**NAME SANAULLAH**

**ROLL (2K20/CSM/82)**

**ASSIGNMENT NORMALIZED DATABASE**

**SUBMITTED TO SIR HABIBULLAH NANGRAJ**

Q1 HOW TO CREATE USER ?

STEP\_1 RUN AS ADMINISTRATOR IN SQL PLUS

STEP\_2 SIGN SYS AS SYSDBA

STEP\_3 CONNECT SYS AS SYSDBA

STEP\_4 Password Oracle

STEP\_5 create user sanaullah identified by Admin123;

STEP\_6 grant connect,resource to sanaullah;

STEP\_7 connect sanaullah

STEP\_8 password admin123

Q2 NORMALIZED DATABASE OF UNIVERSITY MANAGEMENT SYSTEM

CREATE DATABASE UniversityManagementSystem

Use UniversityManagementSystem

CREATE TABLE Student (

Student\_id VARCHAR (50) PRIMARY KEY NOT NULL,

First\_name VARCHAR (50) NOT NULL,

Last\_name VARCHAR (50) NOT NULL,

Email VARCHAR (50) NOT NULL

)

INSERT INTO STUDENT

VALUES('2K20/CSM/1','SANAULLAH','Abbasi','kalhorosanaullah38@gmail.com');

INSERT INTO STUDENT

VALUES('2K20/pe/2','SHAMS','SOOMRO','SHAMSSOOMRO380@gmail.com');

INSERT INTO Student

VALUES('2K19/EL/4','ZAIN','JUNEJO','ZAINJUNEJO385@gmail.com');

INSERT INTO STUDENT

VALUES('2K30/SE/5','MALIK','SAMO','MALIKSAMO384@gmail.com');

INSERT INTO STUDENT

VALUES('2K16/MLT/8','FARHAN','LASHARI','FARHANLASHARI@gmail.com');

CREATE TABLE Schedule(

Schedule\_id VARCHAR (50) PRIMARY KEY NOT NULL,

Day VARCHAR (50) NOT NULL,

Start\_time VARCHAR (50) NOT NULL,

End\_time VARCHAR (50) NOT NULL,)

INSERT INTO Schedule

VALUES('2K20/1/EV','MONDAY','2:30PM,','6:00 PM');

INSERT INTO Schedule

VALUES('2K20/1/MOR','MONDAY','8:30 AM','2:00 PM');

INSERT INTO Schedule

VALUES('2K20/2/EV','TUSEDAY','2:30 PM','6:00 PM');

INSERT INTO Schedule

VALUES('2K20/2/MOR','TUSEDAY','8:30 AM','2:00 PM');

INSERT INTO Schedule

VALUES('2K20/3/EV','WEDNESDAY','2:30 AM','6:00 PM');

INSERT INTO Schedule

VALUES('2K20/3/MOR','WEDNESDAY','8:30 AM','2:00 PM');

CREATE TABLE Course(

Course\_id VARCHAR (50) PRIMARY KEY NOT NULL,

Course\_name VARCHAR (50) NOT NULL,

Type VARCHAR (50) NOT NULL,

Term VARCHAR (50) NOT NULL

)

INSERT INTO COURSE

VALUES('C144','ENGLISH','BEGINNER','FIRST');

INSERT INTO COURSE

VALUES('C145','COMPUTER LITERATURE','BEGINNER','SECOND');

INSERT INTO COURSE

VALUES('C146','PHYSIC','BEGINNER','FIRST');

INSERT INTO COURSE

VALUES('C147','PAKISTAN STUDIES','INTERMEDIATE','FIRST');

CREATE TABLE Department(

Department\_id VARCHAR (50) PRIMARY KEY NOT NULL,

Department\_name VARCHAR (50) NOT NULL,

Phone\_num VARCHAR (50) NOT NULL,

Email VARCHAR (50)

)

INSERT INTO Department

VALUES('CS-1','COMPUTER SCIENCE','XYZ','XYZ');

INSERT INTO Department

VALUES('SE-34','SOFTWARE ENGINEERING','XYZ','XYZ');

INSERT INTO Department

VALUES('EL-45','ENGLISH LANG','XYZ','XYZ');

INSERT INTO Department

VALUES('IT-56','INFORMATION TECH','XYZ','XYZ');

INSERT INTO Department

VALUES('ES-53','ELECTRONICS SCIENCE','XYZ','XYZ');

