

SeadragonSearch

Analytics Documentation

None

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None

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1. Welcome to SeadragonSearch Analytics Documentation

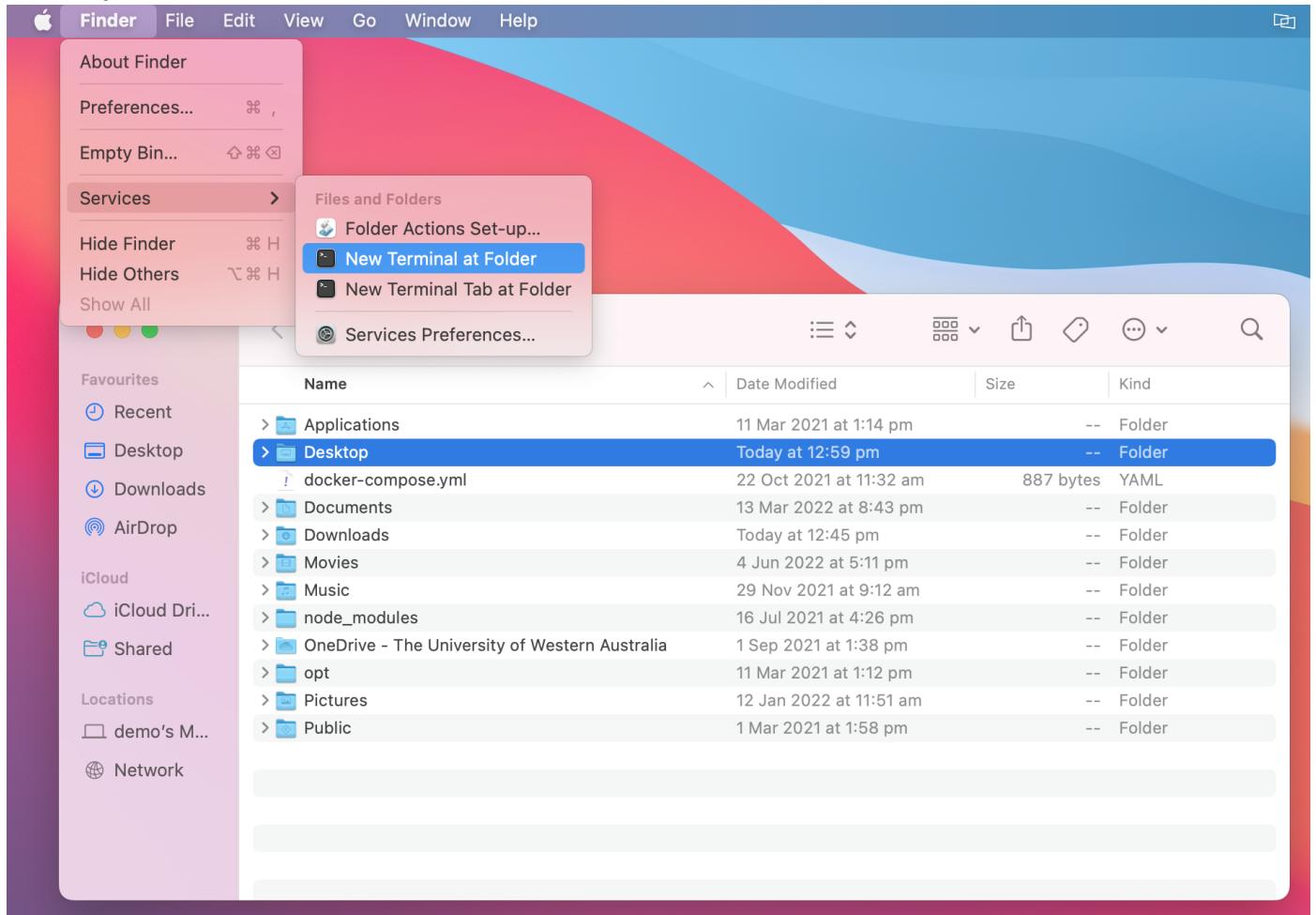
Students undertaking their cap-stone computer science, data science and software engineering unit, [Professional Computing](#) at the University of Western Australia, during semester 2 of 2022. [Dominic Cain](#), [Hannah Doret](#), [Nathan Eden](#), [Rachel Nguyen](#) and [Aiden Smith](#) were responsible for the creation of this project.

