ICT2202 - DIGITAL FORENSICS
ASSIGNMENT 1

USER MANUAL

FACIAL RECOGNITION TECHNOLOGY

Group ABC

Name	Student ID
Dominic Ng Choon Meng	2001719
Jacky Chng Jia Xue	2001677
Ong Jia Yan, Celeste	2001882

1. Prerequisite

1.1 Libraries to be installed

Library	**Use**	**Installation method**
tkinter	Tkinter was used to display a simple UI for better usability and to display simple information	Run ‘pip install tkinter’ in terminal at project location
face_recognition	To compare the faces between humans	Run ‘pip install face_recognitionin’ terminal at project location
os	The os library was used to run operating system commands and reading contents of a directory	Run ‘pip install os’ in terminal at project location
csv	Csv library was used to write data into a csv file	Run ‘pip install csv’ in terminal at project location
webbrowser	Webbrowser was used to open a html page on a browser	Run ‘pip install webbrowser’ in terminal at project location
exif	Exif was used to read and extract metadata information from images	Run ‘pip install exif’ in terminal at project location
geopy	Geopy library was used to convert latitude and longitude to an address	Run ‘pip install geopy’ in terminal at project location
gmplot	Gmplot library was used to plot and display locations on google maps	Run ‘pip install gmplot’ in terminal at project location

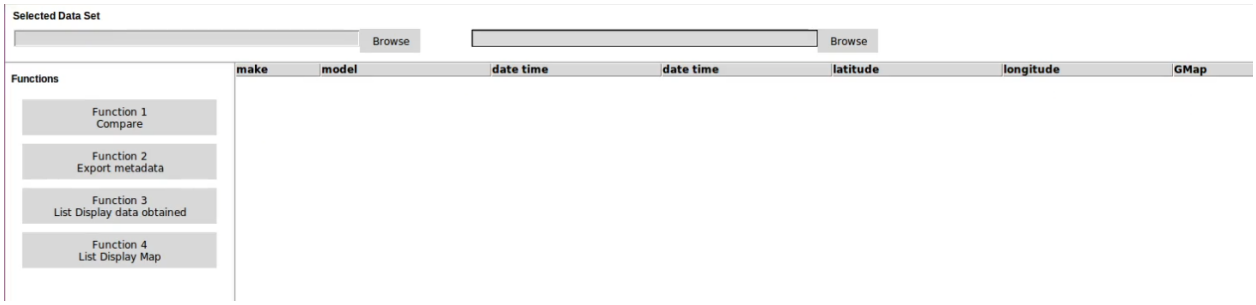
1.2 Folders to be created

A folder named Known has to be created to store the images of the person of interest

A folder named Picture has to be created as it will store the various images of different individuals (images taken by one individual).

A folder named sus has to be created to store the output after the cross-match.

2. Software Application

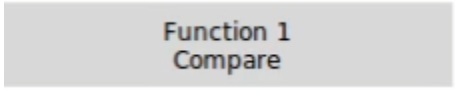


UI of Facial Recognition Application

2.1 Inputting directories

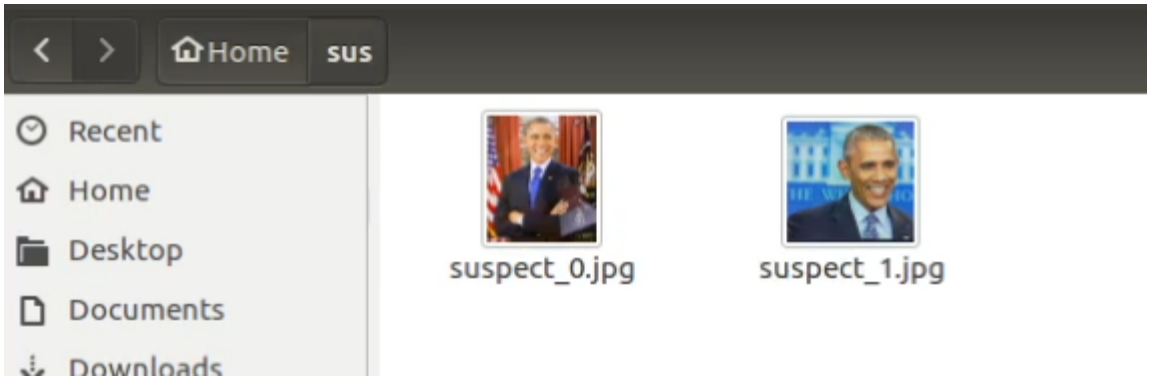
Browse to the Picture folder under the (left) input box. Similarly, browse to the image of the suspect in the Known folder under the (right) input box.

