SDV602 Project
Milestone 1

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Introduction

With the expansion of human habitant as well as climate changing effect, the population of many species are on the declining trend which ultimately would lead to the collapse of the whole eco-system. While it is impossible to stop the process, we could slow down the process by providing further care for the animal kingdom especially the one at the top of the food chain such as White shark.

While White shark or Great White is portraited as an apex predator from many movies, their population is on the brink of declining due to unmanaged incidental catch and directed sport or quasi-commercial fishing for trophies. According to the Department of Conservation, White sharks are classified as Vulnerable globally by the IUCN Red List of Threatened Species and protected under Wildlife Act 1953, Fisheries Act 1996.

Genetic and satellite tagging is the primary method of tracking movement and controlling the population, but it is lacking in specific individuals' conditions and location. For more details, in the White Sharks article from the Department of Conservation, some sharks spend at least 5-7 months north of New Zealand before returning to where they were tagged. Furthermore, it is also worth mentioning that no movement between New Zealand tagging locations or between the Chatham Islands and the South Island's east coast has been documented.
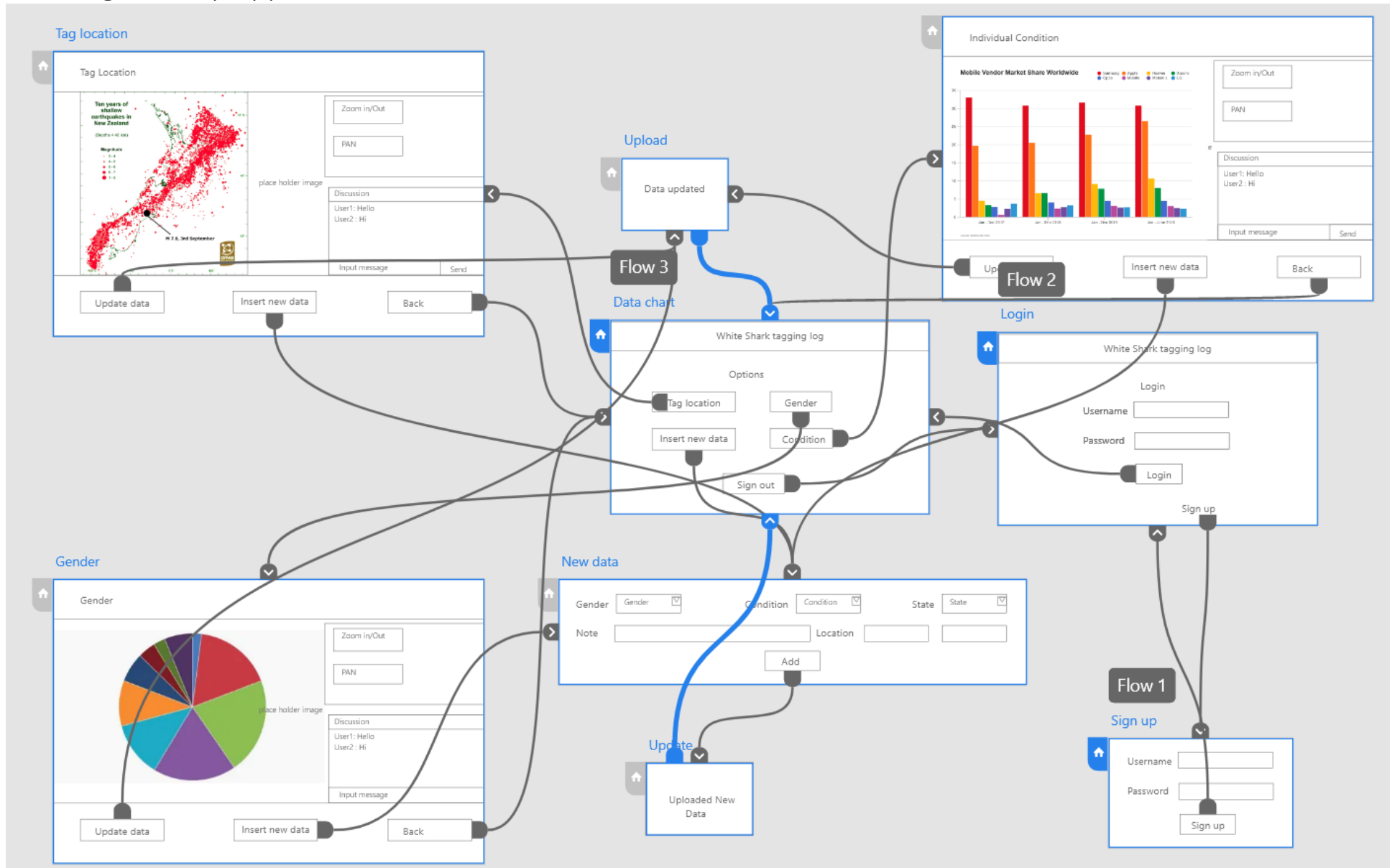
A white shark tracking application would be helpful to record the white sharks sighting near those locations and around New Zealand to increase the effort in reserve their population.

