

SQL HANDS ON

```
SHOW DATABASES;  
CREATE DATABASE handsonsql;  
USE handsonsql;
```

/*EXERCISE 1*/

```
CREATE TABLE Trainer_Info(  
Trainer_Id VARCHAR(20) PRIMARY KEY,  
Salutation VARCHAR(7) ,  
Trainer_Name VARCHAR(30),  
Trainer_Location VARCHAR(30),  
Trainer_Track VARCHAR(15),  
Trainer_Qualification VARCHAR(100),  
Trainer_Experience Integer(11),  
Trainer_Email VARCHAR(100),  
Trainer_Password VARCHAR(20));
```

```
CREATE TABLE Batch_Info(  
Batch_Id VARCHAR(20) PRIMARY KEY,  
Batch_Owner VARCHAR(30),  
Batch_BU_Name VARCHAR(30));
```

```
CREATE TABLE Associate_Info(  
Associate_Id VARCHAR(20) PRIMARY KEY,  
Salutation VARCHAR(7),  
Associate_Name VARCHAR(30),  
Associate_Location VARCHAR(30),  
Associate_Track VARCHAR(15),  
Associate_Qualification VARCHAR(200),  
Associate_Email VARCHAR(100),  
Associate_Password VARCHAR(20));
```

```
CREATE TABLE Questions(  
Question_Id VARCHAR(20) PRIMARY KEY,  
Module_Id VARCHAR(20),  
Question_Text VARCHAR(200));
```

```
CREATE TABLE Associate_Status(  
Associate_Id VARCHAR(20),  
Module_Id VARCHAR(20) ,  
Batch_Id VARCHAR(20),  
Trainer_Id VARCHAR(20),  
Start_Date VARCHAR(20),
```

```
End_Date VARCHAR(20),
PRIMARY KEY(Associate_Id,Module_Id),
FOREIGN KEY(Associate_Id) REFERENCES Associate_Info(Associate_Id),
FOREIGN KEY(Batch_Id) REFERENCES Batch_Info(Batch_Id),
FOREIGN KEY(Trainer_Id) REFERENCES Trainer_Info(Trainer_Id),
FOREIGN KEY(Module_Id) REFERENCES Module_Info(Module_Id));
```

```
CREATE TABLE Module_Info(
Module_Id VARCHAR(20) PRIMARY KEY,
Module_Name VARCHAR(40),
Module_Duration INTEGER(11));
```

```
CREATE TABLE Trainer_Feedback(
Trainer_Id VARCHAR(20) ,
Question_Id VARCHAR(20),
Batch_Id VARCHAR(20),
Module_Id VARCHAR(20),
Trainer_Rating INTEGER(11),
PRIMARY KEY(Trainer_Id,Question_Id),
FOREIGN KEY(Trainer_Id) REFERENCES Trainer_Info(Trainer_Id),
FOREIGN KEY(Question_Id) REFERENCES Questions(Question_Id),
FOREIGN KEY(Batch_Id) REFERENCES Batch_Info(Batch_Id),
FOREIGN KEY(Module_Id) REFERENCES Module_Info(Module_Id));
```

```
CREATE TABLE Associate_Feedback(
Associate_Id VARCHAR(20),
Question_Id VARCHAR(20),
Module_Id VARCHAR(20),
Trainer_Id VARCHAR(20),
Associate_Rating Integer(11),
PRIMARY KEY(Associate_Id,Question_Id),
FOREIGN KEY(Associate_Id) REFERENCES Trainer_Info(Trainer_Id),
FOREIGN KEY(Question_Id) REFERENCES Questions(Question_Id),
FOREIGN KEY(Module_Id) REFERENCES Module_Info(Module_Id));
```

```
CREATE TABLE Login_Details(
User_Id VARCHAR(20) PRIMARY KEY,
User_Password VARCHAR(20));
```

/*EXERCISE 2*/

```
INSERT INTO Trainer_Info VALUES ('F001','Mr.' , 'PANKAJ GHOSH' , 'Pune' , 'Java' , 'Bachelor of Technology',12,'Pankaj.Ghosh@alliance.com','fac1@123'),
('F002','Mr.' , 'SANJAY RADHAKRISHNAN ' , 'Bangalore' , 'DotNet' , 'Bachelor of Technology',12,'Sanjay.Radhakrishnan@alliance.com','fac2@123'),
('F003','Mr.' , 'VIJAY MATHUR' , 'Chennai' , 'Mainframe' , 'Bachelor of Technology',10,'Vijay.Mathur@alliance.com','fac3@123'),
('F004','Mrs.' , 'NANDINI NAIR' , 'Kolkata' , 'Java' , 'Master of Computer
```

