



Combating COVID-19 Outbreaks

WQD7005 Data Mining
Master of Data Science | University of Malaya

Part E: Develop Data Mining Results on Web (Flask)
and Mobile Application (Kivy)

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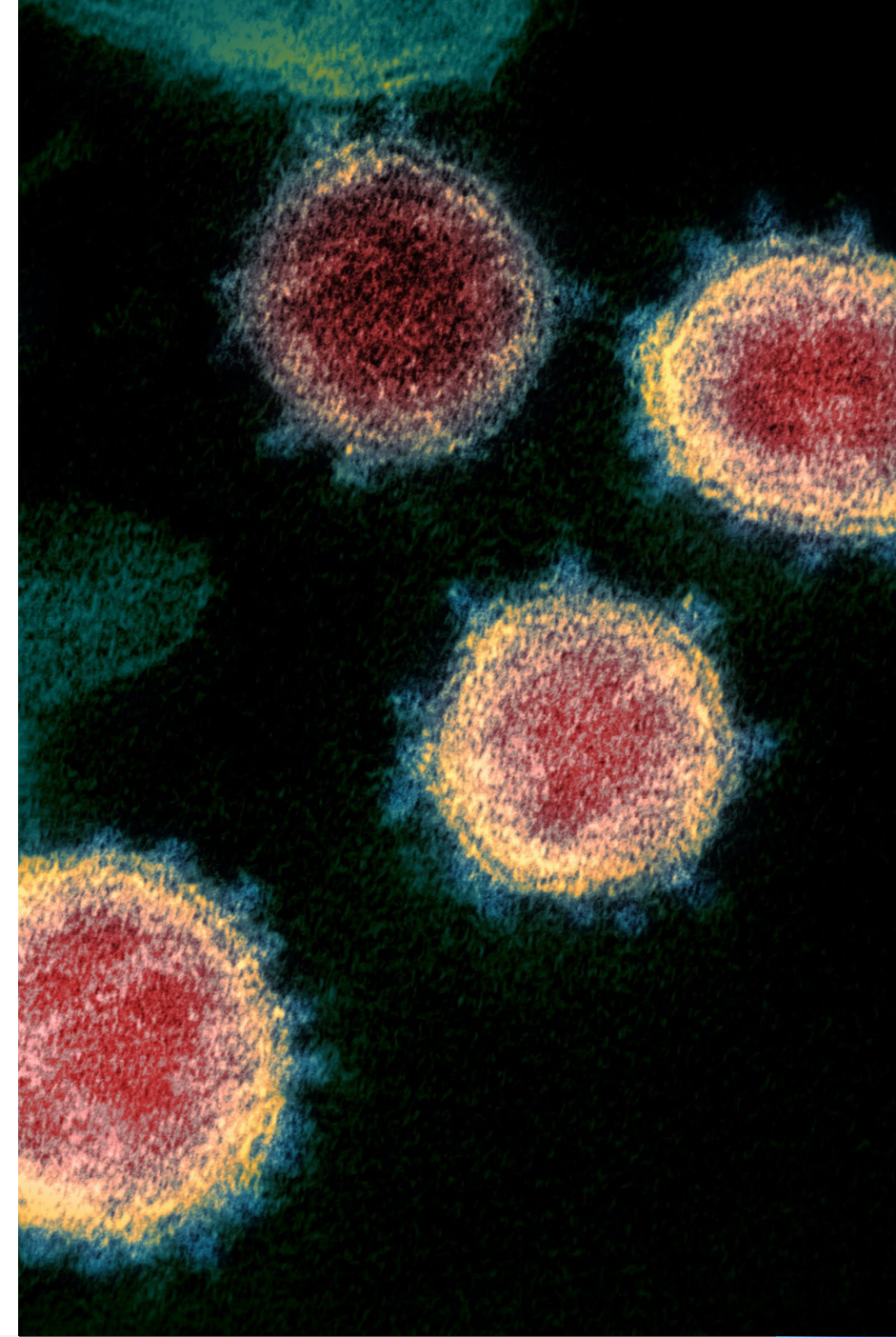
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Assignment Milestones

WQD7005 Data Mining | Semester 2 Session 2019/2020



- Part A: (Group)
 - Web Crawling of Real-time Data
- Part B: (Group)
 - Management of Data using Hadoop Data Warehouse or Data Lake
- Part C: (Group)
 - Accessing and Processing of Data from Hadoop Data Warehouse or Data Lake using Python
- Part D: (Individual)
 - Interpretation and Communication of Data Insights
- **Part E: (Group)**
 - **Deployment of the Data Mining Results on Web (Flask) and Mobile Application (Kivy)**



Assignment Background

Nearly every app we build will use some form of services external to the mobile device.

