**Nama Anggota Kelompok 4 :**

1. Eny Widiyastuti (11170940000011)

2. Andi Rusniaty K (11170940000016)

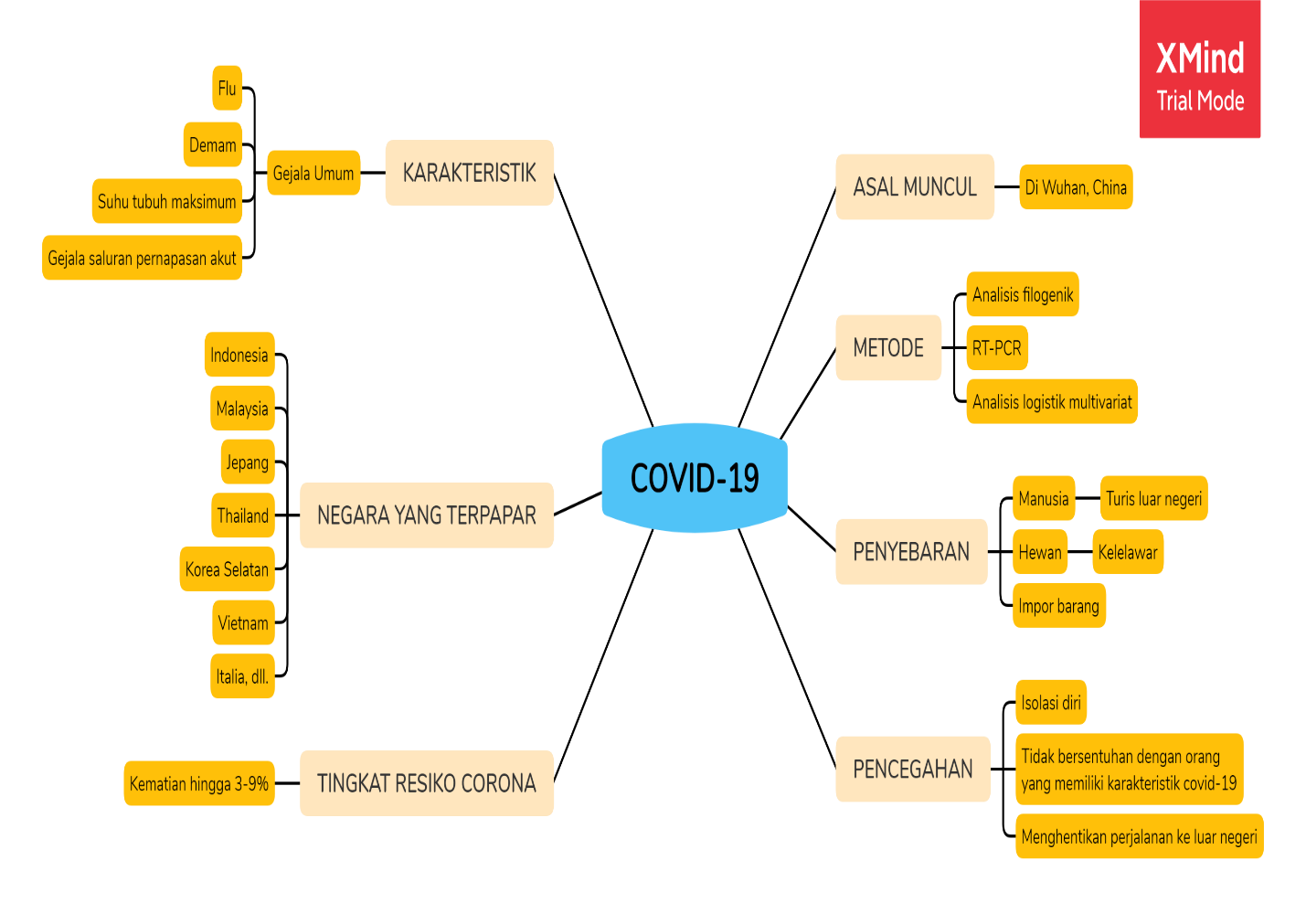
3. Anggraeni Tia Wulandari (11170940000017)

