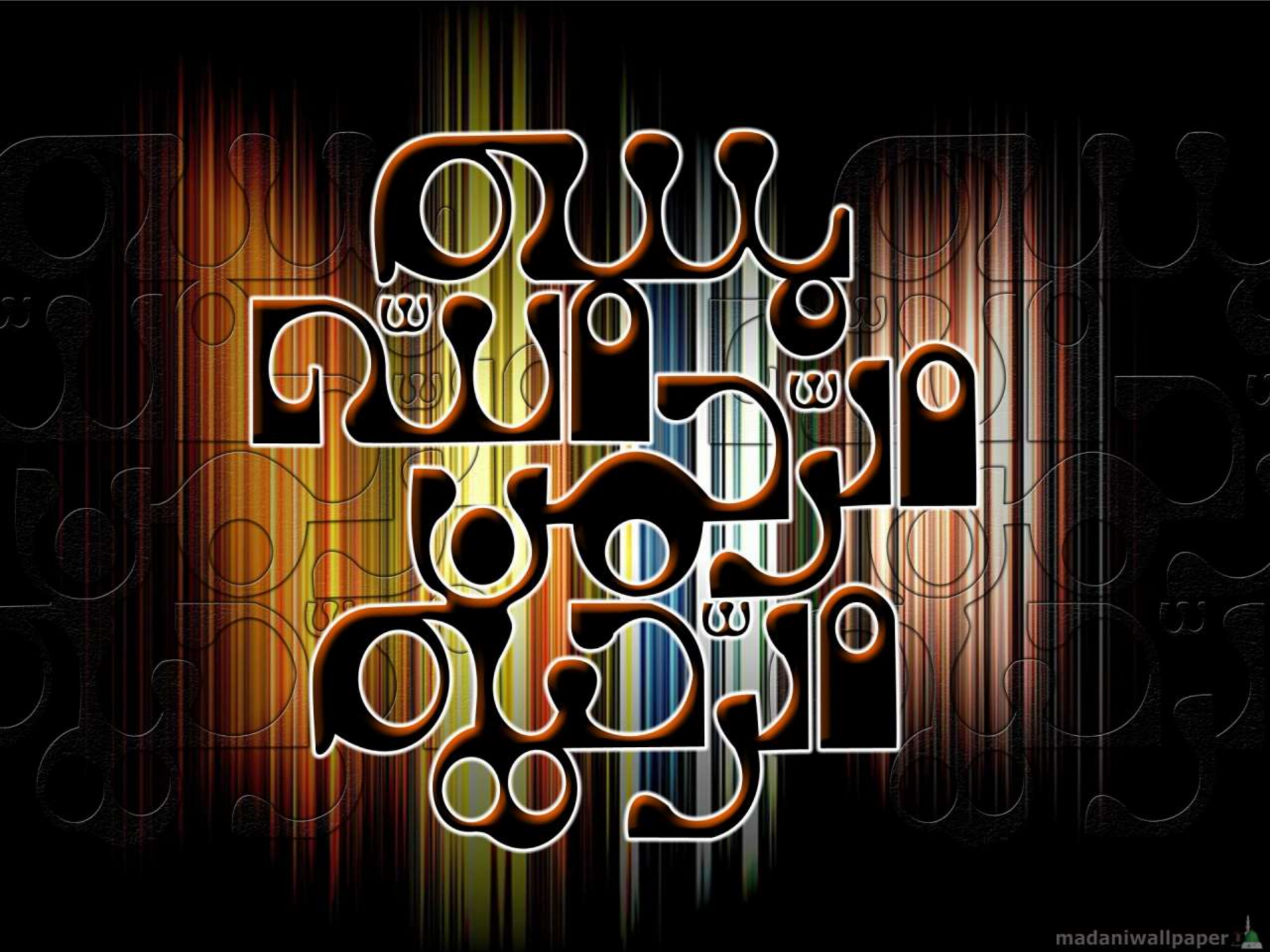

"OLAP vs OLTP"

By: Ahsan Irfan Shaikh

“AGENDA”

Define Olap (data ware house)?

Define Oltp?

Comparison between data ware house and OLTP ?

Defining the OLAP(data warehouse):

- A data warehouse is a repository (collection of resources that can be accessed to retrieve information)
- – *OLAP (On-line Analytical Processing)* is characterized by relatively low volume of transactions. Queries are often very complex and involve aggregations..
- OLAP applications are widely used by Data Mining techniques.
- In OLAP database there is aggregated, historical data, stored in multi-dimensional schemas (usually star schema).

Defining the OLTP:

- *OLTP (On-line Transaction Processing)* is characterized by a large number of short on-line transactions (INSERT, UPDATE, DELETE).
- These system have detailed day to day transaction data which keeps changing, on everyday basis.
- In OLTP database there is detailed and current data, and schema used to store transactional databases is the entity model (usually 3NF).

Comparison between OLAP AND OLTP:

- Both are related to information databases, which provide the means and support for these two types of functioning.
- Each one of the methods creates a different branch on **data management system**, with it's own ideas and processes, but they complement themselves.
- To **analyze and compare them** we've built this resource!

Comparison between OLAP AND OLTP:

- Source of data:

OLTP: Operational data; OLTPs are the original source of the data.
OLAP: Consolidation data; OLAP data comes from the various OLTP Database.

- Purpose of data:

OLTP: To control and run fundamental business tasks
OLAP: To help with planning, problem solving, and decision support

Comparison between OLAP AND OLTP:

- **What the data**:

OLTP: Reveals a snapshot of ongoing business processes.
OLAP: Multi-dimensional views of various kinds of business activities.

- **Inserts and Updates:**

OLTP: Short and fast inserts and updates initiated by end users.
OLAP: Periodic long-running batch jobs refresh the data.

Comparison between OLAP AND OLTP:

- **Queries**:

OLTP: Relatively standardized and simple queries Returning relatively few records.

OLAP: Often complex queries involving aggregations

- **Processing Speed:**

OLTP: Typically very fast.

OLAP: Depends on the amount of data involved; batch data refreshes and complex queries may take many hours.

Comparison between OLAP AND OLTP:

- **Space Requirements:**
  - OLTP: Can be relatively small if historical data is archived.

OLAP: Larger due to the existence of aggregation structures and history data.

- **Database Design :**

OLTP: Highly normalized with many tables.
OLAP: Typically de-normalized with fewer tables.

Comparison between OLAP AND OLTP:

Backup and Recovery

- **OLTP** systems is absolutely critical, it needs a **complex backup system**.
- **Full backups** of the data combined with incremental backups are required.
- **OLAP** only needs a backup **from time to time**
- since it's data is not critical and doesn't keep the system running.

It's quit Simple comparison:

OLTP	Data Warehouse
Application Oriented	Subject Oriented
Used to run business	Used to analyze business
Detailed data	Summarized and refined
Current up to date	History to Current(Snapshot data)
Repetitive access	Ad-hoc access
Clerical User	Knowledge User (Manager)
Performance Sensitive	Performance relaxed
Few Records accessed at a time (tens)	Large volumes accessed at a time(millions)
Read/Update Access	Mostly Read (Batch Update)
No data redundancy	Redundancy present
Database Size 100MB -100 GB	Database Size 100 GB - few terabytes
Thousands of users	Hundreds of users

THANKYOU!

THE END… ☺

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