2.2 Function 1 - Comparing images



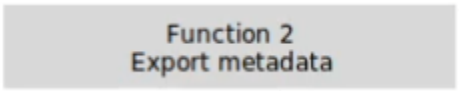
Under Functions, click on Function 1. This will compare the images from the suspect's image to the images in the Picture folder.

Message will be prompted to confirm completion of analysis.

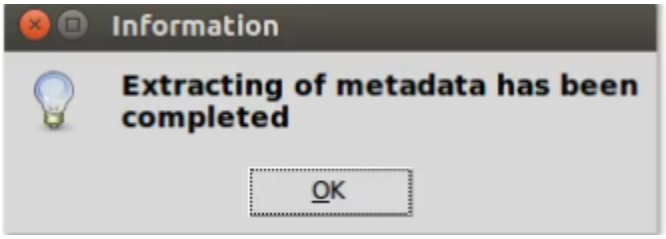


Images found in the Picture folder that was successfully matched against the suspect's image will be displayed in the sus folder now.

2.3 Function 2 - Exporting of metadata

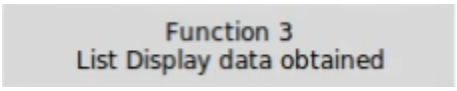


Under Functions, click on Function 2. This will export the metadata of the images in the output folder (sus folder).

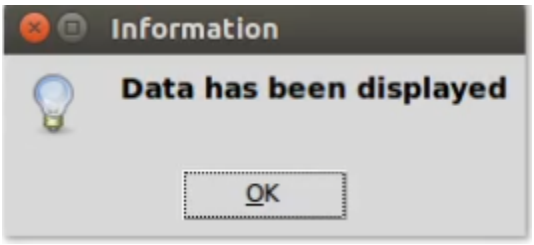


Message will be prompted to confirm the extraction.

2.4 Function 3 - Displaying of the data obtained



Under Functions, click on Function 3. This will display the metadata extracted from the images in the sus folder into a .csv format.



Message will be prompted to confirm the display of data.

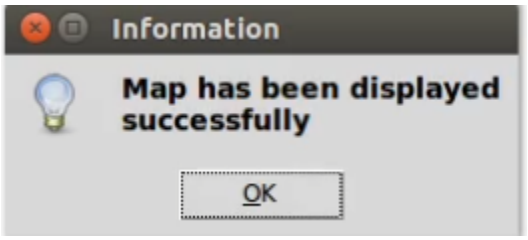
make	model	date time	date time	latitude	longitude	GMap
Apple	iPhone 11 Pro	2021:11:04 20:22:37	2021:11:04 20:22:37	1.3039472222222224	103.83171944444445	https://www.google.com/maps?q=1.3039472222222224,103.8317194444
Apple	iPhone 11 Pro	2021:11:05 14:32:40	2021:11:05 14:32:40	1.3769861111111112	103.84901388888889	https://www.google.com/maps?q=1.3769861111111112,103.8490138888

longitude	GMap	address
103.83171944444445	https://www.google.com/maps?q=1.3039472222222224,103.83171944444445	ION Orchard, 2, Orchard Turn, Orchard, Singapore, Central, 238801, Singapore
103.84901388888889	https://www.google.com/maps?q=1.3769861111111112,103.84901388888889	Nanyang Polytechnic, Ang Mo Kio Avenue 8, Ang Mo Kio, Singapore, Central, 567747, Singapore

