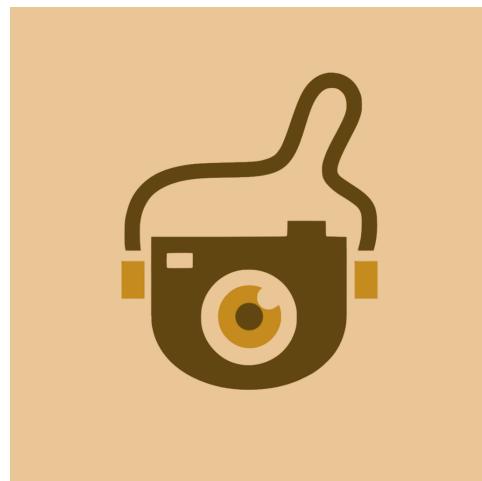




Assignment 1 - Individual Project

ViewLurker



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COSC2659 - iOS Development



1. Introduction

ViewLurker was meticulously crafted to emphasise the most beautiful locations in and around Ho Chi Minh City. This app was inspired by the city's history as well as its contemporary culture. As a person who lives in Ho Chi Minh and a self-learning photographer, I frequently wondered at the city's combination of old and new; hence, the application was designed with the purpose of guiding people with less experience to attractive locations in the city. ViewLurker is an application that not only provides users with a simple and clear user interface but also has a sleek design that was created using SwiftUI.

The motivation behind this comes directly from the love for Vietnam, for its history, people and culture. Vietnam's history has created a special identity for many stories that are deeply attached to these places, so this app was created to help those that have the love for the stories to frame it endlessly.

2. Project Description

2.1. Application purpose and flow

ViewLurker is a one-of-a-kind programme created for folks seeking appealing neighbourhoods in Ho Chi Minh City's bustling city. It serves as a link to finding the city's hidden gems, enabling users to locate and photograph amazing spots scattered across the city. Simply launch the app and explore its user-friendly interface to immerse oneself in this experience.

After entering, users may browse a chosen selection of places. When visitors click on a preferred destination, they are sent to a detailed view that contains a selection of images showing the beauty of the chosen area, as well as geographical statistics. The rating system on ViewLurker is a significant feature. Those in a hurry or who want to see just the best may quickly choose destinations based on user ratings, ensuring they visit spots that have left an impression on other visitors and photographers. ViewLurker promises to put Ho Chi Minh City's hidden gems right at your fingertips, whether you're a seasoned photographer, a tourist seeking to travel off the beaten path, or a local looking to see the city in a new light.

2.2. Technical implementation

2.2.1. MCV pattern design

The Model-View-Controller (MVC) design guarantees that the data of the app (referred to as the Model), the user interface (referred to as the View), and the operations happening behind the scenes (referred to as the Controller) are separate yet interconnected. The implementation had many benefit to the development of the application as well as the user experience while using the application

2.2.2. Store data with Json

Since the application only needs to read data from the database, using Json as a database would be the best choice. Json is a lightweight data-exchange format that is simple for people to read and write while also being simple for computers to analyse and generate



2.3. What did i learn?

2.3.1. Swift and SwiftUI

- The Basic layouts of ZStack, HStack and VStack
- Learned how to use modifier to change the view's behaviours and styles
- Understanding the concepts of @State, @Binding, @Environment and @AppStorage in SwiftUI, and how they affect the UI dynamically.
- Learned how to use SwiftUI Navigations to switch between views
- Learned enumerations, structs, and classes, and understood about protocols and extensions

2.3.2. Json file

- Learned the basic structure of Json like objects or arrays
- Learned how to parse object into Swift by using JSONDecoder
- Learned how to format Data into a Json file

2.3.3. MCV pattern design

- Understand the basic concept of MVC
- Understand the job of a Model, Controller and View
- Learned the interaction between these parts of the design
- Learned how to apply it to a simple project

3. Implementation Details

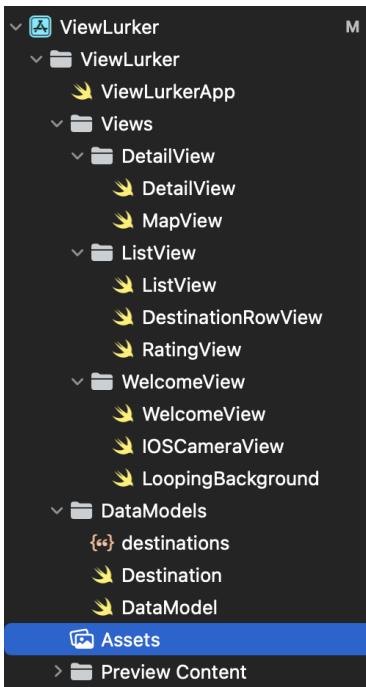
3.1. Implementation

ViewLurker modifies the traditional Model-View-Controller (MVC) design pattern in a novel way. Despite the fact that the original pattern includes a 'Controller' component, this app has purposefully removed it due to its function as a read-only data application. ViewLurker exclusively utilises the 'Model' and 'View' components for a better execution based on the requirement of the project.

