# Initial Plan – Social Media

## How big is our digital footprint?


**Cardiff University School of Computer Science and Informatics**

**CM3203 – Individual Project – 40 credits**

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## Project Description

There are currently around 45 million Facebook users in the UK alone [1] and the average person has 7 social media accounts [2]. Platforms such as Facebook, Twitter, Instagram and LinkedIn are become increasingly intrinsic to our everyday life and can contain a wealth of information about us. This has subsequently made social media an attack vector that we cannot ignore. Dr Mike McGuire, a Senior Lecturer in Criminology at the University of Surrey, conducted an extensive academic study to publish Social Media Platforms and the Cybercrime Economy. A key finding was that "Cybercrimes enabled by social media are generating at least $3.25 billion in global revenue annually"[3].

In regard to social media, these attacks can manifest from a number of issues. Often privacy settings are misunderstood and leads to information being publicly available. This in turn leads to social media reconnaissance and user profiling to create a socially engineered attack. Even when a Facebook account is set to private, there are still posts made when a user updates their 'profile picture' or 'cover photo'.

Reconnaissance could even go one step further and look for information publicly available on the internet. This could potentially uncover information such as a person's publications, businesses, membership to a society and even news articles they were mentioned in.

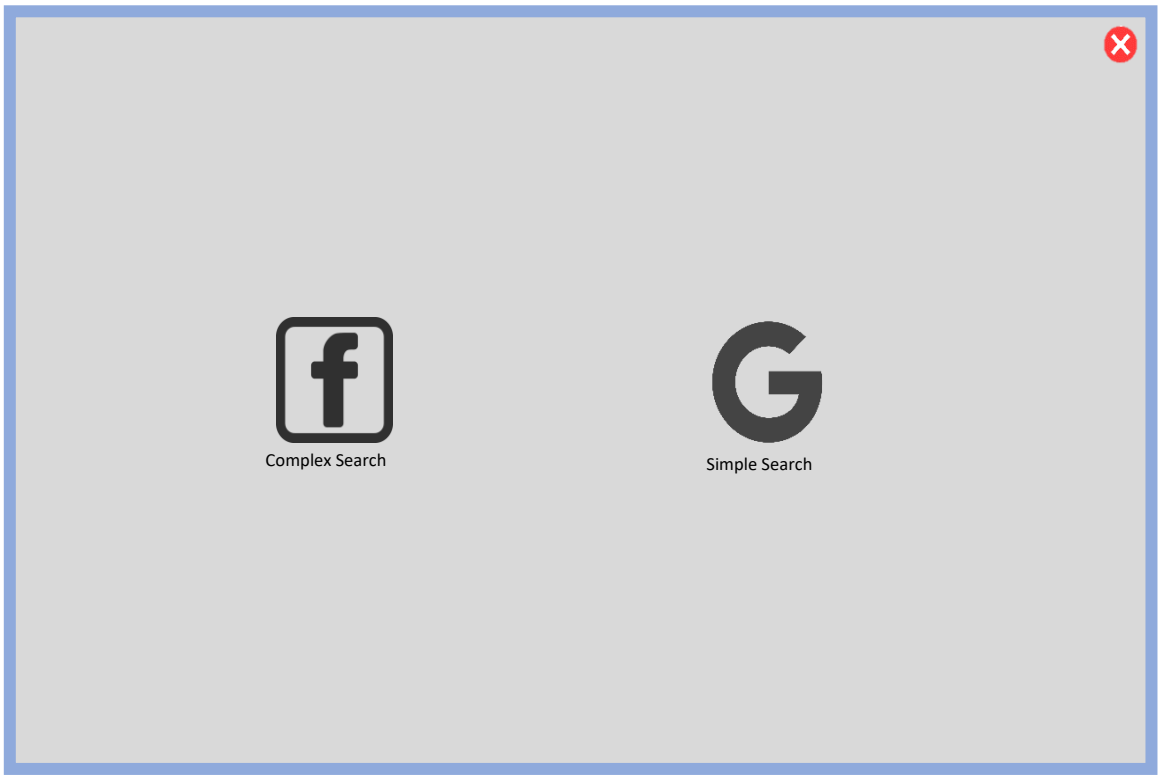
This process of collecting publicly available information is known as Open-Source Intelligence (OSINT)[4]. There are several companies offering software to assist in OSINT investigations, namely Maltego[1] and Pipl[2], however these are paid software's and often utilise databases such as the Electoral Register.

In this project I will develop a web app to perform Facebook and Google searches on individuals. Through the use of NodeJS and Selenium WebDriver I will write scripts to harvest information from a volunteers Facebook account and possibly relevant links found on Google. Reports containing the information and links found will be able to be generated. The volunteers will then be given these reports and asked to mark the accuracy of the findings.