2. The purpose of this documentation

This documentation is directed towards both the general users, and potential maintainers of this application. This documentation outlines the use and installation of this application, along with the packages/libraries included in the application.

3. Installation Guide

1. On your **MacOS** computer, use the **Finder** to **select the folder** you wish to download the application to.
2. Once the folder is selected, click **Finder**, choose **Services > New Terminal at Folder** (Located next to the Apple menu ⓘ in the corner of your screen).



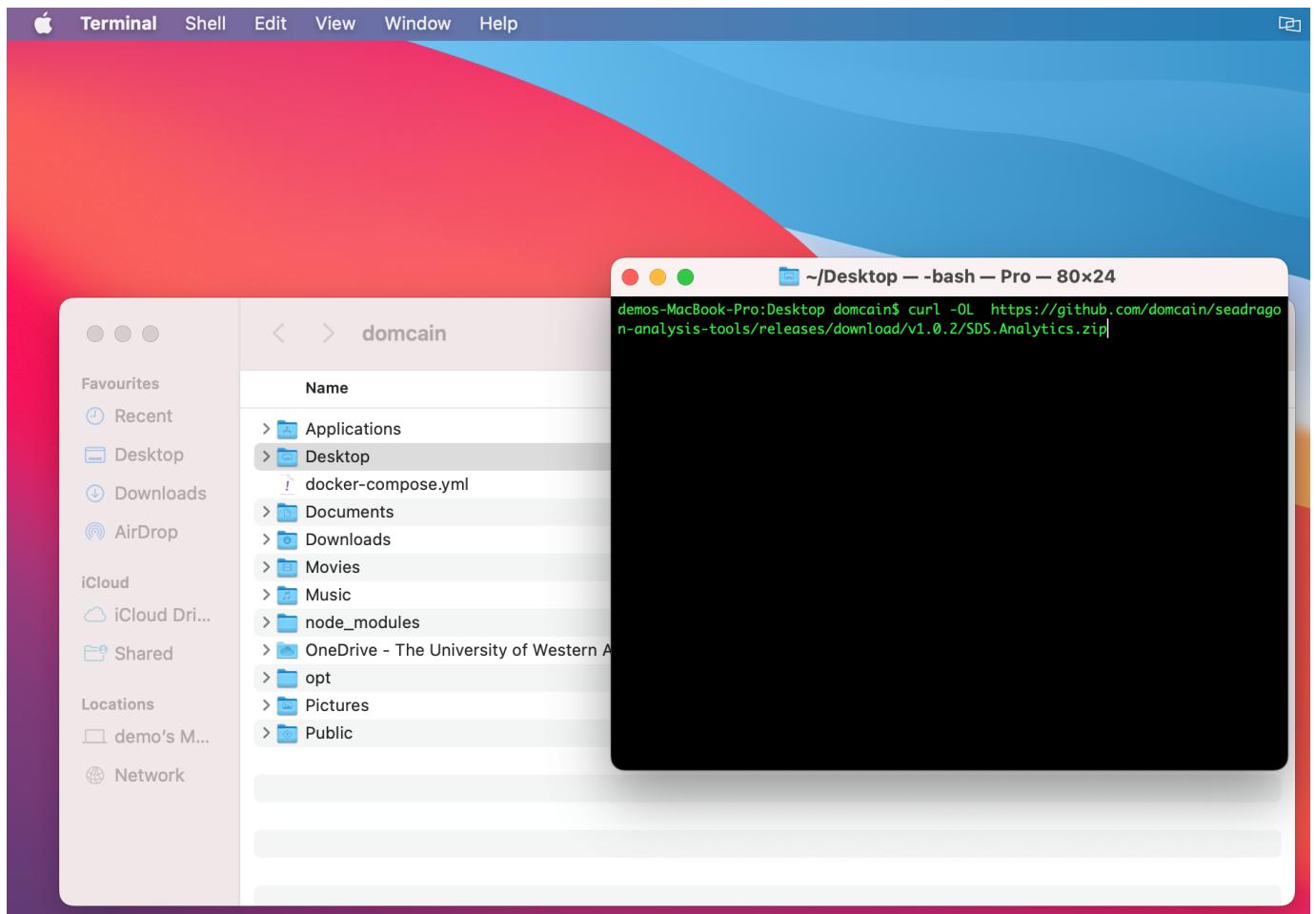
3. To download the project, **copy the following command**:

```
1 curl -OL https://github.com/domcain/seadragon-analysis-tools/releases/download/v1.0.2/SDS.Analytics.zip
```

4. **Paste the command** into your command-line.