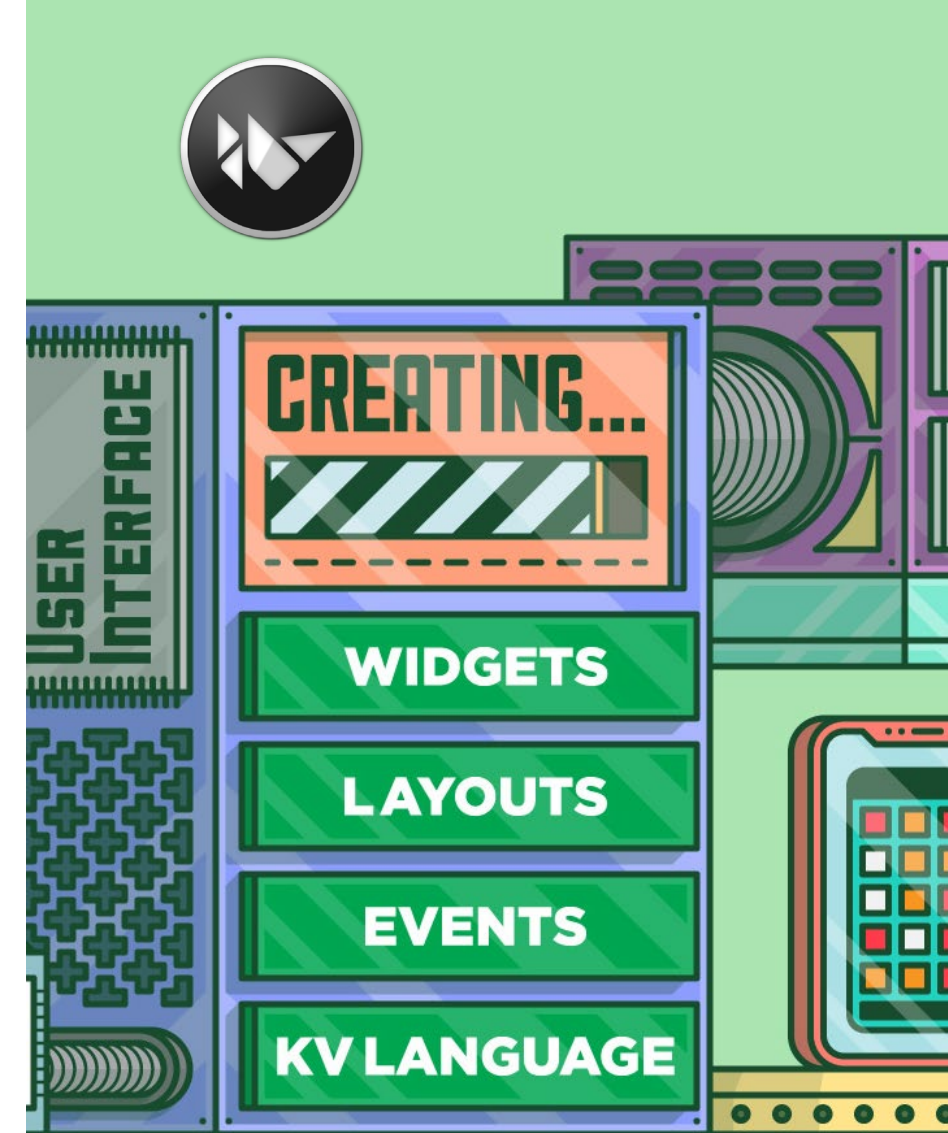
Build Once, Deploy Everywhere, Easily Test, Monitor, and Update Dynamically are some of the common words we heard daily when it comes to software development.

Kivy is an open source Python framework, which allows the development of multi-touch mobile and desktop applications with Natural User Interface. It contains all the modules for building applications such as:

- Modules for input from the mouse, keyboard, TUIO and other OS-specific inputs
- A graphics library
- Multi-touch support provided by a range of widgets
- A designing language, called KV Language, to design custom widgets, layouts, etc.

