## ****Database Documentation****

### ****Database Chosen: PostgreSQL****

We have made up our minds to utilize PostgreSQL for our project as a database management system (DBMS). PostgreSQL came to the attention of everyone in the world of databases when it became widely open source. The object Relationship Database is domestic and comes hosted with lots of functions capabilities and adaptability. It caters for the present applications since it provides support for different kinds of data types. The main reason PostgreSQL was selected has to do with ensuring efficient management of big data as well as complex queries while observing the principles of ACID compliance. This guarantees for the big scale operations of reliable services that the sector is dependent upon, it is possible to clean the data.

Another plus of PostgreSQL is that complex data types can be utilized such as arrays and JSON and even the user can define their data types. This makes it possible to deal with applications that go beyond the basic and traditional structure of data. Data processing is fast and in large volumes. With Cloud SQL, scaling is easy for PostgreSQL meaning when the lid of our project is raised to another level more users and bigger data capacity can be catered for. There is flexibility and thus our structured database can grow as per the needs of the application vertically operating system and application updates, or horizontally distribution and partitioning of the application servers.

Another important aspect to consider regarding the significant popularity of PostgreSQL is the fact that it is extensible, which means that one can write new stored procedures, introduce new types or new languages. This, in turn, allows us to customize the database based on the extreme needs of our business in such a way that we can fully integrate the database and application logic and maximize productivity. Furthermore, owing to its cross-platform accessibility, development can be carried out without interruption due to the application of any other operating system since PostgreSQL can run on popular OS like Linux, Windows and even macOS.

PostgreSQL's evaluation capabilities, detailed user manuals, and especially the presence of user forums significantly influenced the choice. The earlier version of the active database development provides ample opportunities for, what is called, debugging, and customization. Various proactive community support such as security updates and performance improvements help to make PostgreSQL a reliable option for our company.

All in all, PostgreSQL is more advanced, flexible and can work with more complicated queries than the other database engines we considered. We also see that its cross-platform support and ability to extend it makes it suitable for our organization, since it will ensure that we are able to deploy a dependable dbms together with a highly scalable application.