The application's data is safely stored in a JSON format. With this configuration, the application runs effectively without the requirement for a controller to regulate data flows or keep the Model and View in sync. Because of its unique use of the MVC design pattern, ViewLurker is able to give an unparalleled level of efficiency and responsiveness. Users may expect a smooth and simple experience when exploring Ho Chi Minh City's unknown natural treasures.



3.1.1. File management



As expected, the application will not have a Controller folder to manage the state between the View and the DataModels

- In the View folder, there are three separate folders called “WelcomeView”, “ListView”, “DetailView” that represent each of the view in the project.
- In the DataModel folder, it contains the destinations.json which is responsible for the database, DataModel.swift handles calling the data and returning it to the Destination objects.

3.2. Main and advance features

These images below are the three views that will be mainly used by the user in the application. The first view called the Welcome View which introduces the user to the application, follow the motivation behind ViewLurker the Welcome View is designed to be similar to the default Apple camera application; the purpose of this is to lead the user into the feeling of capturing the moment of greatness, similar to the slogan: “Seek the lost, Frame timeless Essence”. The second view provides the user with a list of potential locations where beauty lies within, to their preferred destination they can choose to view more details in the last view which is the Detail View. In the third view, the user can find more information about the destination.

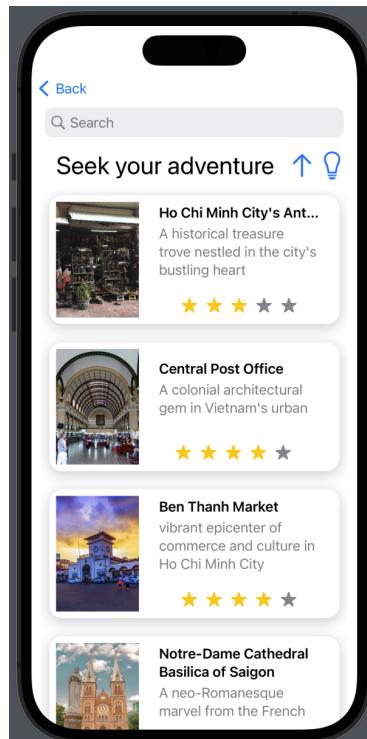
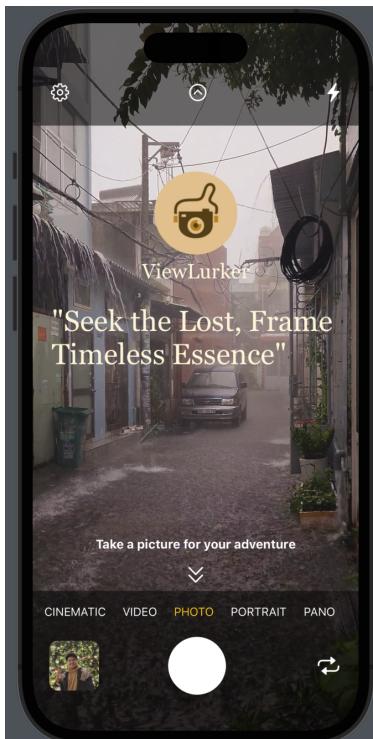




Figure 1: WelcomeView

figure 2: ListView

figure 3: DetailView

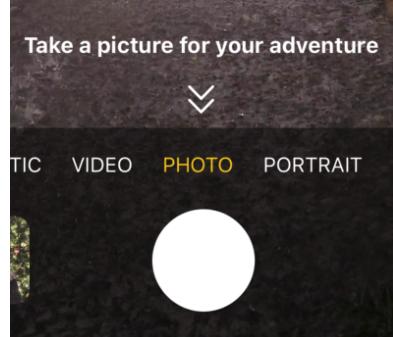
3.3. Main features

These are the main feature that had been included in the project

Link youtube: https://www.youtube.com/shorts/v_UnoRqMco0

Notes: the video is less than a minute so youtube had automatically make it a youtube short instead of video

3.3.1. WelcomeView

Features	Figures
Logo and app's name	
Slogan	
Small image to display the author informations	
The button to navigate to the navigation list view	



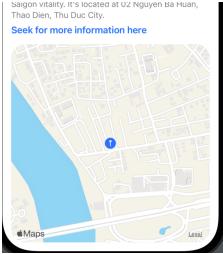
3.3.2. ListView

Features	Figures
The item's name, short description and rating starts	

3.3.3. DetailView

Features	Figures
The item's name, image, full description	
The item's image slide	

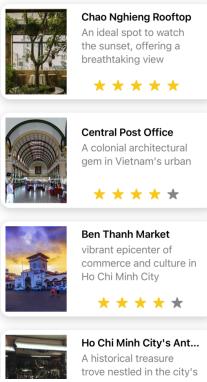
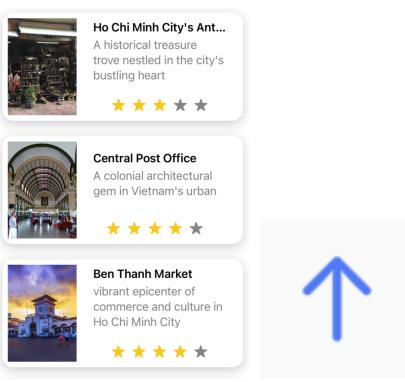
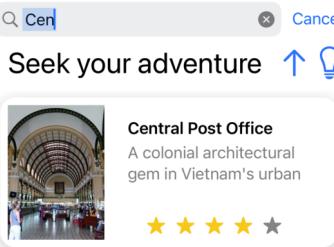