The Python, Kivy and KV programming language code which was use as the tool to perform the development of mobile application is also uploaded in my group assignment GitHub at the link below:

- <https://github.com/hlkok/WQD7005DataMining-Assignments>



Note: TUIO is an open framework that defines a common [protocol](#) and [API](#) for tangible multitouch surfaces.

COVID-19 Tracker

Framework Design Objective

	date	country	confirmed	fatalities	recovered
0	2020-01-22	Afghanistan	0	0	0
1	2020-01-22	Albania	0	0	0
2	2020-01-22	Algeria	0	0	0
3	2020-01-22	Andorra	0	0	0
4	2020-01-22	Angola	0	0	0
...
26491	2020-06-13	West Bank and Gaza	489	3	415
26492	2020-06-13	Western Sahara	9	1	8
26493	2020-06-13	Yemen	705	160	39
26494	2020-06-13	Zambia	1357	10	1104
26495	2020-06-13	Zimbabwe	356	4	54

26496 rows × 5 columns

	date	country	confirmed	fatalities	recovered
26462	2020-06-13	Singapore	40197	26	28808
26391	2020-06-13	Indonesia	37420	2091	13776
26445	2020-06-13	Philippines	25392	1074	5706
26418	2020-06-13	Malaysia	8445	120	7311
26477	2020-06-13	Thailand	3134	58	2987
26490	2020-06-13	Vietnam	334	0	323
26336	2020-06-13	Brunei	141	2	138
26342	2020-06-13	Cambodia	128	0	125
26406	2020-06-13	Laos	19	0	19

184 countries are in dataset:

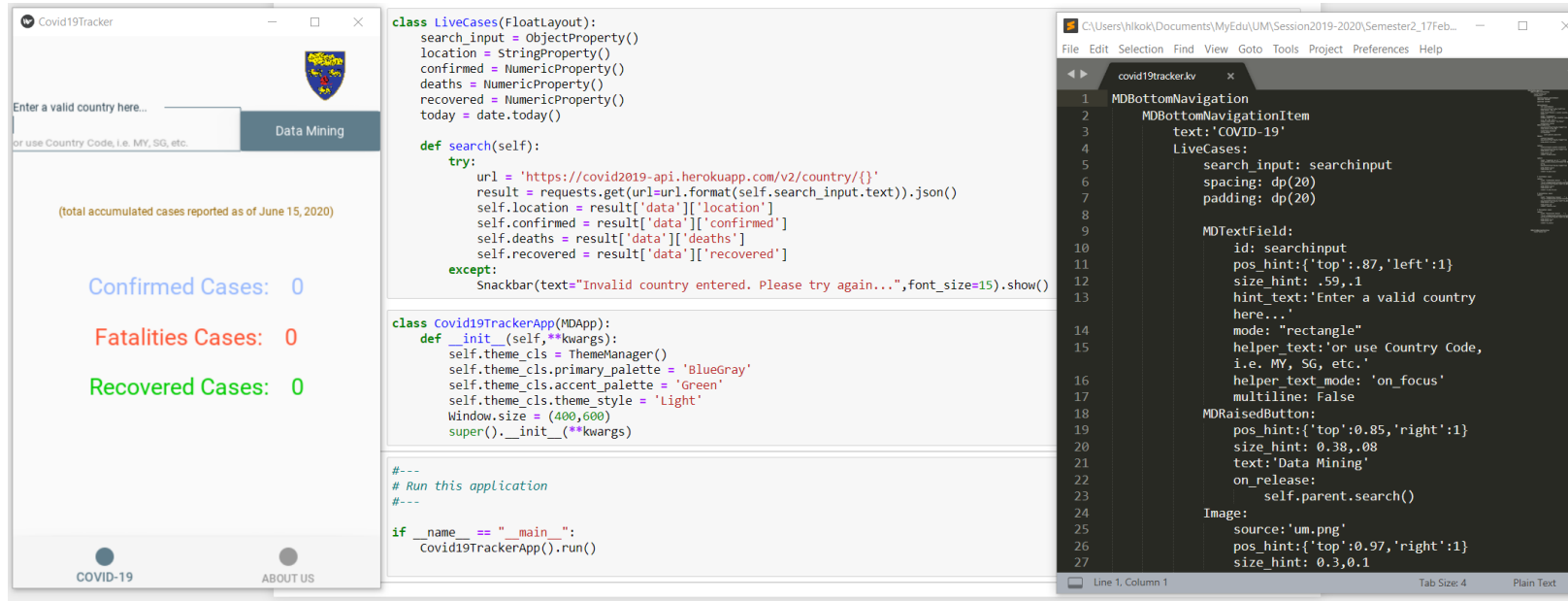
['Afghanistan' 'Albania' 'Algeria' 'Andorra' 'Angola'
 'Antigua and Barbuda' 'Argentina' 'Armenia' 'Australia' 'Austria'
 'Azerbaijan' 'Bahamas' 'Bahrain' 'Bangladesh' 'Barbados' 'Belarus'
 'Belgium' 'Belize' 'Benin' 'Bhutan' 'Bolivia' 'Bosnia and Herzegovina'
 'Botswana' 'Brazil' 'Brunei' 'Bulgaria' 'Burkina Faso' 'Burma' 'Burundi'
 'Cabo Verde' 'Cambodia' 'Cameroon' 'Central African Republic' 'Chad'
 'Chile' 'China' 'Colombia' 'Comoros' 'Congo (Brazzaville)'
 'Congo (Kinshasa)' 'Costa Rica' 'Cote d'Ivoire' 'Croatia' 'Cuba' 'Cyprus'
 'Czechia' 'Denmark' 'Diamond Princess' 'Djibouti' 'Dominica'
 'Dominican Republic' 'Ecuador' 'Egypt' 'El Salvador' 'Equatorial Guinea'
 'Eritrea' 'Estonia' 'Eswatini' 'Ethiopia' 'Fiji' 'Finland' 'France'
 'Gabon' 'Gambia' 'Georgia' 'Germany' 'Ghana' 'Greece' 'Grenada'
 'Guatemala' 'Guinea' 'Guinea-Bissau' 'Guyana' 'Haiti' 'Holy See'
 'Honduras' 'Hungary' 'Iceland' 'India' 'Indonesia' 'Iran' 'Iraq'
 'Ireland' 'Israel' 'Italy' 'Jamaica' 'Japan' 'Jordan' 'Kazakhstan'
 'Kenya' 'Korea, South' 'Kosovo' 'Kuwait' 'Kyrgyzstan' 'Laos' 'Latvia'
 'Lebanon' 'Lesotho' 'Liberia' 'Libya' 'Liechtenstein' 'Lithuania'
 'Luxembourg' 'MS Zaandam' 'Madagascar' 'Malawi' 'Malaysia' 'Maldives'
 'Mali' 'Malta' 'Mauritania' 'Mauritius' 'Mexico' 'Moldova' 'Monaco'
 'Mongolia' 'Montenegro' 'Morocco' 'Namibia' 'Nepal' 'Netherlands'
 'New Zealand' 'Nicaragua' 'Niger' 'Nigeria' 'North Macedonia' 'Norway'
 'Oman' 'Pakistan' 'Panama' 'Papua New Guinea' 'Paraguay' 'Peru'
 'Philippines' 'Poland' 'Portugal' 'Qatar' 'Romania' 'Russia' 'Rwanda'
 'Saint Kitts and Nevis' 'Saint Lucia' 'Saint Vincent and the Grenadines'
 'San Marino' 'Sao Tome and Principe' 'Saudi Arabia' 'Senegal' 'Serbia'
 'Seychelles' 'Sierra Leone' 'Singapore' 'Slovakia' 'Slovenia' 'Somalia'
 'South Africa' 'South Sudan' 'Spain' 'Sri Lanka' 'Sudan' 'Suriname'
 'Sweden' 'Switzerland' 'Taiwan*' 'Tajikistan' 'Tanzania' 'Thailand'
 'Togo' 'Trinidad and Tobago' 'Tunisia' 'Turkey' 'US' 'Uganda' 'Ukraine'
 'United Arab Emirates' 'United Kingdom' 'Uruguay' 'Uzbekistan'
 'Venezuela' 'Vietnam' 'West Bank and Gaza' 'Western Sahara' 'Yemen'
 'Zambia' 'Zimbabwe']