CREATE TABLE Instructor (

Instructor\_id VARCHAR (50) PRIMARY KEY NOT NULL,

First\_name VARCHAR (50) NOT NULL,

Last\_name VARCHAR (50) NOT NULL,

Rank VARCHAR (50) NOT NULL,

Department\_id VARCHAR (50) FOREIGN KEY REFERENCES Department (department\_id)

);

INSERT INTO Instructor

VALUES('INS-31','HABIBULLAH','NANGRAJ','ASSISTANT PROFESSOR','ES-53');

INSERT INTO Instructor

VALUES('INS-37','ZEESHAN','KUMBHAR','ASSISTANT LECTURER','IT-56');

INSERT INTO Instructor

VALUES('INS-19','RAJESH','SHARMA','LECTURER','EL-45');

INSERT INTO Instructor

VALUES('INS-98','YASIR','MALKANI','PROFESSOR','SE-34');

CREATE TABLE Section

(

Section\_id VARCHAR (50) PRIMARY KEY NOT NULL,

Room VARCHAR(50) NOT NULL,

Course\_id VARCHAR (50) FOREIGN KEY REFERENCES COURSE (course\_id),

Schedule\_id VARCHAR (50) FOREIGN KEY REFERENCES Schedule (Schedule\_id),

instructor\_id VARCHAR (50) FOREIGN KEY REFERENCES Instructor(instructor\_id),

)

insert into section

values('sec\_4','7\_room','C144','2K20/2/MOR','INS-31');

insert into section

values('sec\_5','4\_room','C145','2K20/2/EV','INS-19');

insert into section

values('sec\_6','5\_room','C146','2K20/3/MOR','INS-98');

insert into section

values('sec\_7','6\_room','C147','2K20/3/EV','INS-37');

CREATE TABLE Enrollment(

Enrollment\_id VARCHAR (50) PRIMARY KEY NOT NULL,

Academic\_year VARCHAR (50) NOT NULL,

Term VARCHAR (50) NOT NULL,

Date\_enrolled VARCHAR (50)NOT NULL,

Mid\_term\_grade VARCHAR (50) NOT NULL,

Final\_grade VARCHAR (50) NOT NULL,

Student\_id VARCHAR (50) FOREIGN KEY REFERENCES Student (student\_id),

Section\_id VARCHAR (50) FOREIGN KEY REFERENCES Section (section\_id)

)

INSERT INTO Enrollment

VALUES('1930','2K22','3RD','6-1-2K2-','A','A','2K20/CSM/1','sec\_4');

INSERT INTO Enrollment

VALUES('1932','2K22','3RD','6-1-2K2-','B','A','2K20/pe/2','sec\_4');

INSERT INTO Enrollment

VALUES('1934','2K22','3RD','6-1-2K2-','A','B','2K19/EL/4','sec\_4');

INSERT INTO Enrollment

VALUES('1935','2K22','3RD','6-1-2K2-','A','C','2K30/SE/5','sec\_4');

select\* from enrollment

QUERIES OF JOINS

**EQUIJOIN QUERY**

SELECT student.first\_name,student.last\_name,student.student\_id,enrollment.academic\_year,enrollment.student\_id

from student ,enrollment

where student.student\_id=enrollment.student\_id;

**using Aliases**

SELECT s.first\_name,s.last\_name,s.student\_id,e.academic\_year,e.student\_id

from student s ,enrollment e

where s.student\_id=e.student\_id;

**Using outer join**

SELECT s.first\_name,s.last\_name,s.student\_id,e.academic\_year,e.student\_id

from student s ,enrollment e

where s.student\_id (+) = e.student\_id;

**left outer join**

SELECT s.first\_name,s.last\_name,s.student\_id,e.academic\_year,e.student\_id

from student s left outer join enrollment e

on (s.student\_id=e.student\_id);

**right outer join**

SELECT s.first\_name,s.last\_name,s.student\_id,e.academic\_year,e.student\_id

from student s right outer join enrollment e

on (s.student\_id=e.student\_id);

**full outer join**

SELECT s.first\_name,s.last\_name,s.student\_id,e.academic\_year,e.student\_id

from student s full outer join enrollment e

on (s.student\_id=e.student\_id);

**additional conditions**

SELECT s.first\_name,s.last\_name,s.student\_id,e.academic\_year,e.student\_id

from student s join enrollment e

on (s.student\_id=e.student\_id)

and s.student\_id='2K30/SE/5'

**SQL GENERATED ERD**