4. Siti Nuraeni (11170940000020)

5. Maghvirotul Azizah (11170940000022)

**Tugas : Metode Penelitian 6A**

**Narasi Review**



Sejak awal Desember 2019, penyakit coronavirus novel 2019 (COVID-19) telah menyebabkan epidemi pneumonia di Wuhan, provinsi Hubei, Cina [4] Virus ini mungkin berasal dari kelelawar setelah mutasi glikoprotein, seperti baru-baru ini menyarankan, memperoleh kemampuan untuk menginfeksi manusia[5]. Kami mengidentifikasi 13 negara atau wilayah di luar China daratan yang mungkin memiliki impor COVID-19 yang kurang terdeteksi dari Wuhan, seperti Thailand dan Indonesia. Selain itu, 16 negara memiliki perkiraan risiko wabah lokal melebihi 50%, termasuk empat di luar Asia[2]. Sampai hari ini (31 Januari 2020), 14.628 kasus dikonfirmasi telah dilaporkan, dengan 14451 kasus di Cina dan sisa kasus didistribusikan di antara negara-negara di setiap benua, tetapi terutama di Jepang, Thailand, Singapura, Vietnam, Indonesia, Korea Selatan, Hong Kong, Australia, dan Taiwan. Di Eropa, beberapa kasus pertama telah dilaporkan di Jerman dan Prancis dan yang terbaru di Italia dan Spanyol[5].

Dari 23 Januari perjalanan dari wuhan dihentikan oleh pemerintah cina dan di samping itu banyak negara telah menerapkan. Langkah-Langkah seperti skrining bandara pengujian pasien yang melaporkan gejala-gejala yang baru saja bepergian dari Tiongkok, karantina kedatangan dari Wuhan dan / atau China atau menghentikan perjalanan sama sekali [2]. Rekonstruksi filogenetik Bayesian menyarankan bahwa turis Tiongkok mungkin terinfeksi sebelum kedatangan mereka di Italia, karena rangkaian virus yang dicampur dengan isolat Cina dari epidemi yang berasal dari 19 Januari 2020 sebelum kedatangan mereka di Italia [5]. Sehingga beberapa jumlah kasus yang dilaporkan yang diimpor dari Wuhan dan data penerbangan untuk menghasilkan distribusi ketidakpastian untuk perkiraan jumlah kasus yang diimpor dari Wuhan ke setiap lokasi di luar daratan Cina[2].

Analisis filogenetik mengungkapkan bahwa virus corona termasuk dalam subgenus *Sarbecovirus* dari genus *Betacoronavirus.* WHO memberi nama *severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2)* yang menjadi penyebab penyakit COVID-19 [3]. Analisis logistik multivariat menunjukkan bahwa usia, riwayat merokok, suhu tubuh maksimum saat masuk, gagal napas, albumin dan protein C-reaktif adalah faktor risiko untuk perkembangan penyakit pneumonia COVID-19 [4]. Pengumpulan spesimen, etiologi, dan tes biokimia COVID-19 dideteksi oleh RT-PCR fluoresensi waktu-nyata dari sampel yang dikumpulkan dengan menggunakan penyeka nasofaring [4].

Demam adalah gejala awal yang paling umum dan suhu tubuh maksimum saat masuk secara signifikan lebih tinggi pada kelompok perkembangan daripada pada kelompok perbaikan / stabilisasi . Pneumonia COVID-19 ditandai oleh onset akut dan progres cepat. Oleh karena itu, penggunaan awal glukokortikoid dengan pengobatan antivirus dan antibakteri proaktif setelah evaluasi komprehensif dapat memblokir kaskade inflamasi yang disebabkan oleh infeksi virus yang parah dan mencegah peradangan akut. Kerusakan paru-paru yang disebabkan oleh infeksi semacam itu dapat lebih lanjut berkembang menjadi sindrom gangguan pernapasan akut [4].

Penyebaran epidemi 2019-nCoV lebih lanjut didukung oleh mobilitas manusia dan karantina yang diduga atau didiagnosis dengan kasus berguna untuk mencegah penularan lebih lanjut. Analisis filogenetik genom virus merupakan alat yang berguna untuk evaluasi dinamika transmisi dan tindakan pencegahan [5]. Kebijakan penangkapan dan isolasi memang membatasi wabah sindrom pernafasan akut yang parah (SARS) tetapi apakah pendekatan seperti itu akan berhasil dengan covid-19, yang telah menyebabkan epidemi nasional di negara terpadat di dunia [6]. Sindrom pernapasan akut berat (SARS), adalah penyakit baru yang muncul terkait dengan pneumonia berat. SARS memiliki dampak dramatis pada layanan perawatan. Kesehatan, ekonomi,dan kematian secara keseluruhan dengan tingkat perkiraan 9%. Stabilitas yang lebih baik dari coronavirus SARS di suhu rendah dan lingkungan kelembaban rendah dapat memfasilitasi transmisi di komunitas di daerah subtropis (seperti HongKong) selama musim semi dan di lingkungan ber-AC[1].

