Covid-19 in Indonesia.

A comparison of Logistic models and Exponential models applied to the Covid-19 case in Indonesia.

Today world facing one common enemy as WHO announced a new pandemic of Covid-19 Virus. The virus first begins in the city of Wuhan in Hubei Province China. Then, It spreads across countries around the globe. Indonesia’s first case was reported on the 2nd of March and start to grow rapidly until today.

I will try to present simple mathematical analysis and two models to give a comparison for a better understanding of the development of cases in Indonesia.

**Input Data**

Since the initial case announced in early March, Indonesia’s government representative announced the number of cases daily. I obtain the data from the website <https://kawalcovid19.id/>. I get data for outside Indonesia from <https://github.com/CSSEGISandData/COVID-19>.

The goal is to create models of day by day total number of confirmed cases in time series. The model has parameters and estimated by curve fitting.

**Tools**

Computational is using Python using library pandas, numpy, datetime, sklearn, scipy, matplotlib, and sklearn.

**Logistic Model**

**Study case from Hubei Lockdown.**

What can we learn from Hubei case? Here I will use same technique as above to plot the logistic model to get some insight.

#GAMBAR WUHAN DISINI

The picture above is number of cases in Hubei Province. I applied logistic model and it shows like this.

Here are the important stuffs. It took X days to reach inflection point.