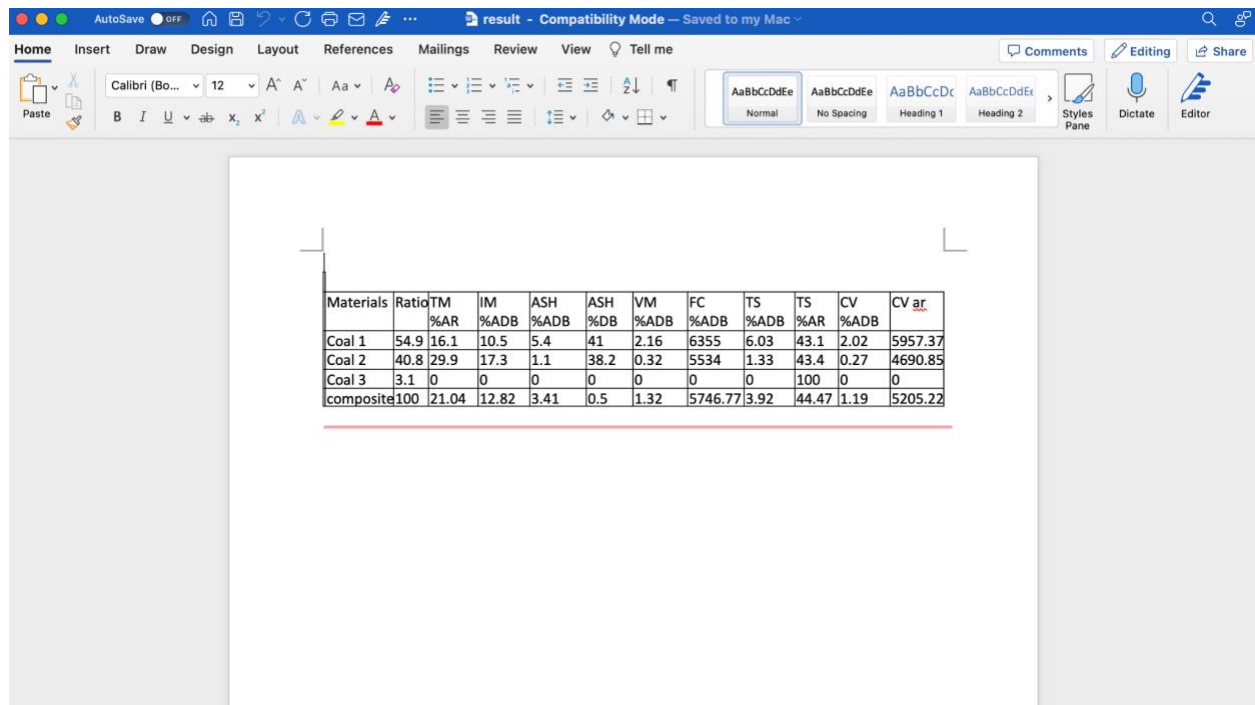
Testing plan

Action Test	Method of testing & result
Test if the program runs and main window appears with login and main application running	Double click on the program; main window is displayed: login successful
Check if the coal actual volume panel work	Checking with bruteforcing/clicking every the button for checking
Check if the coal blending panel work	Checking with bruteforcing/clicking every the button for checking
Check if coal actual volume calculation work successfully.	Puting the wrong format input to check if any message alert pop up.
The radiobutton should lock the variable input in coal volume calculator if not clicked	Try checking by clicking the locked text field before clicking the radiobutton
The Button on coal blending panel should change the coal ration in fixed increment and decrement with same ratio	Try every button possible to check if any miscalculation occur in the process

Input document (.docx) should be opened by application	Check if the program might be unable to run the document.
Check the result output in coal blending.	The app should run the calculation and open the result document (.docx) after the calculate button clicked

Word count: 310