Applications',9,'Nandini.Nair@alliance.com','fac4@123'),
('F005','Miss.','ANITHA PAREKH','Hyderabad','Testing','Master of Computer Applications',6,'Anitha.Parekh@alliance.com','fac5@123'),
('F006','Mr.','MANOJ AGRAWAL','Mumbai','Mainframe','Bachelor of Technology',9,'Manoj.Agrawal@alliance.com','fac6@123'),
('F007','Ms.','MEENA KULKARNI','Coimbatore','Testing','Bachelor of Technology',5,'Meena.Kulkarni@alliance.com','fac7@123'),
('F009','Mr.','SAGAR MENON ','Mumbai','Java','Master of Science In Information Technology',12,'Sagar.Menon@alliance.com','fac8@123');

INSERT INTO Batch_Info VALUES ('B001','MRS.SWATI ROY','MSP'),
('B002','MRS.ARURNA K','HEALTHCARE'),
('B003','MR.RAJESH KRISHNAN','LIFE SCIENCES'),
('B004','MR.SACHIN SHETTY','BFS'),
('B005','MR.RAMESH PATEL','COMMUNICATION'),
('B006','MRS.SUSAN CHERIAN','RETAIL & HOSPITALITY'),
('B007','MRS.SAMPADA JAIN','MSP'),
('B008','MRS.KAVITA REGE','BPO'),
('B009','MR.RAVI SEJPAL','MSP');

INSERT INTO Module_Info VALUES
(‘O10SQL’,‘Oracle 10g SQL’ ,16),
(‘O10PLSQL’,‘Oracle 10g PL/ SQL’ ,16),
(‘J2SE’,‘Core Java SE 1.6’,288),
(‘J2EE’,‘Advanced Java EE 1.6’,80),
(‘JAVAFX’,‘JavaFX 2.1’,80),
(‘DOTNT4’,‘.Net Framework 4.0 ’,50),
(‘SQL2008’,‘MS SQL Server 2008’,120),
(‘MSBI08’,‘MS BI Studio 2008’,158),
(‘SHRPNT’,‘MS Share Point’ ,80),
(‘ANDRД4’,‘Android 4.0’,200),
(‘EM001’,‘Instructor’,0),
(‘EM002’,‘Course Material’,0),
(‘EM003’,‘Learning Effectiveness’,0),
(‘EM004’,‘Environment’,0),
(‘EM005’,‘Job Impact’,0),
(‘TM001’,‘Attendees’,0),
(‘TM002’,‘Course Material’,0),
(‘TM003’,‘Environment’,0);

INSERT INTO Associate_Info VALUES
(‘A001’,‘Miss.’,‘GAYATHRI NARAYANAN’,‘Gurgaon’,‘Java’,‘Bachelor of Technology’,‘Gayathri.Narayanan@hp.com’,‘tne1@123’),
(‘A002’,‘Mrs.’,‘RADHIKA MOHAN’,‘Kerala’,‘Java’,‘Bachelor of Engineering In Information Technology’,‘Radhika.Mohan@cognizant.com’ ,‘tne2@123’),
(‘A003’,‘Mr.’,‘KISHORE SRINIVAS’,‘Chennai’,‘Java’,‘Bachelor of Engineering In Computers’,‘Kishore.Srinivas@ibm.com’ ,‘tne3@123’),
(‘A004’,‘Mr.’,‘ANAND RANGANATHAN’,‘Mumbai’,‘DotNet’,‘Master of Computer

Applications','Anand.Ranganathan@finolex.com','tne4@123'),
('A005','Miss.','LEELA MENON','Kerala','Mainframe','Bachelor of Engineering In Information Technology','Leela.Menon@microsoft.com','tne5@123'),
('A006','Mrs.','ARTI KRISHNAN','Pune','Testing','Master of Computer Applications','Arti.Krishnan@cognizant.com','tne6@123'),
('A007','Mr.','PRABHAKAR SHUNMUGHAM','Mumbai','Java','Bachelor of Technology','Prabhakar.Shunmugham@honda.com','tne7@123');