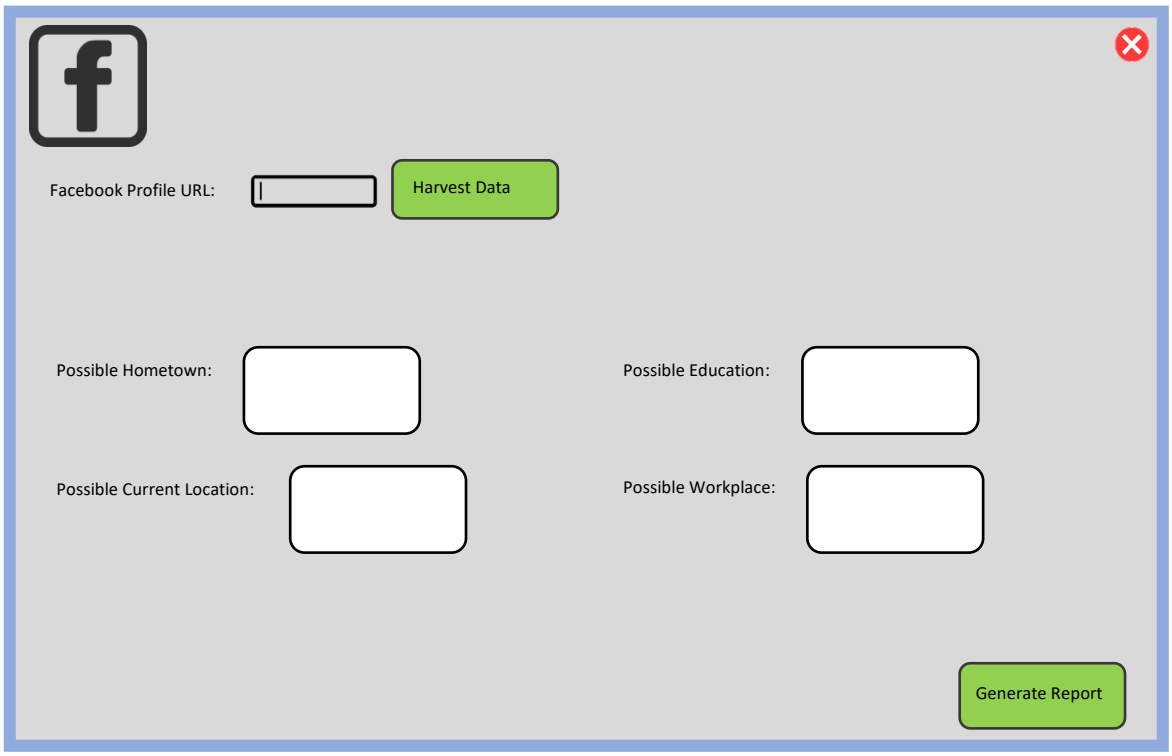
Below are some example images of how the web app could look:

[1] https://www.maltego.com/
[2] https://pipl.com/

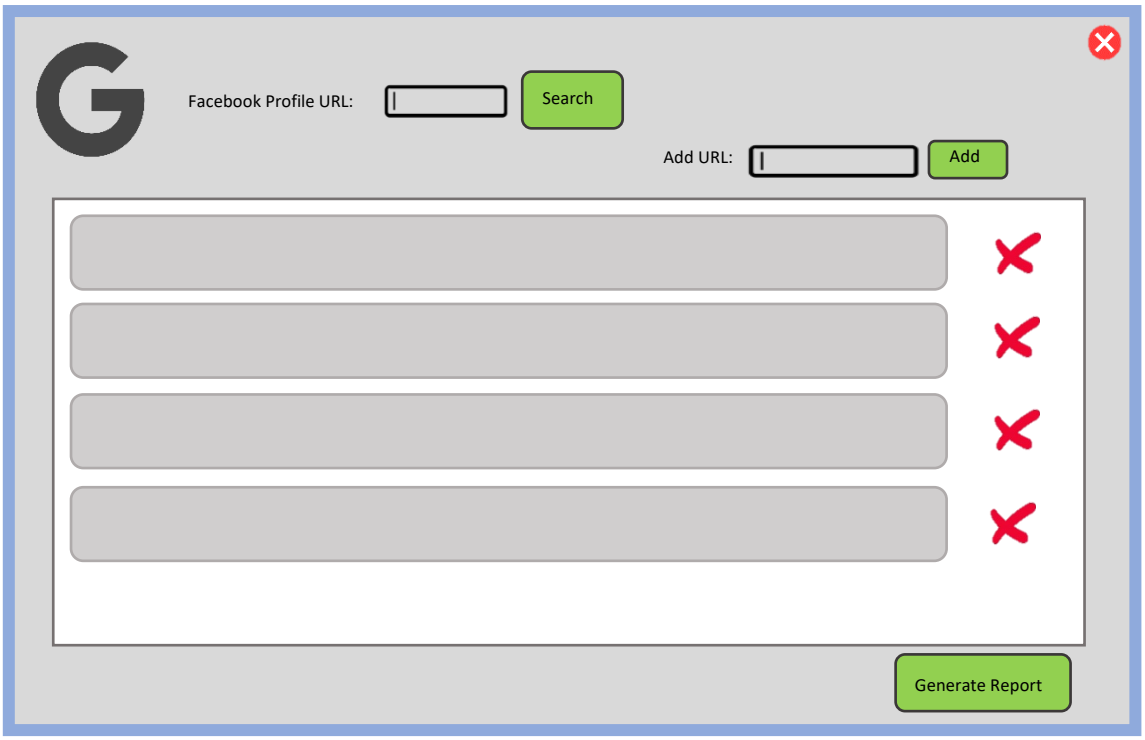
*Home Screen*




*Facebook Search*



*Google Search*




## Ethics

Even though the volunteers will have the scope of the project made explicitly clear to them and we will have their permission to investigate their social media and perform Google searches about them, it is still important I gain ethical approval before beginning.

## Project Aims and Objectives

The aim of this project is to see how accurate of a profile can be built through a private social media account. The main objectives necessary to complete this aim include:

- Develop a good understanding of Angular, NodeJS and Selenium WebDriver.
- Gain approval from ethics committee.
- Volunteer recruitment.
- Implementation of Angular and NodeJS to create a web app to host the tool.
- Implementation of NodeJS and Selenium WebDriver scripts to harvest information.
- Evaluation of user's profile reports correctness.

## Work Plan

| Week | Objectives | Notes |
|---|---|---|
| 1 (01/02 – 07/02) | - Angular Research<br>- NodeJS Research<br>- Selenium Research<br>- Submit for Ethics Approval<br>- Supervisor Meeting | A good knowledge of Angular, NodeJS and Selenium WebDriver prior to starting will help me in writing the code more effectively. |
| 2 (08/02 – 14/02) | - Volunteer Recruitment<br>- Proposal Report Submission*<br>- Web App Development | Volunteers will need sign consent forms allowing me to harvest data from their Facebook accounts. |
| 3 (15/02 – 21/02) | - Write data harvesting scripts<br>- Supervisor Meeting<br>- Web App Development | The scripts will contain lots of different functions and will be time consuming. |
| 4 (22/02 – 28/02) | - Web App Development | |
| 5 (01/03 – 07/03) | - Web App Development<br>- Supervisor Meeting | |
| 6 (08/03 – 14/03) | - Testing data harvesting scripts | The scripts will need to be tested to ensure they work. |
| 7 (15/03 – 21/03) | - Write report automation script | |
| 8 (22/03 – 28/03) | - Testing report automation script<br>- Supervisor Meeting | The script will need to be tested to ensure it works. |
| Easter Recess (29/03 – 18/04) | - Volunteer Data Collection<br>- User Profile Report's Evaluation | During Easter Recess I will collect the volunteer's data, formulate the reports and have them evaluated. |
| 9 (19/04 – 25/04) | - Report Writing<br>- Supervisor Meeting | Begin writing the final report. |
| 10 (26/04 – 02/05) | - Report Writing | |
| 11 (03/05 – 09/05) | - Report Writing<br>- Supervisor Meeting | Final supervisor meeting before the week of submission. |
| 12 (10/05 – 14/05) | - Report Proof Reading<br>- Final Report Submission* | Submit Final Report |

**Milestones*

**References**

[1] Tom Bendix, 2021, Facebook UK Statistics 2021, Available at: https://www.socialfilms.co.uk/blog/facebook-uk-statistics#:~:text=with%2073m%2B%20views-,How%20many%20people%20use%20Facebook%20in%20the%20UK%3F,seeing%20considerable%20growth%20over%20time [Accessed January 2021]

[2] Stephen Phillips, 2019, Social Media Statistics UK, Available at: https://hostreviews.co.uk/social-media-statistics-uk/#:~:text=On%20average%2C%20each%20individual%20social,from%2066%25%20to%2067%25 [Accessed January 2021]

[3] Laura Butler, 2019, Cyber Criminals raking in over $3bn a year from social media crime, Available at: https://www.surrey.ac.uk/news/cybercriminals-raking-over-3bn-year-social-media-crime [Accessed January 2021]

[4] John Breeden II and Josh Fruhlinger, 8 top open source intelligence tools, Available at: https://www.csoonline.com/article/3445357/what-is-osint-top-open-source-intelligence-tools.html [Accessed January 2021]