**Referensi :**

[1] Chan, K. H., Peiris, J. S. M., Lam, S. Y., Poon, L. L. M., Yuen, K. Y., & Seto, W. H. (2011). The effects of temperature and relative humidity on the viability of the SARS coronavirus. *Advances in Virology*, *2011*. <https://doi.org/10.1155/2011/734690>

[2] Sun, H., Dickens, B. L., Chen, M., Cook, A. R., & Clapham, H. E. (2020). Estimating number of global importations of COVID-19 from Wuhan, risk of transmission outside mainland China and COVID-19 introduction index between countries outside mainland China. *medRxiv*, 2020.02.17.20024075. <https://doi.org/10.1101/2020.02.17.20024075>

[3] Parwanto, M. (2020). Virus Corona (2019-nCoV) penyebab COVID-19. *Jurnal Biomedika Dan Kesehatan*, *3*(1), 1–2. <https://doi.org/10.18051/jbiomedkes.2020.v3.1-2>

[4] Liu, W., Tao, Z.-W., Lei, W., Ming-Li, Y., Kui, L., Ling, Z., Shuang, W., Yan, D., Jing, L., Liu, H.-G., Ming, Y., & Yi, H. (2020). Analysis of factors associated with disease outcomes in hospitalized patients with 2019 novel coronavirus disease. *Chinese Medical Journal*, 1. <https://doi.org/10.1097/cm9.0000000000000775>

[5] Giovanetti, M., Benvenuto, D., Angeletti, S., & Ciccozzi, M. (2020). The first two cases of 2019-nCoV in Italy: Where they come from? *Journal of Medical Virology*, *92*(5), 518–521. <https://doi.org/10.1002/jmv.25699>

[6] Watkins, J. (2020). Preventing a covid-19 pandemic. In *The BMJ* (Vol. 368). <https://doi.org/10.1136/bmj.m810>

**Dataset dan Metadata**

**1. Corona-Virus-Time-Series-Dataset**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| UID | iso2 | iso3 | code3 | FIPS | Admin 2 | Province State | Country Region | Lat | Long\_ | Combined Key | Population |
| 4 | AF | AFG | 4 |  |  |  | Afghanistan | 33.93911 | 67.70995 | Afghanistan | 38928341 |
| 8 | AL | ALB | 8 |  |  |  | Albania | 41.1533 | 20.1683 | Albania | 2877800 |
| 12 | DZ | DZA | 12 |  |  |  | Algeria | 28.0339 | 1.6596 | Algeria | 43851043 |
| 20 | AD | AND | 20 |  |  |  | Andorra | 42.5063 | 1.5218 | Andorra | 77265 |
| 24 | AO | AGO | 24 |  |  |  | Angola | -11.2027 | 17.8739 | Angola | 32866268 |
| 28 | AG | ATG | 28 |  |  |  | Antigua and Barbuda | 17.0608 | -61.7964 | Antigua and Barbuda | 97928 |
| 32 | AR | ARG | 32 |  |  |  | Argentina | -38.4161 | -63.6167 | Argentina | 45195777 |
| 51 | AM | ARM | 51 |  |  |  | Armenia | 40.0691 | 45.0382 | Armenia | 2963234 |
| 40 | AT | AUT | 40 |  |  |  | Austria | 47.5162 | 14.5501 | Austria | 9006400 |
| 31 | AZ | AZE | 31 |  |  |  | Azerbaijan | 40.1431 | 47.5769 | Azerbaijan | 10139175 |
| 44 | BS | BHS | 44 |  |  |  | Bahamas | 25.02589 | -78.0359 | Bahamas | 393248 |
| 48 | BH | BHR | 48 |  |  |  | Bahrain | 26.0275 | 50.55 | Bahrain | 1701583 |
| 50 | BD | BGD | 50 |  |  |  | Bangladesh | 23.685 | 90.3563 | Bangladesh | 164689383 |
| 52 | BB | BRB | 52 |  |  |  | Barbados | 13.1939 | -59.5432 | Barbados | 287371 |
| 112 | BY | BLR | 112 |  |  |  | Belarus | 53.7098 | 27.9534 | Belarus | 9449321 |
| 56 | BE | BEL | 56 |  |  |  | Belgium | 50.8333 | 4.469936 | Belgium | 11589616 |
| 84 | BZ | BLZ | 84 |  |  |  | Belize | 17.1899 | -88.4976 | Belize | 397621 |
| 204 | BJ | BEN | 204 |  |  |  | Benin | 9.3077 | 2.3158 | Benin | 12123198 |
| 64 | BT | BTN | 64 |  |  |  | Bhutan | 27.5142 | 90.4336 | Bhutan | 771612 |

