Graph Analytics for Python Developers

Assignment 4

Version 1.0

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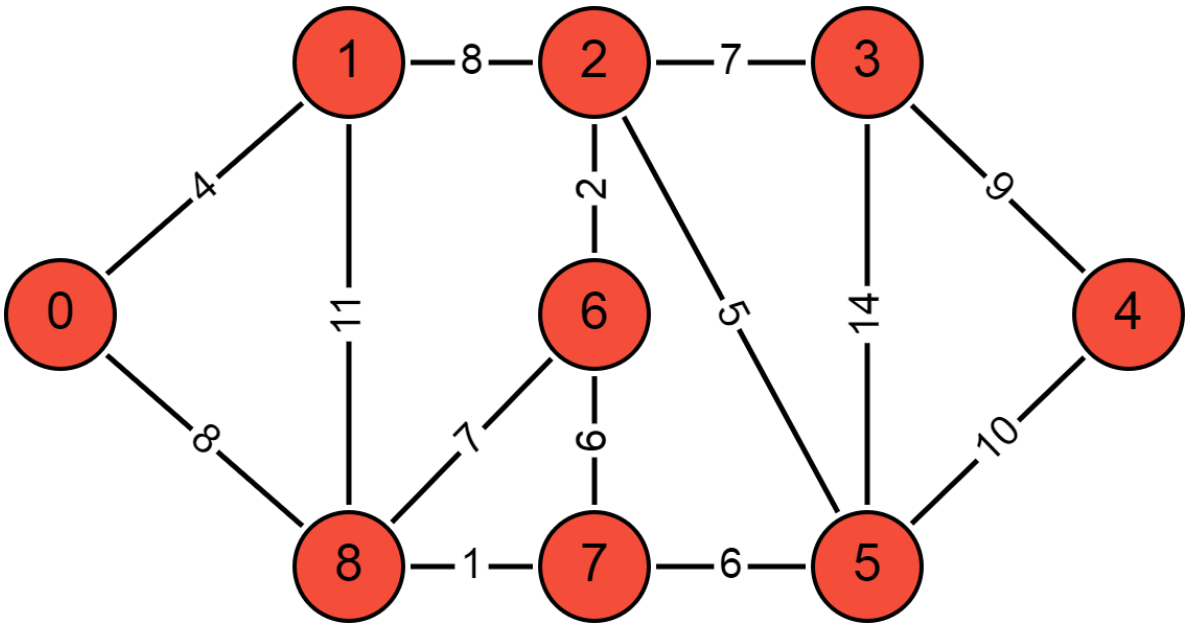
The goal of this assignment is to understand the graph algorithms we discussed during the fourth lecture. The task will be performing some of the algorithms on the graph below:



You can try to generate the graph by yourself, or you can find the graph in adjacency list form here. The format of the file is the same as the one used for Dijkstra's algorithm in the third lecture.

The requirements are:

- Color the graph using a NetworkX **coloring algorithm**. Visualize the colored graph and add the image to the code on GitHub.
- Run a **community detection algorithm** of your choice on the graph. Visualize the detected communities and add the image to the code on GitHub.

You can find a list of colors for the coloring algorithm below but you can also use your own.

```
colors = [
    "blue", "gray", "pink", "red", "orange", "purple", "brown",
    "yellow", "green", "snow", "wheat", "lime", "crimson", "maroon",
    "dodgerblue", "olive", "gold", "hotpink", "palegreen",
    "peachpuff", "steelblue", "royalblue", "slategray", "sandybrown",
    "lawngreen", "lightgray", "sienna", "khaki", "mistyrose"]
```

Reference Guide links

Graph coloring	NetworkX Reference Guide Link
Community detection	NetworkX Reference Guide Link

How to submit the assignment?

Upload your code to a GitHub repository and send us the link to ivan.despot@memgraph.com.

Because all assignments will be submitted using GitHub, we recommend creating one repository where you will upload all of the assignments.