Data Wasehousing for
Business Intelligence
Specialization
— by Univ. of Colorada

Skills:-
Oracle, MySQL
Micso-Strategy
ERD Diagrams using ER Assistant
Data modeling

Course 1:
Database Management Essentials

Objectives :-

- Create entity relationship diagrams (ERDs) to represent business requirements.
- Convert an ERD to a table design
- Analyze table designs for unwanted Redundancy.
- Reflect on guidelines & goals for query formulation, redundancy elimination & data modeling.

Week #1

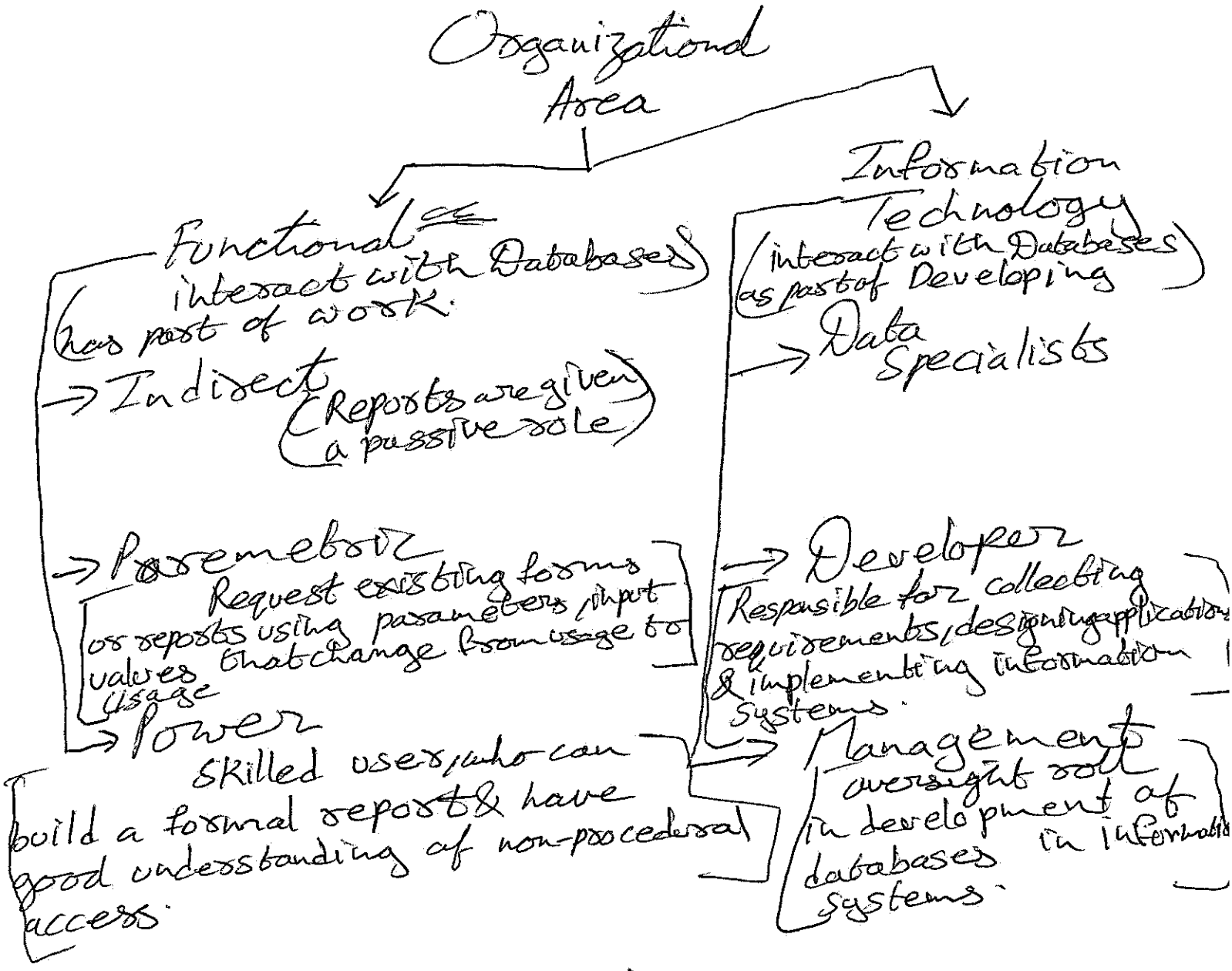
Course Introduction

Aim of course is cover:-
Create tables in relational data base & develop integrity Rules. (Module 1 to 3)
Data Retrival using SQL (Module 4 & 5)
Data Modelling (Module 6 & 7)
Refine Table Design for Redundancy. (Modules 8 & 9)
Conversion Rules & Goidelines (Module 10 & 11)

Introduction to Databases & DBMS

→ Data is Raw facts & events
→ Databases are persistent, inter-related & shared storage of Data.
⇒ An entity-relationship diagram (ERD) is a type of data modelling that shows a graphical representation of objects or concepts with-in an information system or organisation & their relationship to one another.

Organisational Roles :-



Database Administrator :-
Maintance of Database Applicance, access control & upgrade activities.

Data Administrator :-
This is a managment role with responsibilities to plan development of new databases & control usage of data throughout an organization.

DBMS overview & Database Definition:-

DBMS:- A collection of components that supports the creation, use & maintenance of databases.

DBMS Characteristics:-

Efficient Storage & retrieval of data
Data Acquisition
Dissemination
Maintenance
Retrieval
Formatting

Enterprise DBMS use servers running UNIX, IBM's MVS operating system & Microsoft Windows server OS.

Oracle is considered the leading provider of enterprise database products followed by Microsoft, IBM & SAP & TERADATA & MYSQL.

Database Definition (Schema) is difference b/w spreadsheets & DBMS.

SQL is used to communicate with a database in DBMS.

DBMS typically provide graphical tools to augment the schema creation

Non-procedural Access :-
What data to retrive is specified but how to retrive is left to DBMS.

Query :- A database query can be either a simple data retrieval query or an action query that performs additional operations on the data, such as insertion, updating or deletion.

Transaction Processing :-
transaction processing involves the control of information flow.
Supports daily operations of an organisation.
Collection of database operations are called transactions.
Reliable & efficient processing of transactions as one unit of work is necessary of Database consistancy.
No lost data due to interference among multiple users.
Recover from failures without loss of data for completed transactions.
DBMS internal Features like Concurrancy control manager & Recovery manager are crucial for Transaction Processing.

Data Warehouse processing :-

Operational databases support essential organisational functioning such as order processing manufacturing, accounts payable & product distribution

Short term problems are solved in an organisation with operational data.

"Data Warehouse" refers to a logically centralized data repository where data from operational databases & other sources are integrated, cleaned & standardized to support B.I.

"Transactional processing" is primarily in operational databases where large volume of transactions occur with small amounts of data required daily essential Business activities.

"Business Intelligence Processing" is collection of historical Data from operational Databases & external Data sources.