Terms to Remember

Table - Entity a group of related records

Primary key- unique for each record in a table ensures that no two records in a database contain the same value creates relationships between tables may be composed of one or multiple columns called a Compound or a composite primary key

Unique/Candidate/Alternate key- a combination of attributes that can be uniquely used to identify a database record without any extraneous data. Each table may have one or more candidate keys. One of these candidate keys is selected as the table primary key. May be composed of one or multiple columns called a Compound or a composite candidate key.

Foreign key-A key field that identifies records in a different table is used to establish a relationship with another table or tables.

Entity Relationship Diagrams (ER)- One-to-one: one instance of an entity (A) is associated with one other instance of another entity

One-to-many- one instance of an entity (A) is associated with zero, one or many instances of another entity (B), but for one instance of entity B there is only one instance of entity A. Row in one table related to one or more rows in another table One” side is the base table, “Many” side is the related table. Primary key is used for the join. Foreign key: Field in one table which is primary key in another table.

Many to Many- No Bueno Need a Transition table.

DDL Commands- Create,Alter,Drop,Truncate,Comment,Rename

CREATE TABLE tablename

(

Columnname TYPE Constraint constraint\_name Constraint Type

Patient\_id Number Constraint Patient\_id\_nn Not Null

Height NUMBER CHECK (height>10),

Height NUMBER CONSTRAINT patient\_height\_ck CHECK (height BETWEEN 5 and 10),

Patient\_id NUMBER REFERENCES patient (patient\_id),

); Tabel Level

CONSTRAINT patient\_patient\_id\_pk PRIMARY KEY (patient\_id)

FOREIGN KEY (patient\_id) REFERENCES tablename

CONSTRAINT patient\_disease\_disease\_id\_fk FOREIGN KEY (disease\_id)REFERENCES tablename

Some common types:

VARCHAR2(n), CHAR(n), DATE, NUMBER(p,s) Numeric column where p indicates precision(total number of digits to the left and right of the decimal position- max 38 digits) and s indicates scale (number of positions to the right of the decimal.

Desc- DESC table\_name; provides information about the columns in a table

View Table Contents – Select \* From table\_name; or look at specific rows SELECT fname, lname, DOB FROM table\_name;

Drop – Drop Table table\_name;

Insert Command – Insert Into table\_name Values(1,’John’)

Delete Command – DELETE FROM table\_name; Deletes all the rows in the table can get them back

Truncate Command – Truncate Table table\_name; Deletes all rows but cannot get them back

Rename Table – RENAME table\_name TO new\_table\_name

Adding Columns Using Alter Command - ALTER TABLE tablename ADD|MODIFY|DROP| columnname (definition);

Example - ALTER TABLE table\_name ADD column\_name CHAR; ALTER TABLE patient ADD DOB DATE UNIQUE;

Dropping Columns Using Alter Command - ALTER TABLE patient DROP (height);

Modifying Using Alter – Examples- ALTER TABLE patient MODIFY fname VARCHAR2(20);

ALTER TABLE patient MODIFY patient\_id NOT NULL;

Renaming column using ALTER - ALTER TABLE patient RENAME COLUMN fname TO first\_name;

Constraints

column level means the constraint’s definition is included as part of the column definition.

Creating a constraint at the table level means the constraint’s definition is separate from the column definition.

Common Constraints – Primary Key, Foreign Key, Unique, Check, Not Null

A constraint can be included during table creation as part of the CREATE TABLE command or added to an existing table with the ALTER TABLE command. A FOREIGN KEY constraint requires that the column entry match a referenced column entryin the table or be NULL.

User Constraints table - SELECT table\_name, constraint\_name, constraint\_type FROMuser\_constraints WHERE table\_name='PATIENT';

Alter Table Primary and Composite Primary Key - ALTER TABLE patient ADD PRIMARY KEY (patient\_id); Composite Primary Key Example

ALTER TABLE patient ADD PRIMARY KEY (fname, lname);

Alter Table Unique and Composite Unique Key - ALTER TABLE patient ADD CONSTRAINT patient\_patient\_id\_uk UNIQUE (patient\_id);

ALTER TABLE patient ADD UNIQUE (fname, lname);

Alter table Check Constraint - ALTER TABLE patient MODIFY height CONSTRAINT patient\_height\_ck CHECK(height>10);

Foreign Key Constraint - ALTER TABLE patient\_disease ADD CONSTRAINTpatient\_disease\_disease\_id\_fk FOREIGN KEY(disease\_id) REFERENCES

disease;

Disable/Enable Constraints - ALTER TABLE patient DISABLE PRIMARY KEY; ALTER TABLE patient DISABLE UNIQUE (fname,lname);

ALTER TABLE patient DISABLE CONSTRAINT patient\_patient\_id\_pk;

Dropping Constraints - ALTER TABLE patient DROP CONSTRAINT patient\_height\_ck; ALTER TABLE patient DROP PRIMARY KEY;

ALTER TABLE patient DROP UNIQUE (fname,lname);

Indexs - CREATE INDEX patient\_address\_idx ON patient (address); View Indexes SELECT index\_name FROM user\_indexes WHERE table\_name='PATIENT'; Change index name ALTER INDEX patient\_address\_idx RENAME TO pat\_add\_idx;

Drop Index - DROP INDEX patient\_address\_idx;

Data Manipulation (inserts)) – Identify columns means order can be different INSERT INTO char\_test (colb,colc,cola) VALUES ('b','cc','aaa');

col1 NUMBER(5), numbers that aren’t more than 5 digits ,, NUMBER(5,3): Can store a real number. Two digits can be a whole number and three digitss for the decimal

Inserting Dates – dd/MAR/23 or dd/MAR/2023 how to insert dates INSERT INTO date\_test VALUES ('01-feb-11');

To\_char - SELECT TO\_CHAR (col,'YYYY/MM/DD hh24:mi:ss') FROM date\_test; prints date out

To\_date – insert dates in different formats INSERT INTO date\_test VALUES (TO\_DATE('1999/02/04','YYYY/MM/DD'));

INSERT INTO date\_test VALUES (TO\_DATE('99/02/04','YY/DD/MM'));

Sequences CREATE SEQUENCE disease\_disease\_id\_seq INCREMENTBY 4 START WITH 10;

INSERT INTO patient VALUES (patient\_patient\_id\_seq.nextval,40,’jimm’,’jones’);

ALTER SEQUENCE patient\_patient\_id\_seq INCREMENT BY 2; SELECT patient\_patient\_id\_seq.currval FROM DUAL; SELECT patient\_patient\_id\_seq.nextval FROM DUAL;