INSERT INTO Questions VALUES

('Q001','EM001','Instructor knowledgeable and able to handle all your queries'),
(Q002','EM001','All the topics in a particular course handled by the trainer without any gaps or slippages'),
(Q003','EM002','The course materials presentation, handson, etc. referred during the training are relevant and useful.'),
(Q004','EM002','The Hands on session adequate enough to grasp the understanding of the topic.'),
(Q005','EM002','The reference materials suggested for each module are adequate.'),
(Q006','EM003','Knowledge and skills presented in this training are applicable at your work'),
(Q007','EM003','This training increases my proficiency level'),
(Q008','EM004','The physical environment e.g. classroom space, air-conditioning was conducive to learning.'),
(Q009','EM004','The software/hardware environment provided was sufficient for the purpose of the training.'),
(Q010','EM005','This training will improve your job performance.'),
(Q011','EM005','This training align with the business priorities and goals.'),
(Q012','TM001','Participants were receptive and had attitude towards learning.'),
(Q013','TM001','All participants gained the knowledge and the practical skills after this training.'),
(Q014','TM002','The course materials presentation, handson, etc. available for the session covers the entire objectives of the course.'),
(Q015','TM002','Complexity of the course is adequate for the participate level.'),
(Q016','TM002','Case study and practical demos helpful in understanding of the topic'),
(Q017','TM003','The physical environment e.g. classroom space, air-conditioning was conducive to learning.'),
(Q018','TM003','The software/hardware environment provided was adequate for the purpose of the training.');

INSERT INTO Associate_Status VALUES

(A001','O10SQL','B001','F001','2000-12-15','2000-12-25'),
(A002','O10SQL','B001','F001','2000-12-15','2000-12-25'),
(A003','O10SQL','B001','F001','2000-12-15','2000-12-25'),
(A001','O10PLSQL','B002','F002','2001-2-1','2001-2-12'),
(A002','O10PLSQL','B002','F002','2001-2-1','2001-2-12'),
(A003','O10PLSQL','B002','F002','2001-2-1','2001-2-12'),
(A001','J2SE','B003','F003','2002-8-20','2002-10-25'),
(A002','J2SE','B003','F003','2002-8-20','2002-10-25'),
(A001','J2EE','B004','F004','2005-12-1','2005-12-25'),

```
('A002','J2EE','B004','F004','2005-12-1','2005-12-25'),  
('A003','J2EE','B004','F004','2005-12-1','2005-12-25'),  
('A004','J2EE','B004','F004','2005-12-1','2005-12-25'),  
('A005','JAVAFX','B005','F006','2005-12-4','2005-12-20'),  
('A006','JAVAFX','B005','F006','2005-12-4','2005-12-20'),  
('A006','SQL2008','B006','F007','2007-6-21','2007-6-28'),  
('A007','SQL2008','B006','F007','2007-6-21','2007-6-28'),  
('A002','MSBI08','B007','F006','2009-6-26','2009-6-29'),  
('A003','MSBI08','B007','F006','2009-6-26','2009-6-29'),  
('A004','MSBI08','B007','F006','2009-6-26','2009-6-29'),  
('A002','ANDRD4','B008','F005','2010-6-5','2010-6-28'),  
('A005','ANDRD4','B008','F005','2010-6-5','2010-6-28'),  
('A003','ANDRD4','B009','F005','2011-8-1','2011-8-20'),  
('A006','ANDRD4','B009','F005','2011-8-1','2011-8-20');
```

/*EXERCISE 3*/

```
UPDATE Trainer_Info SET Trainer_Password='nn4@123' WHERE  
Trainer_Password='fac4@123';
```

/*EXERCISE 4*/

```
DELETE FROM Associate_Status WHERE Associate_Id='A003' AND Module_Id='J2EE'  
AND Batch_Id='B004' AND Trainer_Id='F004' AND Start_Date='2005-12-1' AND  
End_Date='2005-12-25';
```

/*EXERCISE 5*/

```
SELECT * FROM Trainer_Info ORDER BY Trainer_Experience DESC LIMIT 5;
```

/*EXERCISE 6*/

```
SELECT * FROM Login_Details ;  
START TRANSACTION ;  
INSERT INTO Login_Details VALUES ('U001' , 'Admin1@123'),  
('U002' , 'Admin2@123');  
ROLLBACK;  
SELECT * FROM Login_Details;
```