Screen Design

The application will have 7 screens:

- Login: this is the first screen that will appear, and it will require user to enter username and password before access the application. Users also have the sign-up option if it is their first time accessing the application which will open Sign-up screen. Only with correct match of password and credential, users can proceed to Menu screen.
- Sign-up: The screen will have 4 available fields (username, password, confirm password, email address) for users to complete in order to create a valid login credential. The information needs to follow certain criteria such over 8 character long or no special character.
- Menu: after providing correct login details, menu screen would present 5 buttons (Insert, Gender, Location, Condition and Sign-out) for users to choose from. First would be Sign-out of the current account
- Gender: The first data screen which will display the pie chart and present the ratio between male and female sharks sighting. The data might be able to be filtered by year or area. The screen also includes zoom and pan buttons for changing the view, chat box and chat log for discussing purpose as well as Insert new data, update database and Return buttons. Those setting is the same for other DES.
- Location: The second data screen which will display the sighting location and present on New Zealand map to indicate hotspot or any important location. The data might be able to be filtered by year.
- Condition: The third data screen which will display the histogram chart to show the number of sharks in different categories such as adult, immature … The data might be able to be filtered by year or area
- Insert: This screen allows users to enter new data entry to the database then return to Menu screen and presenting up-to-date data.

Creating mockup application in Adobe XD

Story board

Login

Log in with wrong username or password

Click on the Sign-Up button

Log in with correct username and password

Successful sign-up

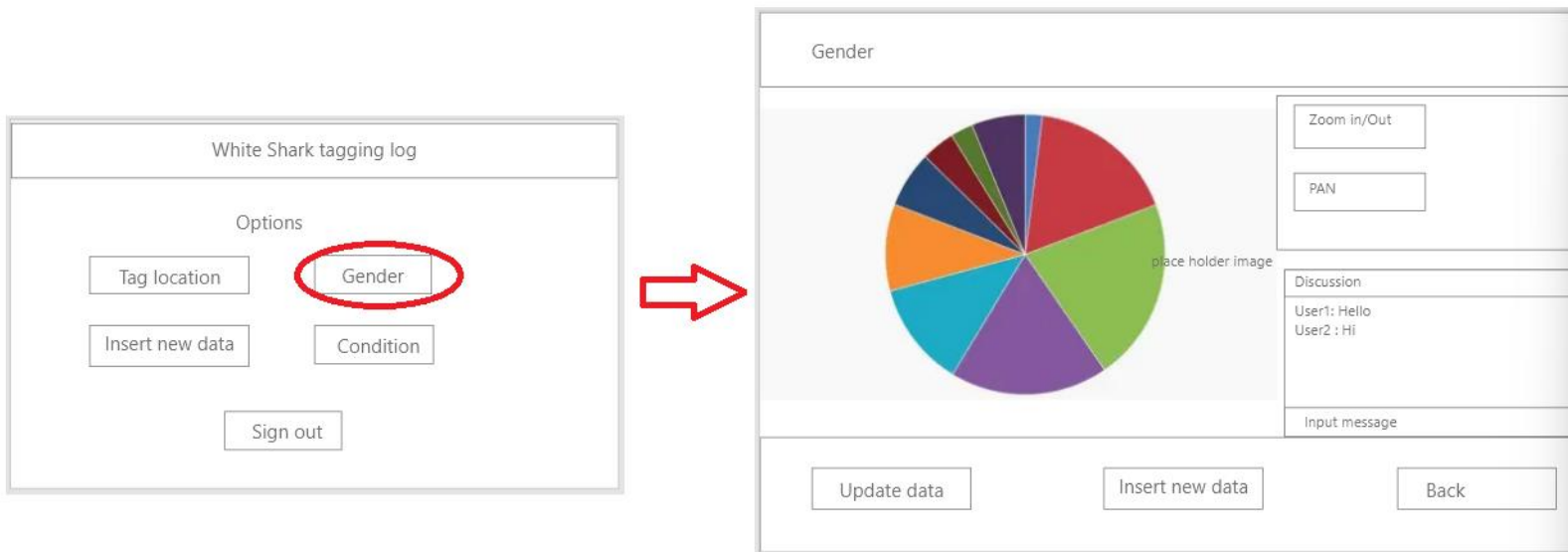| Action/Display	Describe	Input	Output
Go to Register screen	When users want to create new login details, they need to click Sign-up buttons. The Sign-Up screen will display on top of login screen and can go back with Cancel button	Users click on Sign-up button on Login screen	Open Sign-up screen
Login with username and password	Users click on the Login Button when the username and passwords field is empty / wrong/ correct	Users click on Login button while the username and password fields are empty or wrong / correct combination	- With empty field or wrong combination of username and password, an error will be raised to remind user -With correct combination of username and password, the user will be taken to the menu screen
Register new user	Upon fill all the sign-up data, user will receive a pop-up message confirm an account is made and will be direct back to Login screen. The users can cancel the process by click Cancel to return to Login screen	-Click sign-up button on Sign-up screen with all the user details -Click Cancel button	-Success pop-up message and proceed to login screen -Return to login screen
Wrong input message	Message is displayed to show error if username and password combination is wrong	Wrong combination	Error message displayed to the user
Quit the application	When users want to quit the program, the quit will terminate login window as well as the child window such as pop-up window or signup	Click Quit button	The program is terminated