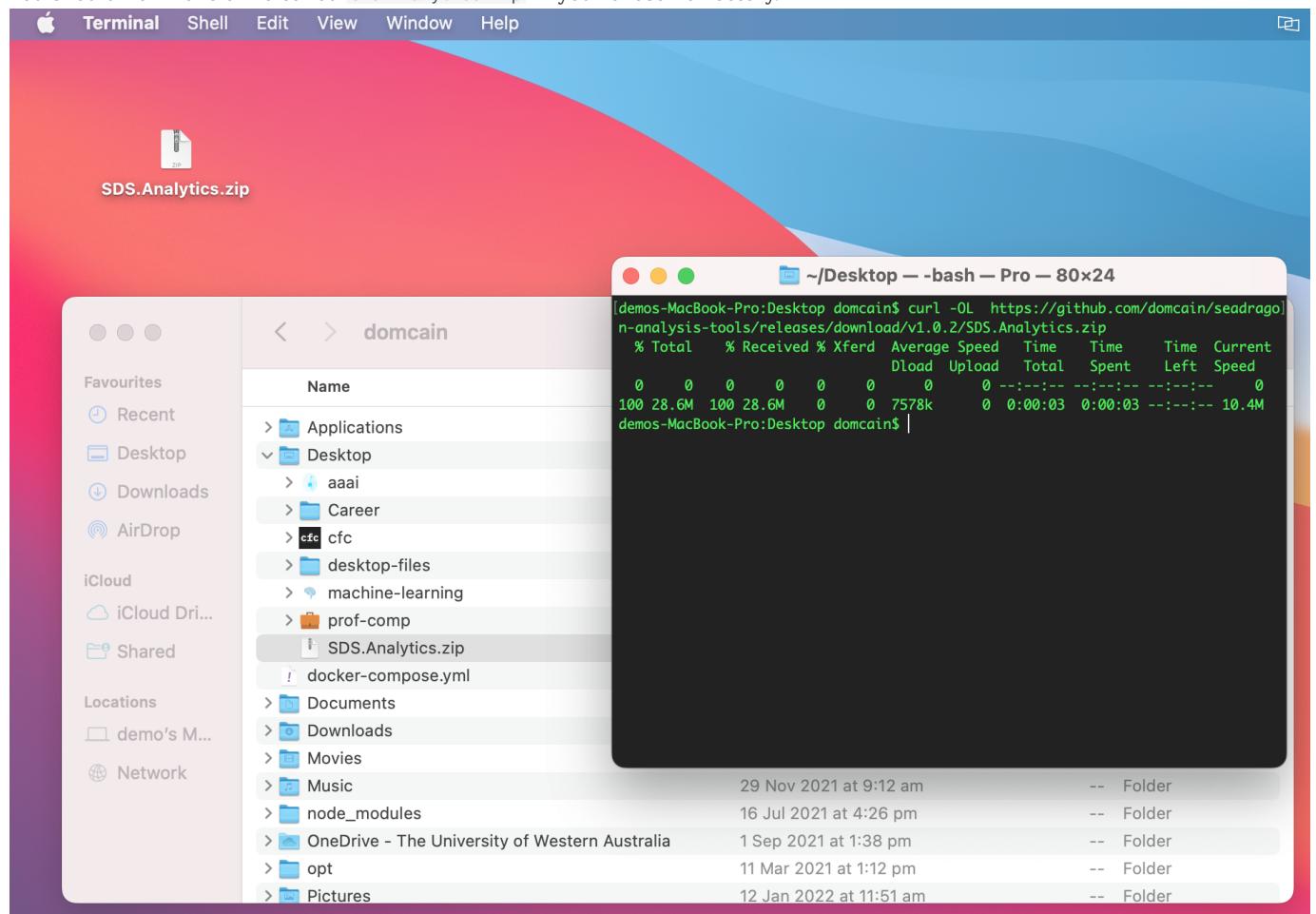
What does this do?