The item's location on a map	<p>Saigon vitality, it's located at 02 Nguyen Ba Huan, Thao Dien, Thu Duc City.</p> <p>Seek for more information here</p> 
More detail for the item Youtube link: https://www.youtube.com/shorts/6Yl1p3tXLA4	<p>Saigon vitality. It's located at 02 Nguyen Ba Huan, Thao Dien, Thu Duc City.</p> <p>Seek for more information here</p> 

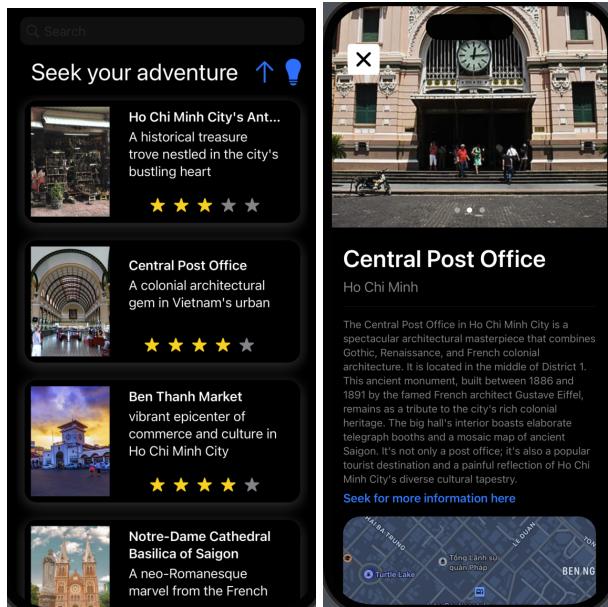
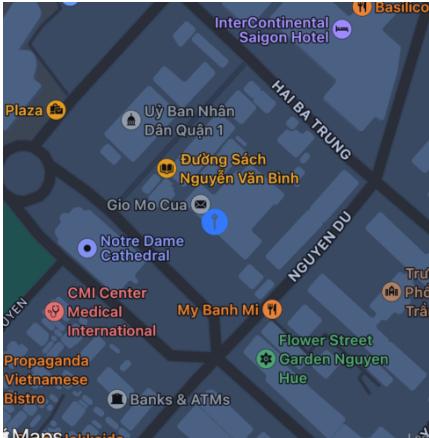
3.4. Advance features

These are the main feature that had been included in the project

Link youtube: <https://www.youtube.com/watch?v=knfGtjFiHHs>

Features	Figures
Sort by rating in ListView (Ascending or descending)	<p>Seek your adventure ↘💡</p>  <p>Seek your adventure ⬆💡</p> 
Search text field	<p>Seek your adventure ⬆💡</p> 



Dark Mode for ListView and DetailView	
Pin displaying on the map	

3.5. Bugs/Possible bugs

- For the background of the Welcome View, there is a bug related to ios 16.4 and AVPlayer from the AVkit library where there is a possible change that the video would not load during the phone simulator but only load in the View preview on xcode. The solution for this issue had not been found on the Apple main forum.
- In the sorting by rating, it doesn't have a state where the item is not on sorting, so it is a small bug that have not been fixed

4. Conclusion

Finally, ViewLurker is a distinctive application that combines visual appeal with practical simplicity to provide an exceptional user experience. Providing users with an engaging exploring experience. The engaging and straightforward UI, paired with features such as location rating, increases user engagement even further.

For the future ideas, the application have several features needed to be incorporated to enhance the user experience as well as producing a better product such as:

- AI bot: this this where the user can ask more questions about the related destination or answer some question about the destination like its history



- More destinations: more places should be added to create more variants for the user to choose from
- Add/delete/edit database: the application should have a hosting database
- Social platform for user to post their journey
- User profile

As a developer coming to a new field of mobile application development, it has been a pleasure and a fun adventure to develop this application. I expect to find new fun projects in the course to train myself to be better developer.

5. Reference

Apple forum about AVPlayer and ios 16.4 :

<https://developer.apple.com/forums/thread/727288>

A Detail View for Locations - Swiftful Thinking

<https://www.youtube.com/watch?v=SG7P1x5Yr7A&list=LL&index=1>

A Detail View for Locations - Swiftful Thinking

<https://www.youtube.com/watch?v=SG7P1x5Yr7A&list=LL&index=1>

Menu With Dark Mode Toggle Switch - Kavsoft

https://www.youtube.com/watch?v=Rnj_omjZmQ4&t=453s

Searching and Sorting - azamsharp

https://www.youtube.com/watch?v=hMZdRduyA_4

Looping Videos in SwiftUI - SchwiftyUI

<https://www.youtube.com/watch?v=ipp0Yjn76io>

6. Appendix

