## Motivation

Data management is one of the biggest challenges of those days. The development of different areas of technology , platforms and users make the amount of data increases dramatically and evolving to be more interlinked and that makes retrieving data more difficult and complex even some tasks became so difficult on Relational databases because relational database is so symmetric we need to define everything in the query for example X is a person and we want to get all the people that he considers as his friends or we want to retrieve all persons who considers X as their friend that kind of relations is so expensive as we need to look-up in all the rows to get them and if we go more deep in queries it will become more complex and will need more computations beside time taken to get all kind of relations between the two nodes. Here it comes Graph database to solve our problem as instead of storing data in tables contains rows and columns we will just use nodes and relationships so querying database will be just tracing graph and that will make any complex query direct to find and we may also notice important relations that we cannot get easily. Graph database is schema free and index free as each node points to its next node with a relationship between them. Query will not depend anymore on the size of the graph as we do not have to look-up for every relation as in Relational database. The only problem with graph database as the data increase relations most probably will also increase that makes graph looks more complex and difficult to analyze even on programmers, so we need a neat way to make users understand the results. Our task now is how to visualize graph database queries result in a way so the user can easily analyze the part he wants from data instead of just representing the graphs resulted from the queries. We will use python because it has a lot of data visualizing libraries and we will choose one of these libraries to use. The first Data visualizing library and the oldest one is Matplotlib. Matplotlib is the basis of static data visualization in python and what I mean by static that user cannot interact with the resulted plot he cannot zoom in, zoom out , select certain part to analyze or download it ..etc. Lots of data visualization tools are built on the top of Matplotlib. Its is a good choice if you want to plot simple graph but it will be complex to use It for non-basic plots like pair plots here comes Seaborn. Seaborn is built on top of Matplotlib it integrates very with Pandas Data frame. Pandas open source library for python it is used as a data analyzing tool and data structures Numby is a decency of pandas. Numby is it is a high performance multi-dimensional array library in python used for numerical analysis it is like array but less complex and easier beside it takes less space than array. Seaborn contains lots of built-in complex plots like cluster map. So its easier to use if you need it in static complex plot. The only problem now that both tools are static user cannot interact with the result what if the resulted graph contains lots things and the user need just to view certain part or what if he wants to download the result ...etc . Here comes Bokeh. Bokeh is web focused interactive data visualization library it integrates also with Pandas by using ColumnDataSource class. There are built-in tools that can be included on widget box attached to the plot makes the user interact easily with the graph zoom-in, zoom-out, selecting ...etc. Bokeh resulted plots are pretty and interactive but a lot of manual work is required and you need most of the time to look for commands and the documentation is good but it does have enough examples. Here comes Plotly. Plotly is also interactive data visualizing library it uses JavaScript behind the scenes. In order to install Plotly you also need to install cufflinks which is used to connect Plotly with Pandas. Plotly `s documentation is direct and for every type of chart there is more than one example and also the syntax is more intuitive than Bokeh so plots are quicker to make u will need also some manual work but less than bokeh and easier. On top of Plotly There is Dash. Dash is a productive python framework for building web application. It’s for building data visualization apps and highly custom user interface and fully featured apps with just using python no html, css .. . interactive visualisation in the web browser with just python. Dash apps are composed of two parts. The first part is the "layout" of the app which is How the application looks like. The second part describes the interactivity of the application. Dash is Plotly without having to learn javascript, html and other web technologies. With Dash you don't make visualizations, you build an interface to display Plotly's visualizations.