This accesses [the website where the code is located](https://github.com/domcain/seadragon-analysis-tools/releases/download/v1.0.2/SDS.Analytics.zip) and downloads the application. Performing this manually will result in bugs related to security interference from GitHub

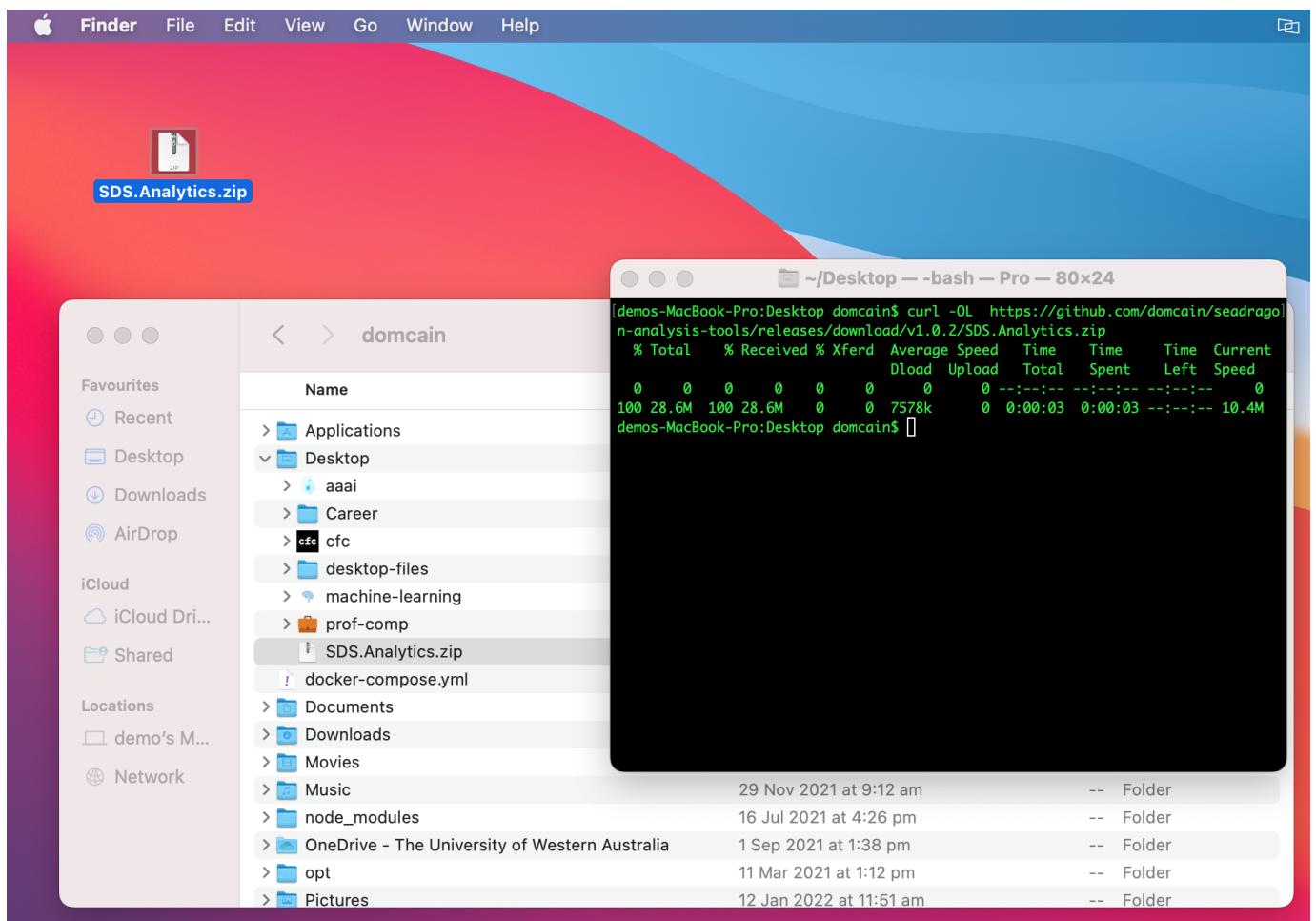


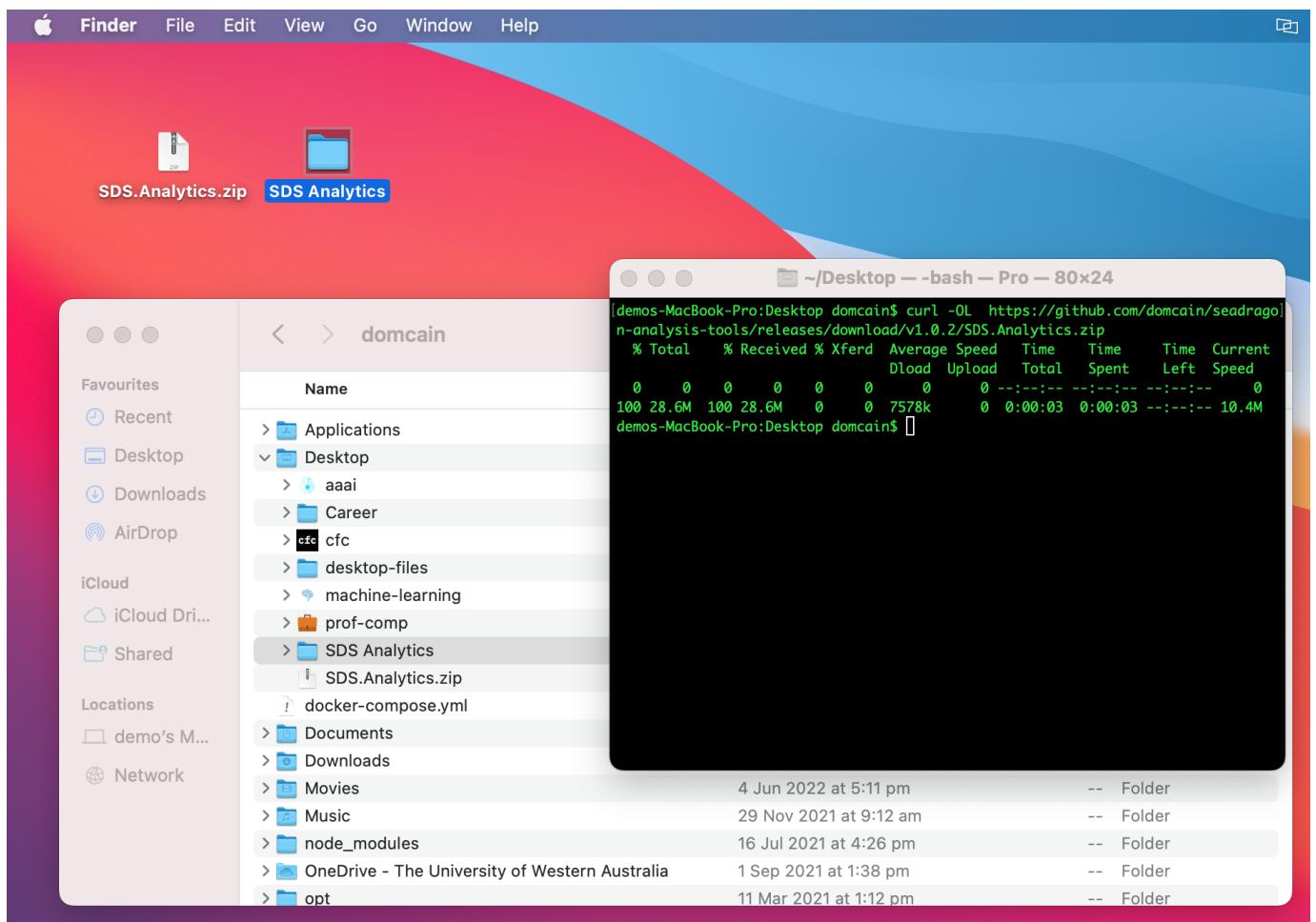
5. Click **enter** if the command has not already started.

You should now have a file called `SDS.Analytics.zip` in your chosen directory.