/*EXERCISE 7*/

```
CREATE USER 'anagha'@'localhost' IDENTIFIED BY 'password' ;  
GRANT CREATE ON handsonsql TO 'anagha'@'localhost';  
GRANT SELECT ON handsonsql.Login_Details TO 'anagha'@'localhost';  
START TRANSACTION ;  
SELECT * FROM Login_Details ;  
INSERT INTO Login_Details VALUES ('U001' , 'Admin1@123'),  
('U002' , 'Admin2@123');  
ROLLBACK;  
REVOKE CREATE ON handsonsql FROM 'anagha'@'localhost';  
REVOKE SELECT ON handsonsql.Login_Details FROM 'anagha'@'localhost';
```

/*EXERCISE 8*/

```
DROP TABLE Login_Details;
```

/*EXERCISE 9*/

```
CREATE TABLE supplies(  
supplier_id integer(10) Not Null,  
supplier_name varchar(50) Not Null,  
address varchar(50),  
city varchar(50),  
state varchar(25),  
zip_code varchar(10));
```

/*EXERCISE 10*/

```
CREATE TABLE course(  
Course_Code varchar(25) primary key,  
Base_fees Integer(11),  
Special_fees Integer(11),  
Created_By varchar(25),  
Updated_By varchar(25));
```

```
CREATE TABLE course_fees(  
COURSE_CODE varchar(25) primary key,  
BASE_FEES Integer(11),  
SPECIAL_FEES Integer(11),  
DISCOUNT Integer(11));
```

```
INSERT INTO course_fees VALUES
```

```
('1',  
180,  
100,  
10),  
(‘2’,  
150,  
110,  
10),  
(‘3’,  
160,  
170,  
5),  
(‘4’,  
150,  
100,  
10),  
(‘6’,  
190,  
100,
```

```

40);

CREATE TABLE course_fees_history(
COURSE_CODE varchar(25) primary key,
BASE_FEES Integer(11),
SPECIAL_FEES Integer(11),
CREATED_BY varchar(25),
Updated_By varchar(25));

INSERT INTO course_fees_history VALUES
('1',
120,
123,
'Ram',
'Ramesh'),
('2',
150,
110,
'Bala',
'Ram'),
('3',
160,
170,
'Bala',
'Vinu'),
('4',
170,
235,
'Ram',
'Ram'),
('6',
190,
100,
'Vinod',
'Vinod');

SELECT COURSE_CODE,BASE_FEES,SPECIAL_FEES FROM course_fees UNION
SELECT COURSE_CODE,BASE_FEES,SPECIAL_FEES FROM course_fees_history;

/*EXERCISE 11*/
SELECT COUNT(*) FROM course_fees;
SELECT COUNT(DISTINCT(course_code)) FROM course_fees;
/*Since both count is equal course code is unique in table course_fees*/
SELECT COUNT(DISTINCT(base_fees)) FROM course_fees;
/*Since both count is not equal base fees is not unique in table course_fees*/
SELECT COUNT(DISTINCT(special_fees)) FROM course_fees;
/*Since both count is not equal special fees is not unique in table course_fees*/

```

```
SELECT COUNT(*) FROM course_fees_history;
SELECT COUNT(DISTINCT(course_code)) FROM course_fees_history;
/*Since both count is equal course code is unique in table course_fees_history*/
SELECT COUNT(DISTINCT(base_fees)) FROM course_fees_history;
/*Since both count is equal base fees is unique in table course_fees_history.*/
SELECT COUNT(DISTINCT(special_fees)) FROM course_fees_history;
/*Since both count is equal special fees is unique in table course_history.*/
```

/*EXERCISE 12*/

```
CREATE TABLE course_info(
COURSE_CODE varchar(10) PRIMARY KEY,
COURSE_NAME varchar(20) NOT NULL,
COURSE_DESCRIPTION varchar(25),
COURSE_START_DATE Date ,
COURSE_DURATION int(11),
NO_OF_PARTICIPANTS int(255),
COURSE_TYPE Char(3));
```

```
CREATE TABLE student_info(
STUDENT_ID varchar(10) PRIMARY KEY,
course_code varchar(10),
FIRST_NAME varchar(20),
LAST_NAME varchar(25),
ADDRESS varchar(150),
FOREIGN KEY(COURSE_CODE) REFERENCES course_info(course_code));
```

```
INSERT INTO course_fees VALUES ('7',NULL,200,25);
INSERT INTO course_fees VALUES ('8',NULL,300,50);
INSERT INTO course_fees VALUES ('9',300,300,50),('10',175,100,25);
SELECT * FROM course_fees;
SELECT MIN(IFNULL(base_fees,0)),MAX(base_fees) FROM course_fees;
```