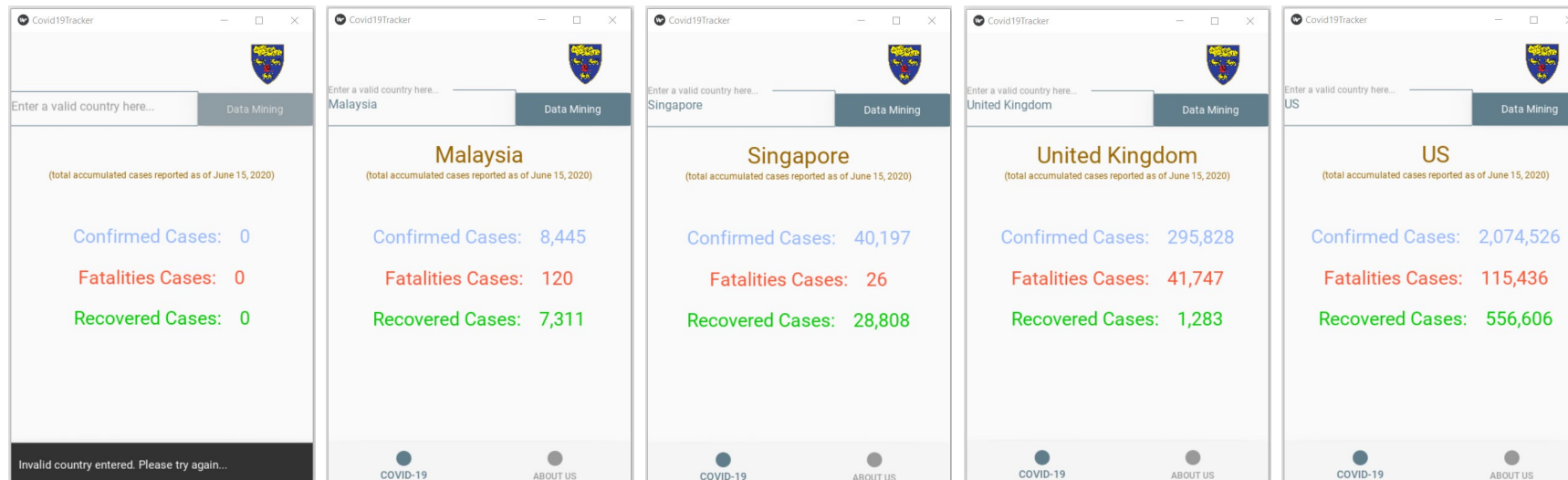
- To develop a mobile application tracker for COVID-19 to retrieve latest accumulated cases across the world.
- Built-in a validation for registered countries for ease of usage.
- Just need to program once, and can deploy across multiple platforms.

COVID-19 Tracker Mobile Application

developed using Kivy and KV Language



- Using **Kivy** as a viable way to **code in Python** for mobile devices and across platform devices.
- Ability to use **APIs** and replaces the graphical interfaces like HTML and CSS.



COVID19-API

- <https://covid2019-api.herokuapp.com/>
- <https://covid2019-api.azurewebsites.net/>

- Applications:
- Coronavirus App by YounesAbdullah
 - Covid 19 App - Map, info & help by DavidBarbaran
 - COVID-19 Visual Explorer by FitnesAI
 - BAILAM (Data and API Integration)
 - Coronavirus Tech Handbook (Data Tools)

References
<https://github.com/CSSEGISandData/COVID-19>

GET /v2/country/{country_name} Get Country

Get the data based on a country's name or its ISO code

- **location**: a country's name
- **confirmed**: confirmed cases
- **deaths**: death cases
- **recovered**: recovered cases
- **active**: active cases

Summary

- **Kivy** allows developer to easily program natural interfaces for a wide selection of devices. It is attractive to a variety of developers for a few key reasons:
 - Kivy has elegant built-in support for **multitouch devices**.
 - Kivy is the only viable way to **code in Python** on mobile devices.
 - Kivy **replaces the horrible APIs** of earlier graphical interfaces like HTML and CSS.
 - Kivy allows you to **maintain a single application** for numerous operating systems.
- The **KV language**, often referred to as kvleng, is a simple **markup syntax** that I think of as “what HTML would look like if HTML looked like Python”.





Thank You

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