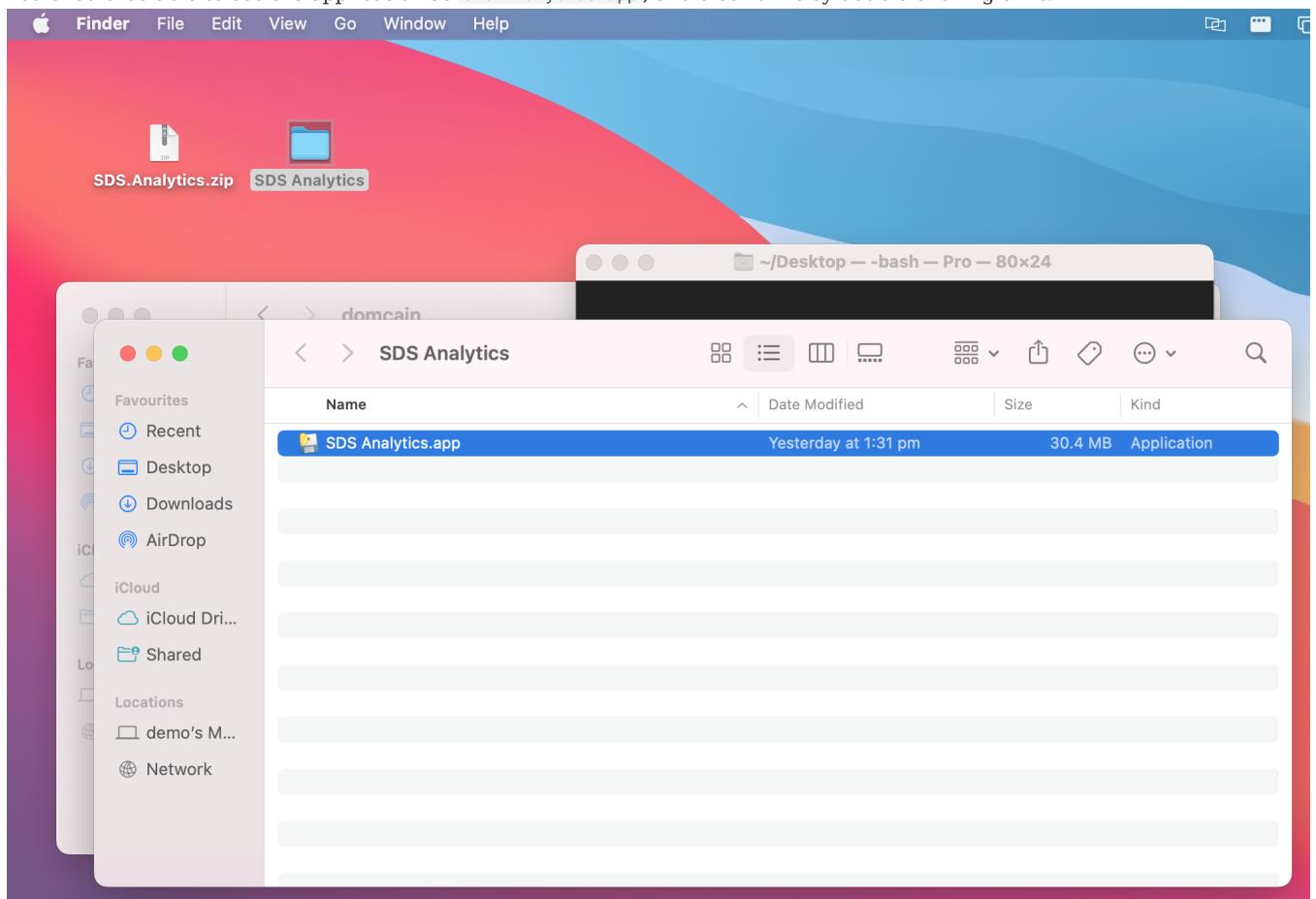
6. **Unzip** the `SDS.Analytics.zip` folder by double clicking on it with your mouse.





8. Open the SDS Analytics folder.

- You should be able to see the application as `SDS Analytics.app`, and also run it by double clicking on it.



 Want to store the application elsewhere?

Go for it! The application can be run from anywhere on your computer!

4. Overview

5. User Manual

Upload SeadragonSearch file A maximum of 1 SeadragonSearch file can be uploaded at a time. The file needs to be an excel file. You can upload the file in two ways: 'Click to browse' Click the SeadragonSearch upload box Select the SeadragonSearch excel file from the file explorer pop up

Clicking SDS window -->

'Drag & drop' From a separate file explorer window, drag the SeadragonSearch excel file into the SeadragonSearch upload box

Upload iNaturalist file(s) A maximum of 3 iNaturalist files can be uploaded at a time. This is to accommodate the Common, Leafy and Ruby Seadragon species data being stored in separate files. Upload these files in any order. iNaturalist files must be csv files. Supported extensions are .csv and .txt. Again, you can upload the file in two ways: 'Click to browse' Click the iNaturalist upload box Select up to 3 iNaturalist csv files from the file explorer pop up

Click on iNat window -->

'Drag & drop' From a separate file explorer window, drag up to 3 iNaturalist csv files into the iNaturalist upload box

Removing files To remove any uploaded file, click the 'x' button next to the path of the file you wish to remove.

