Homework Assignment 1

IT 532, Fall 2018

Due Date – Sep 20

1. Describe the roles and purposes of data warehouses and data marts in an organization

Answer: The data marts are the integration of data for analysis, the data warehouses are the collection of data marts. Their role in an organization can be seen as the repository to store analysis data. Why do we need to separate data marts/warehouses from traditional OLAP, the reason is that this data has some special attributes, including time variant, subject oriented, integrated and nonvolatile, the purpose of data marts/warehouse is to separate this data from transactional data for furthur decision making,such as OLAP,data mining,etc.

1. How could Google use a data warehouse to improve its business operations?

Answer : Google is different than other traditional industry, other companies can only gather data internally and integrate them to DW via ETL, it also means the accuracy and scope will be limited in data mining and OLAP phase. On the other hand, Google can make use lots of data externally, through the Google search, Google cloud service (GWE), Google can use data warehouse contain lots of diverse data,such as market trends,industry trends and competitor information. Then, they can analyze business through differnent industries and competitors.

1. Identify a data mart that Google’s marketing and sales department might use to track and analyze its AdWords revenue

Answer : They will design a fact table including measures such as annual profit, annual cost in AdWords service,annual revenue, then, they also will design several dimension tables, including time,industry,query words,searcher’s geographical information,etc.

1. Explain the importance of high-quality information for Google

Answer : High-quality information comes from high-quality data, Google needs high-quality information to accomplish several objectives. Firstly, in traditional operation and business support point of view, Google’s core business and competency is content search in internet, Google must expolits high-quality information to determine their research accuracy and how to enhance it. Secondly, from the enterprise point of view, Google needs to use high-quality information to improve their decision quality in CRM(majority of their revenue comes from advertisers),ERP(like other companies,Google also need to concern about sales and marketing,human resource,R&D,finance) and SCM (even they doesn’t have actual products, there are still lots of stakeholders involve in Google’s business). Finanlly and the most importantly, Google need to use high-quality to decide the future stradegy, as a company famous for innovation and high technology,it’s mandatory for Google always kow the trends and stands in the peak, no matter E commerce, data management , BI , AI or cloud computing, high quality information for them is very important.