Menu

Sign out
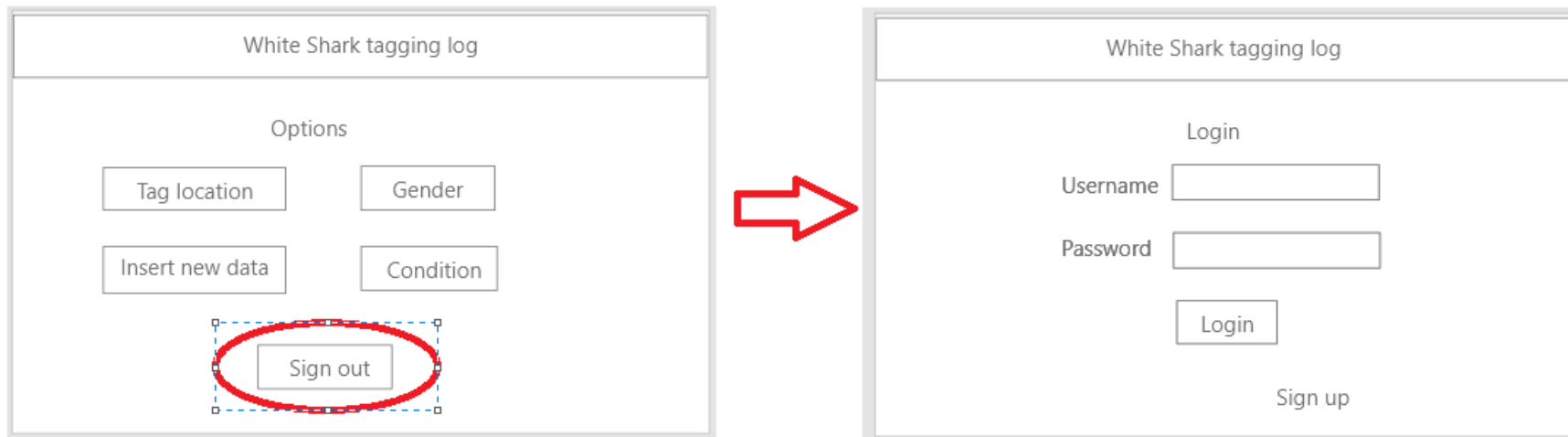
Open 1 DES

Quit the application

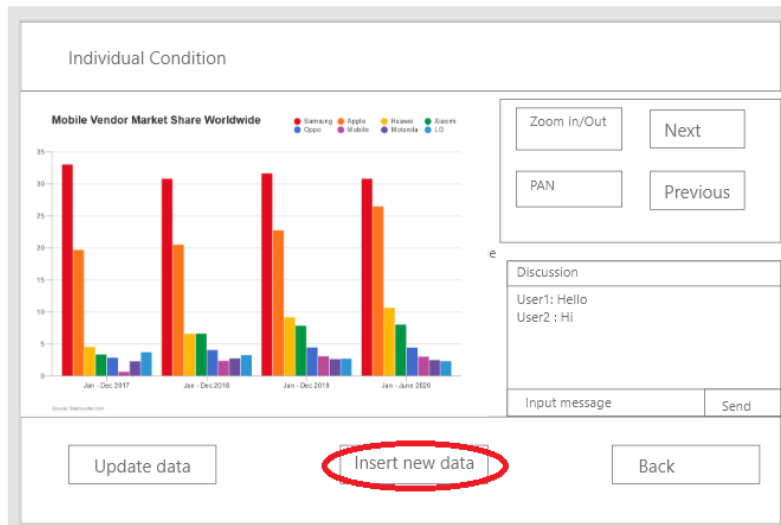

Click insert new data

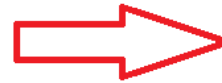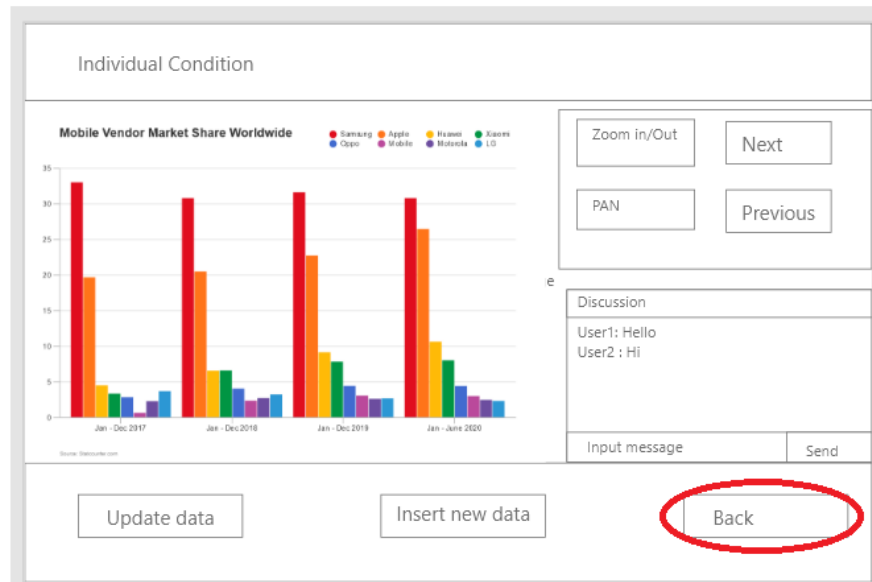| Action/Display	Describe	Input	Output
Click Insert Data button on Menu screen	When users want to create input the new data into the data, they could click the insert button so the Upload screen will open up	Click Insert Data button on Menu screen	Insert screen will show up for users to input the data
Click one of DES (gender, condition, location) button on Menu screen	When users want to view data windows, they can choose by click the name of the data type and DES will be presented	-Click on gender -Click on location -Click on condition	-Display DES for gender -Display DES for location -Display DES for condition
Sign out	When users want to sign out of the current login credential, the Sign out button will allow users to terminate the current Menu screen and go back to Login screen	Click on Sign out button	Return to login screen and terminate Menu screen as well as another DES screen
Quit the application	Same with Quit in Login screen	Same with Quit in Login screen	Same with Quit in Login screen