Analysing the files Once you are satisfied you have uploaded the files you wish to analyse, click 'Submit'. This will bring up a pop up window containing a preview of the results of the analysis. If you wish to download the full details of the results, click 'Download Results'. From the file explorer pop up, you can navigate to where you would like the results file to be downloaded, as well as rename the file to something of your choice. Interpreting the results file The results file will be an Excel (.xls) document. The first worksheet in the file is a copy of the preview that was provided when the results file was generated. Each subsequent worksheet in the file corresponds to a specific iNaturalist file. The highlighted rows are entries that may be missing from the SeadragonSearch database. Each highlighted entry should be reviewed by a human before being added to the SeadragonSearch database.

6. Running the code in the development environment

1. Clone the repository to your personal computer by running:

```
1 $ git clone https://github.com/domcain/seadragon-analysis-tools.git
```

in your terminal.

2. In your terminal, navigate to/open the cloned repository.

3. From the seadragon-analysis-tools/ directory, install the required dependencies to run the application locally.

- You can do this using the command:
- MacOS:

```
1 pip install -r requirements.txt
```

- Windows:

```
1 py -m pip install -r requirements.txt
```

4. From the /src directory, run:

```
1 python3 'SDS Analytics.py'
```

7. Project Layout

```

1  seadragon-analysis-tools/
2    docs/
3      mkdocs.yml          # The documentation pages configuration file.
4      requirements.txt     # Dependencies required to run the documentation locally.
5    docs/
6      index.md            # The documentation homepage.
7      for-the-developer.md # Documentation relevant to code maintainers.
8      user-manual.md      # Documentation relevant to users of the application.
9      packages-used.md    #
10     images/
11       seadragon.png      # Icon in top left of documentation page.
12   src/
13     SDS_Analytics.py    # Main UI code.
14     data_analysis.py     # Code for producing output files.
15     images/
16       cloud.png          # Image used in the UI.
17       sdstitle.png        # Image used in the UI.
18       seahorse.gif        # Special image for MacOS Dock icon.
19   Test_case/
20     Test_cases.csv       #
21     test_data_analysis.py # Code for testing the output file.
22   1/
23     inat1.csv            # Test 1.
24   2/
25     inat2.csv            # Test 2.
26   3/
27     inat3.csv            # Test 3.
28   4/
29     inat4.csv            # Test 4.
30   5/
31     inat5.csv            # Test 5.
32   6/
33     inat6.csv            # Test 6.
34   7/
35     inat7.csv            # Test 7.
36   8/
37     inat8.csv            # Test 8.
38   9/
39     inat9.csv            # Test 9.
40   10/
41     inat10.csv           # Test 10.
42   11/
43     inat11.csv           # Test 11.
44   12/
45     inat12.csv           # Test 12.
46   13/
47     inat13.csv           # Test 13.
48   14/
49     inat14.csv           # Test 14.
50   .gitignore             # File to minimise unnecessary repository file contributions.
51   hook-tkinterdnd2.py    # Hook file required to build a python application that uses tkinterdnd2.
52   LICENSE.txt            # License (Creative Commons).
53   README.md              # Initial documentation.
54   requirements.txt        # Dependencies required to run the application locally.

```

8. Packages Used

Listed below are the imported python modules used in this project.

Need more info?

Click on any of the headings to read module documentation.

8.1 User Interface

`SDS Analytics.py` acts as the `main.py` seen in a variety of other projects. This file creates the user interface.

[tkinter](#) is the standard Python interface to the Tcl/Tk GUI toolkit. This package provides the building blocks of the user interface.

[tkinterdnd2](#): This package provides the 'drag & drop' functionality to the interface.

8.2 Data Analysis

`data_analysis.py` handles all under the hood operations taking input file paths, and producing an excel file comparing the contents of the input files.

[xlrd](#): This package provides the tools required to read and analyse data from input excel files.

[xlwt](#): This package provides the tools to generate the output excel file.

[openpyxl](#): This package provides the tools to read/write excel files other than .xls, such as .xlsx, .xlsm, .xltm, .xltx