

## **SQL HANDS-ON**

Create database sqlhandson;

### **EXERCISE-1:**

```
CREATE TABLE Trainer_Info(  
Trainer_Id VARCHAR(20) not null,  
Salutation VARCHAR(7) not null,  
Trainer_Name VARCHAR(30) not null,  
Trainer_Location VARCHAR(30) default 'India',  
Trainer_Track VARCHAR(15) not null,  
Trainer_Qualification VARCHAR(100),  
Trainer_Experience Integer(11) not null,  
Trainer_Email VARCHAR(100) not null,  
Trainer_Password VARCHAR(20) not null,  
Primary key (Trainer_Id),  
);
```

```
CREATE TABLE Batch_Info(  
Batch_Id VARCHAR(20) not null,  
Batch_Owner VARCHAR(30) not null,  
Batch_BU_Name VARCHAR(30) not null,  
Primary key (Batch_Id)  
);
```

```
CREATE TABLE Associate_Info(  
Associate_Id VARCHAR(20) not null,  
Salutation VARCHAR(7) not null,  
Associate_Name VARCHAR(30) not null,  
Associate_Location VARCHAR(30) default 'India',  
Associate_Track VARCHAR(15) not null,  
Associate_Qualification VARCHAR(200),  
Associate_Email VARCHAR(100),  
Associate_Password VARCHAR(20),  
Primary key (Associate_Id),  
);
```

```
CREATE TABLE Questions(  
Question_Id VARCHAR(20) not null,  
Module_Id VARCHAR(20) not null,  
Question_Text VARCHAR(200),  
Primary key (Question_Id),  
);
```

```
CREATE TABLE Associate_Status(  
Associate_Id VARCHAR(20) not null,
```

```
Module_Id VARCHAR(20) not null,  
Batch_Id VARCHAR(20) not null,  
Trainer_Id VARCHAR(20) not null,  
Start_Date VARCHAR(20) not null,  
End_Date VARCHAR(20) not null,  
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) not null,  
Module_Name VARCHAR(40) not null,  
Module_Duration INTEGER(11)  
Primary key(Module_Id),  
);
```

```
CREATE TABLE Trainer_Feedback(  
Trainer_Id VARCHAR(20) not null,  
Question_Id VARCHAR(20) not null,  
Batch_Id VARCHAR(20) not null,  
Module_Id VARCHAR(20) not null,  
Trainer_Rating INTEGER(11) not null,  
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) not null,  
Question_Id VARCHAR(20) not null,  
Module_Id VARCHAR(20) not null,  
Trainer_Id VARCHAR(20) not null,  
Associate_Rating Integer(11) not null,  
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) not null,  
User_Password VARCHAR(20) not null,
```

);

## 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),
('DOTNET4','.Net Framework 4.0',50),
('SQL2008','MS SQL Server 2008',120),
('MSBI08','MS BI Studio 2008',158),
('SHRPNT','MS Share Point',80),
('ANDRD4','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
conductive 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) default = 'India',
city varchar(50),
state varchar(25),
zip_code varchar(10),
);
```

**EXERCISE-10:**

```
CREATE TABLE course(
Course_Code varchar(25) not null,
Base_fees Integer(11) not null,
Special_fees Integer(11) not null,
Created_By varchar(25),
Updated_By varchar(25),
Primary key (Course_Code),
);
```

```
CREATE TABLE course_fees(
```

```
COURSE_CODE varchar(25) not null,  
BASE_FEES Integer(11) not null,  
SPECIAL_FEES Integer(11) not null,  
DISCOUNT Integer(11),  
);
```

```
INSERT INTO course_fees  
Values (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) not null,  
BASE_FEES Integer(11) not null,  
SPECIAL_FEES Integer(11) not null,  
CREATED_BY varchar(25),  
Updated_By varchar(25)  
Primary key(COURSE_CODE),  
);
```

```
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:**

##### **BOTH COUNT IS EQUAL COURSE CODE IS UNIQUE IN TABLE COURSE FEES**

```
SELECT COUNT * FROM course_fees;  
SELECT COUNT(DISTINCT(course_code)) FROM course_fees;
```

##### **BOTH COUNT IS NOT EQUAL BASE FEES IS NOT UNIQUE IN TABLE COURSE FEES**

```
SELECT COUNT(DISTINCT(base_fees)) FROM course_fees;
```

##### **BOTH COUNT IS NOT EQUAL SPECIAL FEES IS NOT UNIQUE IN TABLE COURSE FEES**

```
SELECT COUNT(DISTINCT(special_fees)) FROM course_fees;
```

##### **BOTH COUNT IS EQUAL COURSE CODE IS UNIQUE IN TABLE COURSE FEES HISTORY**

```
SELECT COUNT * FROM course_fees_history;  
SELECT COUNT(DISTINCT(course_code)) FROM course_fees_history;
```

**BOTH COUNT IS EQUAL BASE FEES IS UNIQUE IN TABLE COURSE FEES HISTORY**

```
SELECT COUNT(DISTINCT(base_fees)) FROM course_fees_history;
```

**BOTH COUNT IS EQUAL SPECIAL FEES IS UNIQUE IN TABLE COURSE HISTORY**

```
SELECT COUNT(DISTINCT(SPECIAL_FEES)) FROM COURSE_FEES_HISTORY;
```

**EXERCISE-12:**

```
CREATE TABLE course_info(  
  COURSE_CODE varchar(10) not null,  
  COURSE_NAME varchar(20) not null,  
  COURSE_DESCRIPTION varchar(25),  
  COURSE_START_DATE date,  
  COURSE_DURATION int(11) not null,  
  NO_OF_PARTICIPANTS int(255),  
  COURSE_TYPE Char(3),  
  Primary key(COURSE_CODE),  
);
```

```
CREATE TABLE student_info(  
  STUDENT_ID varchar(10),  
  course_code varchar(10),  
  FIRST_NAME varchar(20),  
  LAST_NAME varchar(25),  
  ADDRESS varchar(150),  
  PRIMARY KEY(STUDENT_ID),  
  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:**

```
SELECT COUNT * FROM course_fees;  
SELECT * FROM course_fees;  
CREATE TABLE newcol(  
  serial number int (8),  
  infra_fees DECIMAL(5,3),  
  Primary key(course_fees);  
);  
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.serial number;
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;
```