

CSCI 3310 –Mobile Computing and Applications Development

Lee Tsz Kin (SC/CSCI/2) (1155112410)

Dr. Yim Pan Chui

Project Final Report

Title: Photo Diary

Demo video:

<https://photos.app.goo.gl/vJEKR6hh9GYAL8489>

Minimum requirement: Android 7.0

Target SDK: API 29 Android 10

Testing Environment: Google Pixel 4, Android 10, 5 May 2020 Security Update

Coding and Building Environment: Android Studio 3.6.3, Kotlin 1.3

Extra Dependency:

```
implementation 'com.google.code.gson:gson:2.8.6'  
implementation "com.google.android.gms:play-services-location:17.0.0"  
implementation 'com.google.android.gms:play-services-maps:17.0.0'  
implementation 'androidx.exifinterface:exifinterface:1.1.0-beta01'
```

gson is used to store a list to shared preference as a json format

play service location and maps is used in the map view and GPS recording

exifinterface is used to identify the orientation of the photo and compress it using bitmap when displaying in recycler view and mapview to enhance scrolling performance

Original Proposal:

Photo Diary is an application which can record daily life through photo and captions. When the app is started user can view their past photo taken with the app and its location, in a recycler view, arranged according to the time.

Once the user clicked on the photo, a new activity will be launched, showing the photo, its location, time and caption. When the location is clicked, a map activity will be launched and pointing the location of the photo. Also, they can edit the caption of the photo.

User can also add photo to the app by clicking the “+” fab on the first page, after the photo is taken the app will immediately record the location, and users can then input their caption of the photo. Once it is saved, it will add to the top of the recycler view.

Deviation from the proposal:

Beside from the '+' fab, an explorer fab is added. When clicked on the explorer fab, it will forward to a map view where your current location, and location of all the other photo is shown so that user can browse moment with location and not just by time.

Also, a share button has been added. So, the user can export the photo outside the app (e.g. Google Photo, Instagram, Facebook etc.) and share the moments to the others.

Difficulties:

Converting live location to a string address is complicated, as I don't know how the address looks like in different places. It may crash when I travel from one place to another.

At first, I would like to display the partial address, instead of showing a full address, but due the address format issue, using full address is a more reasonable choice.

Also, I don't know it is required to ask the user when using some permission like location services and save to external places. And I have to identify the permission is allowed or not when starting some specific function like accessing map and taking photo (as the location will immediately recorded after photo taking).

Besides, enabling the permission is not equal to the location function is enabled. I have to write script to identify where the location service is switched on or not.

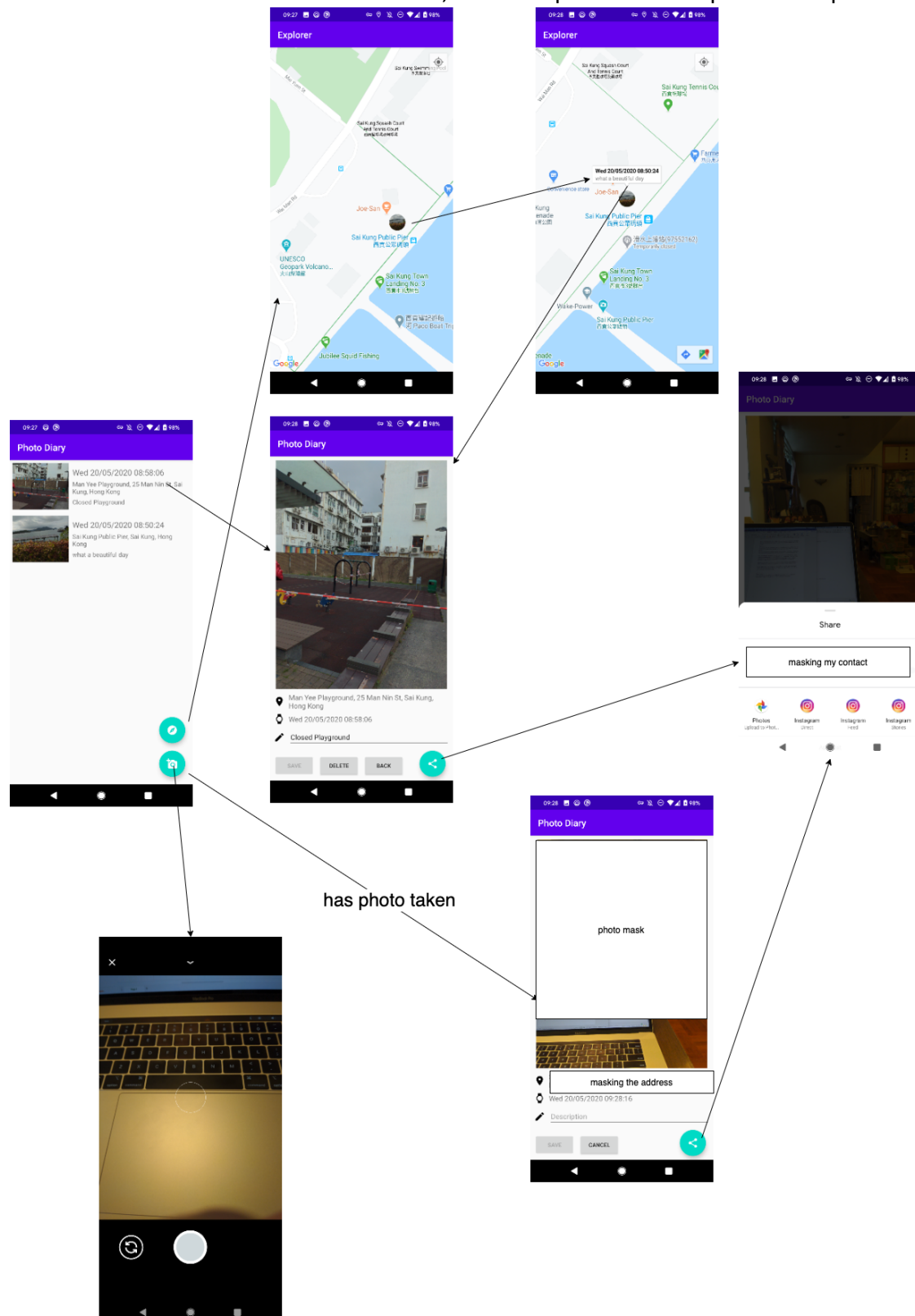
Except these, since I call up a camera intent, I have to check if the photo is really taken when the intent returned. If I didn't check it the app will then crash, since it can't render the photo from the file.