**Novel Coronavirus (COVID-19) Cases, provided by JHU CSSE**

<https://www.kaggle.com/anjanatiha/corona-virus-time-series-dataset>

This is the data repository for the 2019 Novel Coronavirus Visual Dashboard operated by the Johns Hopkins University Center for Systems Science and Engineering (JHU CSSE). Also, Supported by ESRI Living Atlas Team and the Johns Hopkins University Applied Physics Lab (JHU APL).

Visual Dashboard (desktop) :  
<https://www.arcgis.com/apps/opsdashboard/index.html#/bda7594740fd40299423467b48e9ecf6>

Visual Dashboard (mobile):  
<http://www.arcgis.com/apps/opsdashboard/index.html#/85320e2ea5424dfaaa75ae62e5c06e61>

Lancet Article:  
An interactive web-based dashboard to track COVID-19 in real time

Provided by Johns Hopkins University Center for Systems Science and Engineering (JHU CSSE):  
<https://systems.jhu.edu/>

Data Sources:

World Health Organization (WHO): <https://www.who.int/>  
DXY.cn. Pneumonia. 2020. <http://3g.dxy.cn/newh5/view/pneumonia>.  
BNO News: <https://bnonews.com/index.php/2020/02/the-latest-coronavirus-cases/>  
National Health Commission of the People’s Republic of China (NHC):  
<http://www.nhc.gov.cn/xcs/yqtb/list_gzbd.shtml>  
China CDC (CCDC): <http://weekly.chinacdc.cn/news/TrackingtheEpidemic.htm>  
Hong Kong Department of Health: <https://www.chp.gov.hk/en/features/102465.html>  
Macau Government: <https://www.ssm.gov.mo/portal/>  
Taiwan CDC: <https://sites.google.com/cdc.gov.tw/2019ncov/taiwan?authuser=0>  
US CDC: <https://www.cdc.gov/coronavirus/2019-ncov/index.html>  
Government of Canada: <https://www.canada.ca/en/public-health/services/diseases/coronavirus.html>  
Australia Government Department of Health: <https://www.health.gov.au/news/coronavirus-update-at-a-glance>  
European Centre for Disease Prevention and Control (ECDC): <https://www.ecdc.europa.eu/en/geographical-distribution-2019-ncov-cases>  
Ministry of Health Singapore (MOH): <https://www.moh.gov.sg/covid-19>  
Italy Ministry of Health: <http://www.salute.gov.it/nuovocoronavirus>

Additional Information about the Visual Dashboard:  
<https://systems.jhu.edu/research/public-health/ncov/>

|  |  |  |
| --- | --- | --- |
| **Metadata** | | |
| Usage information | License | <https://creativecommons.org/licenses/by-nc-sa/4.0/> |
| Maintainers | Owner | <https://www.kaggle.com/anjanatiha> |
| Updates | Expected Update Frequency | Daily |
|  | Last Updated | 2020-04-13 |
|  | Date Created | 2020-02-25 |
|  | Current version | Version 33 |