/*EXERCISE 13 and 14*/

```
SELECT COUNT(*) FROM course_fees;
SELECT * FROM course_fees;
CREATE TABLE newcol(
sn INT primary KEY ,
infra_fees DECIMAL(5,3));
ALTER TABLE course_fees ADD infra_fees DECIMAL(5,3);
INSERT INTO newcol VALUES (1,41.1239),(2,42.123),(3,43.123),(4,44.123),(10,45.123),
(6,46.123),(7,47.123),(8,48.123),(9,45.123);
SELECT AVG(newcol.infra_fees) FROM course_fees INNER JOIN newcol ON
course_fees.course_code=newcol.sn;
SELECT DATEDIFF(curdate(),COURSE_START_DATE) FROM course_info;
```

/*EXERCISE 15*/

```
SELECT CONCAT('<',course_name,'>','<',course_code,'>') FROM course_info;
```

/*EXERCISE 16*/

```
SELECT AVG(IFNULL(base_fees,0)) FROM course_fees;
```

/*EXERCISE 17*/

```
ALTER TABLE course_info ADD message VARCHAR(30);
INSERT INTO Course_Info(Course_Code,Course_Name,Course_Type,message) VALUES
('CS06','F','CLR','Class Room'),('CS07','G','EL','ELearning'),('CS08','H','OF','Offline Reading');
SELECT * FROM course_info;
Select Course_Type, message from Course_Info where Course_Type in ('CLR','EL','OF');
```

/*EXERCISE 18*/

```
SELECT course_start_date, SUM(NO_OF_PARTICIPANTS) as NO_OF_PARTICIPANTS
FROM course_info GROUP BY course_start_date;
```

/*EXERCISE 19*/

```
SELECT course_start_date, SUM(NO_OF_PARTICIPANTS) as NO_OF_PARTICIPANTS
FROM course_info WHERE course_type='CLR' GROUP BY course_start_date;
```

/*EXERCISE 20*/

```
SELECT course_start_date, SUM(NO_OF_PARTICIPANTS) as NO_OF_PARTICIPANTS
FROM course_info WHERE course_type='CLR' GROUP BY course_start_date HAVING
SUM(NO_OF_PARTICIPANTS)>10;
```

/*EXERCISE 21*/

```
SELECT course_name FROM course_info ORDER BY course_duration;
```

/*EXERCISE 22*/

```
SELECT student_info.student_id,student_info.first_name,student_info.last_name,
course_info.course_code FROM student_info INNER JOIN course_info ON
student_info.course_code WHERE student_info.course_code='167';
```

/*EXERCISE 23*/

```
SELECT course_fees.discount, course_info.course_description FROM course_fees INNER
JOIN course_info ON course_info.course_code=course_fees.course_code;
```

/*EXERCISE 24*/

```
INSERT INTO student_info VALUES ('1','CS09','ANAGHA','GULKARI','shivaji nagar,
nagpur');
SELECT student_info.first_name, course_info.course_code FROM student_info LEFT JOIN
course_info ON student_info.course_code=course_info.course_code;
SELECT student_info.first_name, course_info.course_code FROM course_info RIGHT JOIN
student_info ON student_info.course_code=course_info.course_code;
```

/*EXERCISE 25*/

```
SELECT * FROM course_fees;
INSERT INTO course_info VALUES ('CS11','I','coding','2021-01-01',50,1,'CLR','Class
```

```
Room'),('CS12','J','CLOUD','2020-02-11',30,1,'EL','ELearning');  
INSERT INTO course_fees VALUES ('CS11',1000,200,20,20),('CS12','900','300',50,15);  
INSERT INTO student_info VALUES (2,'CS11','ANAGHA','Jayant','mumbai');  
INSERT INTO student_info VALUES (3,'CS12','AMEY','THAKUR','nagpur');  
SELECT DISTINCT student_info.student_id FROM student_info INNER JOIN course_fees  
ON student_info.course_code=course_fees.course_code WHERE  
((base_fees+special_fees+infra_fees)*(1-discount/100))<1500;
```

/*EXERCISE 26*/

```
SELECT DISTINCT student_info.student_id,student_info.first_name FROM student_info  
INNER JOIN course_fees ON student_info.course_code=course_fees.course_code WHERE  
((base_fees+special_fees+infra_fees)*(1-discount/100))<1500;
```