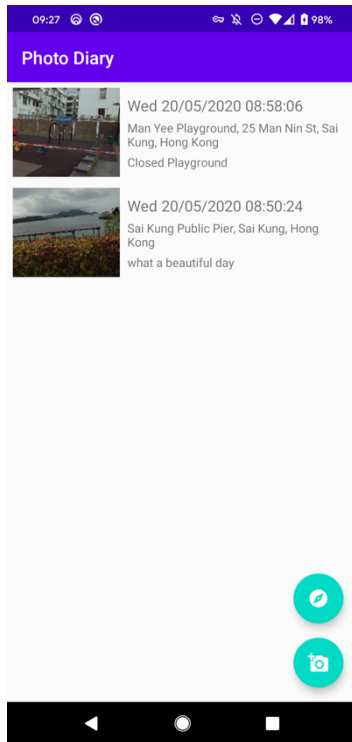
Current issue:

If the main activities leave to and resume from photo taking intent in different orientation, it may crash. (e.g. leave in portrait, resume in horizontal)

## App layout flow:

- If permission access prompted, please re-click the button after the permission is granted as to ensure the permission is granted.
- If the location services is disabled, it cannot proceed to map view and photo taking





## User Guide:

When started, a recycler view will be shown (nothing when it has no photo saved)

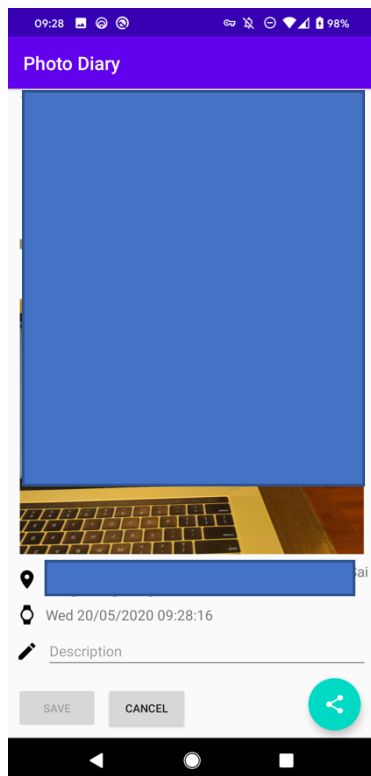
There is two fab button on the bottom-right corner, the upper one will direct you to the map view ("Explorer") and the lower one will direct you to photo taking

Both action required location services with permission granted and enabled.

After taking the photo, it will directed to add photo page, Where the address where the photo is taken and the date and time of the photo is shown.

The share button on the bottom right allows you to share the photo immediately or save it to the devices gallery.

You can also add description to it and save the photo to the app.



If the cancel button is clicked, the photo will be removed from the app data storage, and cannot be accessed. (the shared photo will not be affected.)

For the explorer page, a map view will be shown  
Where you can browse different photos when scrolling through the map.



When the photo is selected, an information bubble will be shown. Showing the date, time and the description of the photo.  
If you further click on the dialog, you can view the full size photo and edit its description.



When you click on the info box in the map, or click on an item in the main activity, a detailed page will be shown. Just like when you add a new photo, you can see the address and the time of the photo.

You can also edit the description and save it.

To delete the photo, you can click on the delete button and the photo will be immediately deleted.

Besides, you can also share the photo by clicking on the share button on the bottom right corner.