Database Exam 1 notes & Data Structure notes Quiz 1 notes

Data base:

* Chapters 1 - 3 in the textbook
* Explain Importance of databases

Databases provide an efficient way to store, retrieve and analyze data.

* Explain Usage of databases

Usage of database can be for storing information that’s being collected in businesses or schools.

* Explain and Identify Database components (DB, DBMS, APP, USER)

DB- Database, an organized collection of data.

DBMS- Database management system, a collection of applications that facilitate the extraction, modification and storage of data within a database.

APP- Database application, a computer program whose primary purpose is entering and retrieving information from a database.

USER- Application programmers, sophisticated users, specialized users, and naïve users. Users who interact with the system in different ways.

* Identify if a table is in 1NF, 2NF, or 3NF
* Explain 1NF, 2NF, 3NF

1NF is the first normal form that provides minimum set of requirements for normalizing. . One important property is that a table that comply with 1NF could not contain any attributes that are relational valued.

2NF- For a table to comply with 2NF, it should be complied with 1NF and any attribute that is not a part of any candidate key (i.e. non-prime attributes) should fully depend on any of the candidate keys in the table.

* CREATE STATEMENT including basic data types and constraints

CREATE TABLE tbl\_table(

testname varchar(50),

testid INT NOT NULL,

CONSTRAINT PRIMARY KEY (testid)

);

* INSERT STATEMENT

INSERT INTO tbl\_table(testname, testid, testpro) VALUES

(billy, 1, yeet);

* Primary Key- Primary key of a relational table uniquely identifies each record in the table.
* Foriegn Key- A foreign key is a key used to link two tables together
* Natural Key- a natural key is a single column or set of columns that uniquely identifies a single record in a table
* Surrogate Key- Surrogate keys don’t have a natural relationship with the rest of the columns in a table
* Composite Key- a composite key can be defined as the primary key. It is a combination of two or more columns in a table that uniquely identify each row in the table when the columns are combined.

Data Structures

Complexity

One Recursion exercise