**2. Novel-Corona-Virus-2019-Dataset**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| SNo | Observation Date | Province / State | Country / Region | Last Update | Confirmed | Deaths | Recovered |
| 1 | 1/22/2020 | Anhui | Mainland China | 1/22/2020 17:00 | 1 | 0 | 0 |
| 2 | 1/22/2020 | Beijing | Mainland China | 1/22/2020 17:00 | 14 | 0 | 0 |
| 3 | 1/22/2020 | Chongqing | Mainland China | 1/22/2020 17:00 | 6 | 0 | 0 |
| 4 | 1/22/2020 | Fujian | Mainland China | 1/22/2020 17:00 | 1 | 0 | 0 |
| 5 | 1/22/2020 | Gansu | Mainland China | 1/22/2020 17:00 | 0 | 0 | 0 |
| 6 | 1/22/2020 | Guangdong | Mainland China | 1/22/2020 17:00 | 26 | 0 | 0 |
| 7 | 1/22/2020 | Guangxi | Mainland China | 1/22/2020 17:00 | 2 | 0 | 0 |
| 8 | 1/22/2020 | Guizhou | Mainland China | 1/22/2020 17:00 | 1 | 0 | 0 |
| 9 | 1/22/2020 | Hainan | Mainland China | 1/22/2020 17:00 | 4 | 0 | 0 |
| 10 | 1/22/2020 | Hebei | Mainland China | 1/22/2020 17:00 | 1 | 0 | 0 |
| 11 | 1/22/2020 | Heilongjiang | Mainland China | 1/22/2020 17:00 | 0 | 0 | 0 |
| 12 | 1/22/2020 | Henan | Mainland China | 1/22/2020 17:00 | 5 | 0 | 0 |
| 13 | 1/22/2020 | Hong Kong | Hong Kong | 1/22/2020 17:00 | 0 | 0 | 0 |
| 14 | 1/22/2020 | Hubei | Mainland China | 1/22/2020 17:00 | 444 | 17 | 28 |
| 15 | 1/22/2020 | Hunan | Mainland China | 1/22/2020 17:00 | 4 | 0 | 0 |
| 16 | 1/22/2020 | Inner Mongolia | Mainland China | 1/22/2020 17:00 | 0 | 0 | 0 |
| 17 | 1/22/2020 | Jiangsu | Mainland China | 1/22/2020 17:00 | 1 | 0 | 0 |
| 18 | 1/22/2020 | Jiangxi | Mainland China | 1/22/2020 17:00 | 2 | 0 | 0 |
| 19 | 1/22/2020 | Jilin | Mainland China | 1/22/2020 17:00 | 0 | 0 | 0 |
| 20 | 1/22/2020 | Liaoning | Mainland China | 1/22/2020 17:00 | 2 | 0 | 0 |

**Novel Corona Virus 2019 Dataset**

Day level information on covid-19 affected cases

<https://www.kaggle.com/sudalairajkumar/novel-corona-virus-2019-dataset>

### Context

From [World Health Organization](https://www.who.int/emergencies/diseases/novel-coronavirus-2019) - On 31 December 2019, WHO was alerted to several cases of pneumonia in Wuhan City, Hubei Province of China. The virus did not match any other known virus. This raised concern because when a virus is new, we do not know how it affects people.

So daily level information on the affected people can give some interesting insights when it is made available to the broader data science community.

[Johns Hopkins University has made an excellent dashboard](https://gisanddata.maps.arcgis.com/apps/opsdashboard/index.html#/bda7594740fd40299423467b48e9ecf6) using the affected cases data. Data is extracted from the google sheets associated and made available here.

Edited:   
Now data is available as csv files in the [Johns Hopkins Github repository](https://github.com/CSSEGISandData/COVID-19). Please refer to the github repository for the [Terms of Use](https://github.com/CSSEGISandData/COVID-19/blob/master/README.md) details. Uploading it here for using it in Kaggle kernels and getting insights from the broader DS community.

### Content

2019 Novel Coronavirus (2019-nCoV) is a virus (more specifically, a coronavirus) identified as the cause of an outbreak of respiratory illness first detected in Wuhan, China. Early on, many of the patients in the outbreak in Wuhan, China reportedly had some link to a large seafood and animal market, suggesting animal-to-person spread. However, a growing number of patients reportedly have not had exposure to animal markets, indicating person-to-person spread is occurring. At this time, it’s unclear how easily or sustainably this virus is spreading between people - [CDC](https://www.cdc.gov/coronavirus/2019-ncov/about/index.html)

This dataset has daily level information on the number of affected cases, deaths and recovery from 2019 novel coronavirus. Please note that this is a time series data and so the number of cases on any given day is the cumulative number.

The data is available from 22 Jan, 2020.