DES
Next / Previous
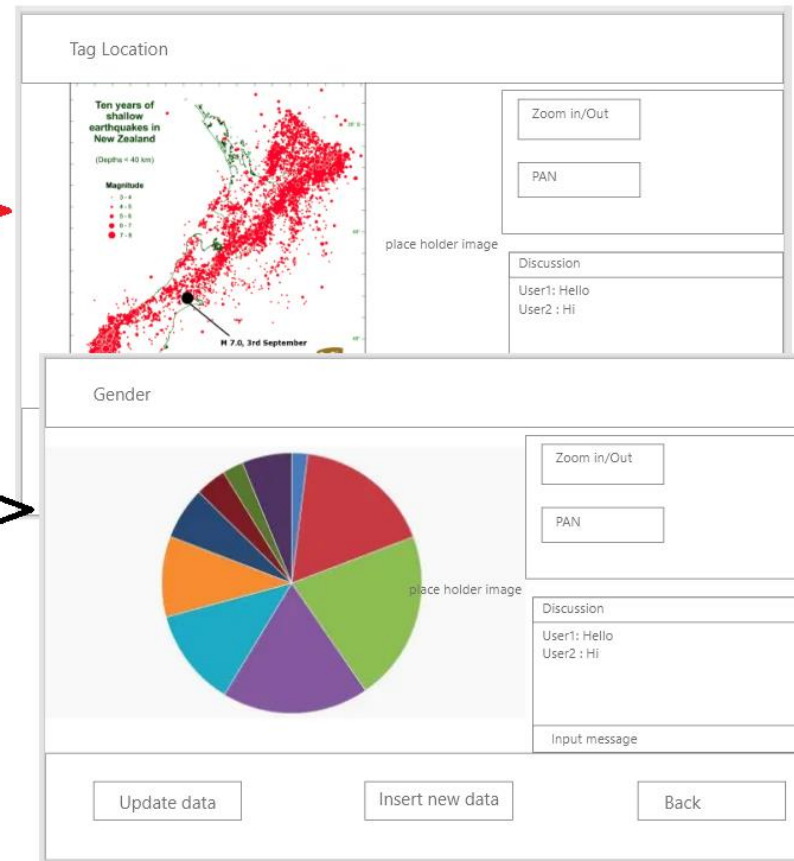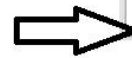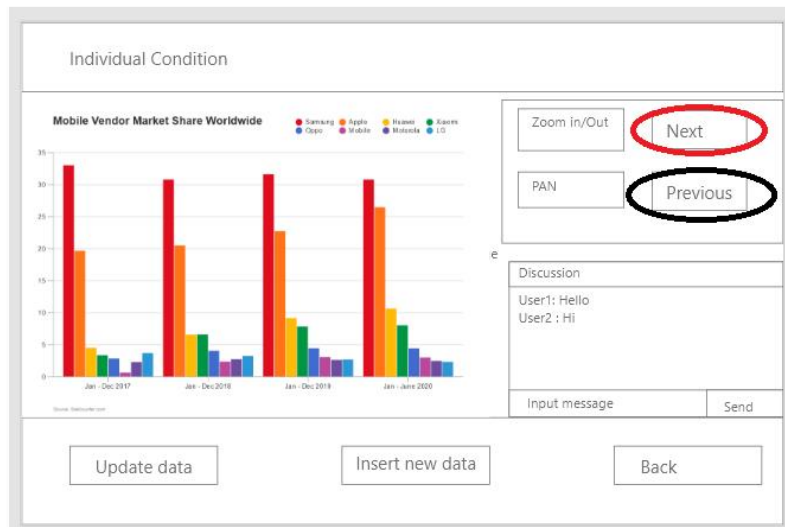
Insert data