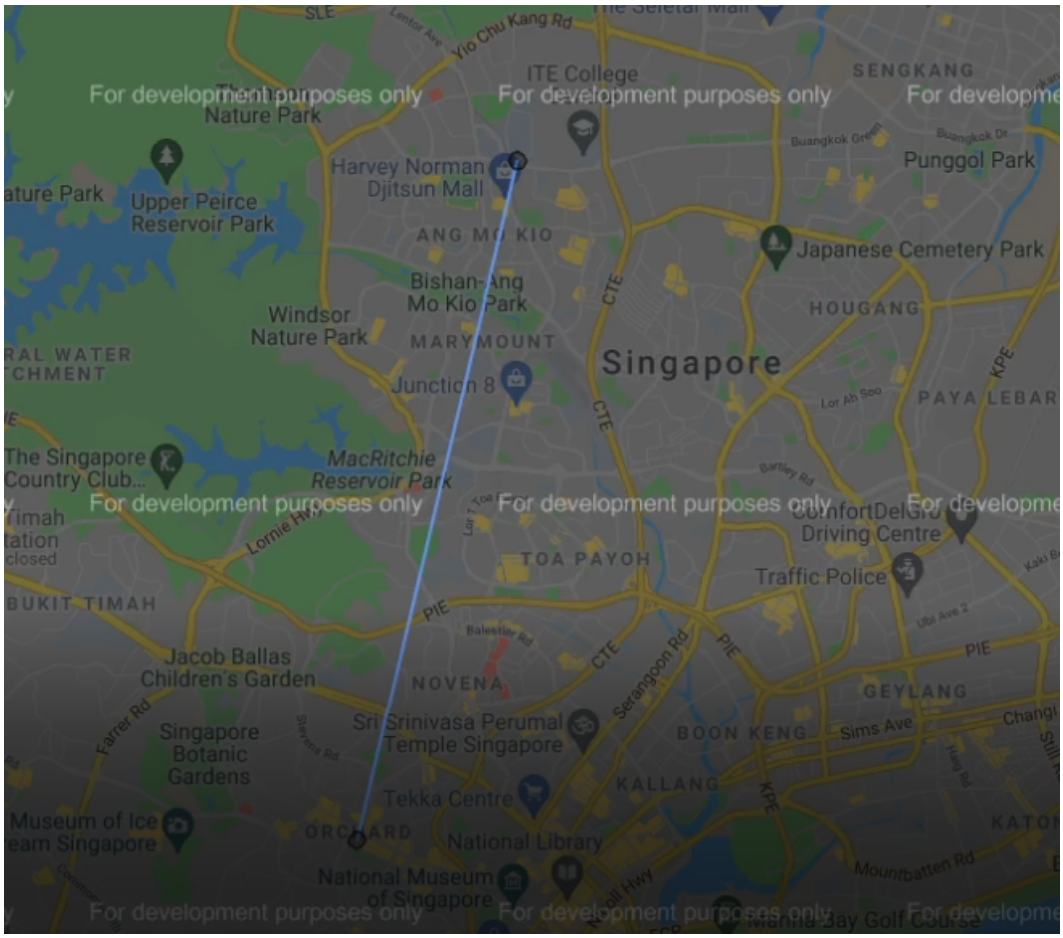
Data will be displayed on the application itself.

2.5 Function 4 - Display Map

Under Functions, click on Function 4. This will display a map to show the connection between the different locations visited by the suspect as extracted from the images' metadata.



Message will be prompted to confirm that the map has been displayed successfully.



Map will be displayed as shown with a connector to show connection between the locations based on the extracted metadata information.