

Databases and Information Systems

Lab Assignment 1

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Part A

Q1) a) **Michael Stonebraker:**

He is a Computer Scientist specializing in the research of databases. He taught computer science in University of California, Berkeley for a period of 29 years. His main works include Postgres, Ingres etc., Currently, he is a professor at MIT mentoring number of research projects. Not only in the academics side, he is also a founder of many companies such as Illustra, Vertica etc. He won ACM Turing award in 2014 and IEEE John von Neumann Medal in 2005 as a token of appreciation for his contributions made in the computer science department. Coming from a normal family, he has achieved so much. Many students till date get inspired by him. We are fortunate to have such a scientist born in this era.

Source Link: Michael Stonebraker

b) **Database Application:**

This is a computer program whose main purpose is to retrieve data from the database. Using this we can also make changes to the database by adding, modifying and deleting the data. Some of the known database applications are Amazon, Ebay, Facebook etc., This has many advantages, such as it can run on devices of different types and sizes with different operating systems.

Source Link: Database Application

Q2) 10 large digital applications(such as Google pay, Amazon) that have a huge database size and large number of transactions are:

- Flipkart
- Myntra
- Snapdeal
- Zomato
- Bookmyshow
- Makemytrip
- Economic Times
- Moneycontrol
- Paytm
- Dream 11

Q3) **OLTP:**

Online transaction processing is a system which stores and maintains the data of different transactions that happen in a database.

OLAP:

Online analytical processing helps to analyze the data using complex queries. Here, the main focus is on the response time of the queries.

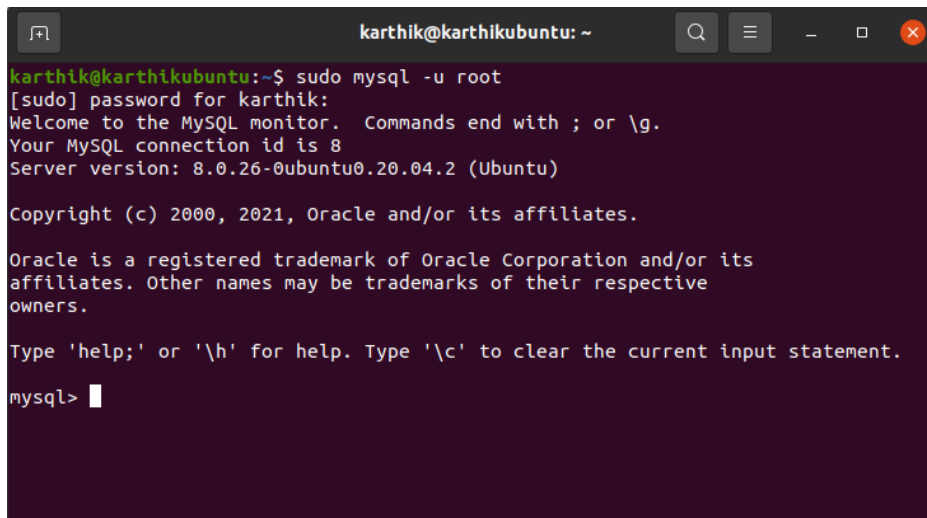
| OLTP | OLAP |
|---|--|
| Uses simple queries | Uses complex queries |
| Very fast | Depends on the amount of data involved as queries |
| This is the source of data | Data is taken from various OLTP Databases |
| Increases productivity of end users | Increases productivity of business managers, data analysts |
| Need to backup regularly to avoid data loss | Data can be recovered easily from OLTP so need of backup |

Table 1: Differences b/w OLAP, OLTP

Source Link: Michael Stonebraker

Part B

I have successfully installed mysql in my PC. Please find the below image for reference.

A terminal window titled 'karthik@karthikubuntu: ~' with standard window controls. The terminal shows the command 'sudo mysql -u root' being executed. It prompts for a password, then displays the MySQL welcome message, connection ID (8), and server version (8.0.26-0ubuntu0.20.04.2). It also shows copyright and trademark information, and a help message. The prompt 'mysql>' is visible at the bottom.

```
karthik@karthikubuntu:~$ sudo mysql -u root
[sudo] password for karthik:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 8
Server version: 8.0.26-0ubuntu0.20.04.2 (Ubuntu)

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owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql>
```