Press Back

Update data
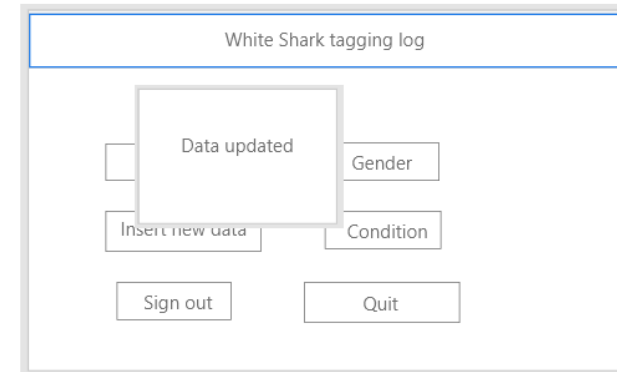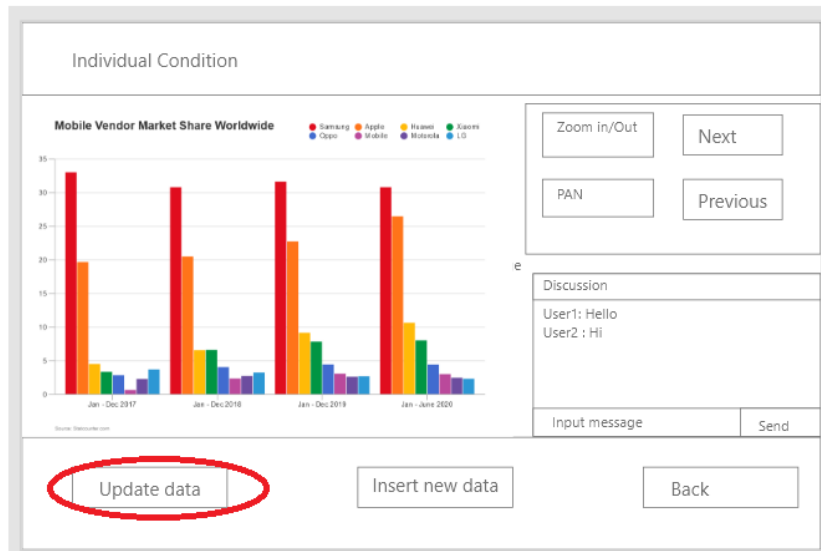
Interact with DES

Action/Display	Describe	Input	Output
Click Zoom –/Zoom + button on DES screen	Changing the view of the data to zoom in or zoom out of the data	Click Zoom –/Zoom + button on DES screen	The data view is zoom in and zoom out
Click on the Pan button and drag	If users want closer inspect of different part of view	Click on the Pan button and drag	The view is move opposite with the drag direction
Click Next/ Previous button on DES screen	When users want to view different (next or previous) DES the current DES will close and open the next DES	Click Next/ Previous button on DES screen	New DES is display
Click Update Data button on DES screen	When other users add the new data into the database, if current users want to see the current data, they will need to update the current database to view the new data	Click update Data	Pop-up messages indicate the database is update and all the DES will be destroyed, and the database will retrieve the latest data from database. Users will return the menu screen.
Click Back button on DES screen	When users want to close the current DES, they can click Quit or X button at the top of the window	Click Quit button on DES screen	The current DES will be destroyed
Send message on chat			

Other
Insert new data

Action/Display	Describe	Input	Output
Insert new data in Upload data screen	When user want to upload new data to the database	Input the required data into data field and click Upload	-pop-up message if all the input is correct and insert the new data into the database while closing any open DES in order to refresh all the data. -pop-up error if any data in the input field is wrong or invalided. Return to Upload data screen
Update / Upload data message	After users successful insert new data or try to update the current database. If they close the window all the DES will be destroy and return to menu to refresh the active database and present new data	Successful update / upload data	Destroy current DES and open new Menu screen which load the new database

Reference:

"White Sharks." Accessed August 10, 2021. https://www.doc.govt.nz/nature/native-animals/marine-fish-and-reptiles/sharks-mango/white-shark/.