Problem Statement:

Recent Covid-19 Pandemic has raised alarms over one of the most overlooked area to focus: Healthcare Management.

While healthcare management has various use cases for using data science, patient length of stay is one critical parameter to observe

and predict if one wants to improve the efficiency of the healthcare management in a hospital.

This parameter helps hospitals to identify patients of high LOS risk (patients who will stay longer) at the time of admission.

Once identified, patients with high LOS risk can have their treatment plan optimized to miminize LOS and lower the chance of staff/visitor infection.

Also, prior knowledge of LOS can aid in logistics such as room and bed allocation planning.

**Project Description**

The integration of data science and big data in the healthcare industry is revolutionizing the way patients are treated in hospitals. We can predict and tackle diseases early on with electronic records and patient data. Machines learn from this data, finding patterns that help doctors make better decisions. This means more personalized care and catching problems sooner. It also allows hospitals to plan better and use resources wisely. Using data in this way makes healthcare smarter, saves money, and ensures patients receive top-notch care. Simply put, it's like having a tech-savvy assistant that makes healthcare work better for everyone.

One compelling machine learning project in the healthcare domain involves using machine learning to predict patient length of stay, a critical aspect of healthcare resource planning. By leveraging ML algorithms, this project aims to forecast how long a patient will likely stay in the hospital.

**Business Objective of Snowflake End-to-end Project with Source Code**

Healthcare analytics is the process of using data and analytical methods to improve the delivery of healthcare services and patient outcomes. A critical area of healthcare analytics is the analysis of patient length of stay (LOS), which refers to the time a patient spends in a healthcare facility. Length of stay is a critical metric in healthcare, as it can impact patient outcomes, healthcare costs, and hospital capacity. By analyzing patient LOS data, healthcare providers can identify opportunities to improve the delivery of care and reduce costs. In addition to improving patient outcomes, the analysis of patient LOS can also help healthcare providers to allocate resources wisely. For example, by identifying patients at risk of extended LOS, providers can take proactive steps to ensure they receive the care they need in a timely manner. The analysis of patient length of stay is a valuable area of healthcare analytics that can help providers improve outcomes and reduce costs. By leveraging data and advanced analytical techniques, healthcare providers can gain a deeper understanding of patient needs and identify opportunities to improve the delivery of care.