### Column Description

Main file in this dataset is covid\_19\_data.csv and the detailed descriptions are below.

covid\_19\_data.csv

* Sno - Serial number
* ObservationDate - Date of the observation in MM/DD/YYYY
* Province/State - Province or state of the observation (Could be empty when missing)
* Country/Region - Country of observation
* Last Update - Time in UTC at which the row is updated for the given province or country. (Not standardised and so please clean before using it)
* Confirmed - Cumulative number of confirmed cases till that date
* Deaths - Cumulative number of of deaths till that date
* Recovered - Cumulative number of recovered cases till that date

2019\_ncov\_data.csv

This is older file and is not being updated now. Please use the covid\_19\_data.csv file

**Added two new files with individual level information**

COVID\_open\_line\_list\_data.csv  
This file is obtained from [this link](https://docs.google.com/spreadsheets/d/1itaohdPiAeniCXNlntNztZ_oRvjh0HsGuJXUJWET008/edit#gid=0)

COVID19\_line\_list\_data.csv  
This files is obtained from [this link](https://docs.google.com/spreadsheets/d/e/2PACX-1vQU0SIALScXx8VXDX7yKNKWWPKE1YjFlWc6VTEVSN45CklWWf-uWmprQIyLtoPDA18tX9cFDr-aQ9S6/pubhtml)

**Country level datasets**  
If you are interested in knowing country level data, please refer to the following Kaggle datasets:  
**India** - <https://www.kaggle.com/sudalairajkumar/covid19-in-india>  
**South Korea** - <https://www.kaggle.com/kimjihoo/coronavirusdataset>  
**Italy** - <https://www.kaggle.com/sudalairajkumar/covid19-in-italy>  
**Brazil** - <https://www.kaggle.com/unanimad/corona-virus-brazil>  
**USA** - <https://www.kaggle.com/sudalairajkumar/covid19-in-usa>  
**Switzerland** - <https://www.kaggle.com/daenuprobst/covid19-cases-switzerland>  
**Indonesia** - <https://www.kaggle.com/ardisragen/indonesia-coronavirus-cases>

### Acknowledgements

* [Johns Hopkins University](https://github.com/CSSEGISandData/COVID-19) for making the data available for educational and academic research purposes
* MoBS lab - <https://www.mobs-lab.org/2019ncov.html>
* World Health Organization (WHO): <https://www.who.int/>
* DXY.cn. Pneumonia. 2020. <http://3g.dxy.cn/newh5/view/pneumonia>.
* BNO News: <https://bnonews.com/index.php/2020/02/the-latest-coronavirus-cases/>
* National Health Commission of the People’s Republic of China (NHC):  
  <http://www.nhc.gov.cn/xcs/yqtb/list_gzbd.shtml>
* China CDC (CCDC): <http://weekly.chinacdc.cn/news/TrackingtheEpidemic.htm>
* Hong Kong Department of Health: <https://www.chp.gov.hk/en/features/102465.html>
* Macau Government: <https://www.ssm.gov.mo/portal/>
* Taiwan CDC: <https://sites.google.com/cdc.gov.tw/2019ncov/taiwan?authuser=0>
* US CDC: <https://www.cdc.gov/coronavirus/2019-ncov/index.html>
* Government of Canada: <https://www.canada.ca/en/public-health/services/diseases/coronavirus.html>
* Australia Government Department of Health: <https://www.health.gov.au/news/coronavirus-update-at-a-glance>
* European Centre for Disease Prevention and Control (ECDC): <https://www.ecdc.europa.eu/en/geographical-distribution-2019-ncov-cases>
* Ministry of Health Singapore (MOH): <https://www.moh.gov.sg/covid-19>
* Italy Ministry of Health: <http://www.salute.gov.it/nuovocoronavirus>

Picture courtesy : [Johns Hopkins University dashboard](https://gisanddata.maps.arcgis.com/apps/opsdashboard/index.html#/bda7594740fd40299423467b48e9ecf6)

### Inspiration

Some insights could be

1. Changes in number of affected cases over time
2. Change in cases over time at country level
3. Latest number of affected cases

|  |  |  |
| --- | --- | --- |
| **Meta data** | | |
| Usage Information | License | Data files © Original Authors |
| Provenance | Sources | <https://gisanddata.maps.arcgis.com/apps/opsdashboard/index.html#bda7594740fd40299423467b48e9ecf6> |
|  | Collection methodology | Thanks to John Hopkins University. This dataset is a modified version of the below data <https://docs.google.com/spreadsheets/d/1yZv9w9zRKwrGTaR-YzmAqMefw4wMlaXocejdxZaTs6w/htmlview?usp=sharing&sle=true> |
| Maintainers | Datasets owner | https://www.kaggle.com/sudalairajkumar |
| Updates | Expected update frequency | Daily |
|  | Last updated | 2020-04-08 |
|  | Date created | 2020-01-30 |
|  | Current version | Version 60 |