**Batch Name:** Infosys FP5.0 Summer 2018

**Enrollment No:** R171217044

**SAPID:** 500060722

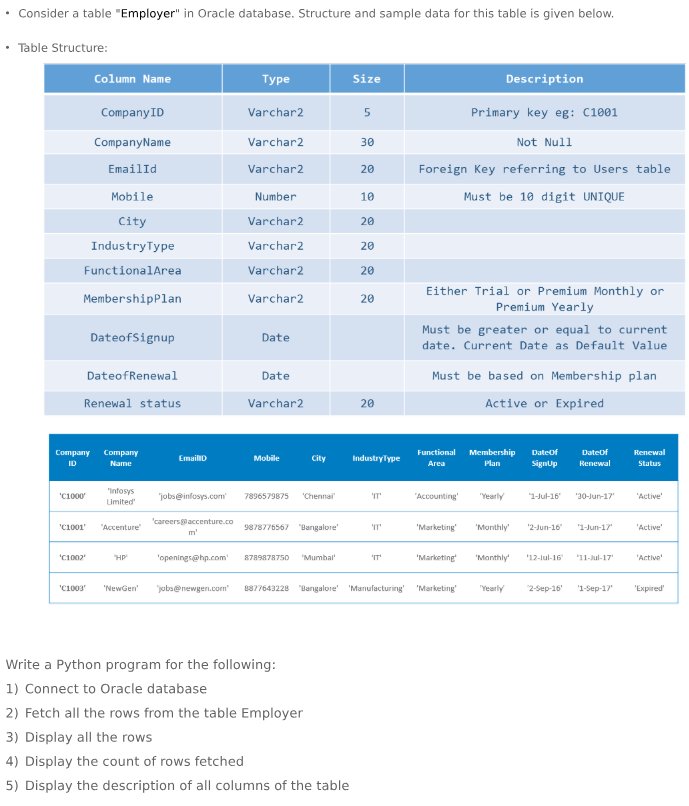
**Name:** PRAJJAWAL BANATI

**Sem:** SEM-II

**Branch:** CSE-DEVOPS

**MODULE 2**

**ASSIGNMENT 1**



**Ans:**

**import cx\_Oracle**

**con=cx\_Oracle.connect("SYSTEM/user123@localhost/xe")**

**cur=con.cursor()**

**cur.execute('Select \* from Employer')**

**for line in cur:**

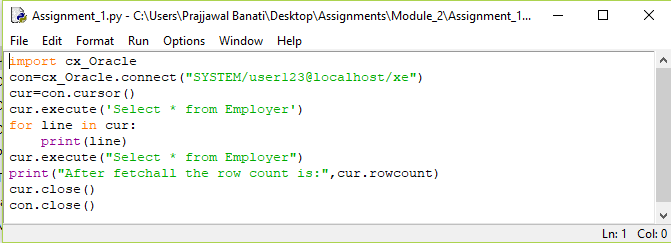
**print(line)**

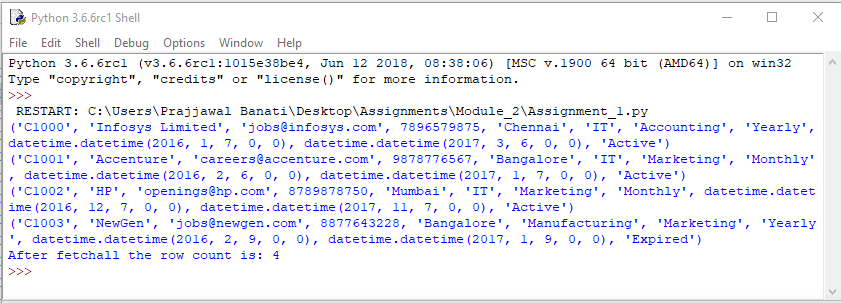
**cur.execute("Select \* from Employer")**

**print("After fetchall the row count is:",cur.rowcount)**

**cur.close()**

**con.close()**







**ASSIGNMENT 2**

**InfoTech Systems wants to retrieve certain information regarding their employers. Help them implement the following business requirements:**

1. **Retrieve the name and email id of all 'IT' companies in 'Bangalore'.**

**Ans:**

**import cx\_Oracle**

**con = cx\_Oracle.connect('SYSTEM/user123@localhost/xe')**

**cur = con.cursor()**

**cur.execute(""" SELECT CompanyName,EmailId from Employer where IndustryType = 'IT' AND City = 'Bangalore' """)**

**res = cur.fetchall()**

**print(res)**

**con.close()**

1. **Retrieve the name, mobile number and email id of all companies in a given city whose Renewal Status is 'Active'. Accept 'city' and ‘functionalarea’ as an input from user. Use positional bind variables.**

**Ans:**

**import cx\_Oracle**

**city=input("Enter name of city: ")**

**con = cx\_Oracle.connect('SYSTEM/user123@localhost/xe')**

**cur = con.cursor()**

**cur.execute(""" SELECT CompanyName,Mobile,EmailId from Employer where RenewalStatus =:param1 AND city =:param2 """,('Active',city))**

**res = cur.fetchall()**

**print(res)**

**con.close()**

1. **Reverse the order of passing the parameter values in the above program and observe the output.**

**Ans:**

**import cx\_Oracle**

**city=input("Enter Name of City: ")**

**con = cx\_Oracle.connect('SYSTEM/user123@localhost/xe')**

**cur = con.cursor()**

**cur.execute(""" SELECT CompanyName,Mobile,EmailId from Employer where RenewalStatus =:param1 AND city =:param2 """,(city,'Active'))**

**res = cur.fetchall()**

**print(res)**

**con.close()**

1. **Implement the scenario in question# 2 using named bind variables.**

**Ans:**

**import cx\_Oracle**

**city=input("Enter the name of city: ")**

**con = cx\_Oracle.connect('SYSTEM/user123@localhost/xe')**

**cur = con.cursor()**

**cur.execute(""" SELECT CompanyName,Mobile,EmailId from Employer where RenewalStatus =:param1 AND city =:param2 """,{'param1':'Active','param2':city})**

**res = cur.fetchall()**

**print(res)**

**con.close()**

1. **Reverse the order of passing of the bind variables in the above program and observe the output. Are you still getting the same result?**

**Ans:**

**import cx\_Oracle**

**city=input("Enter the name of the city: ")**

**con = cx\_Oracle.connect('SYSTEM/user123@localhost/xe')**

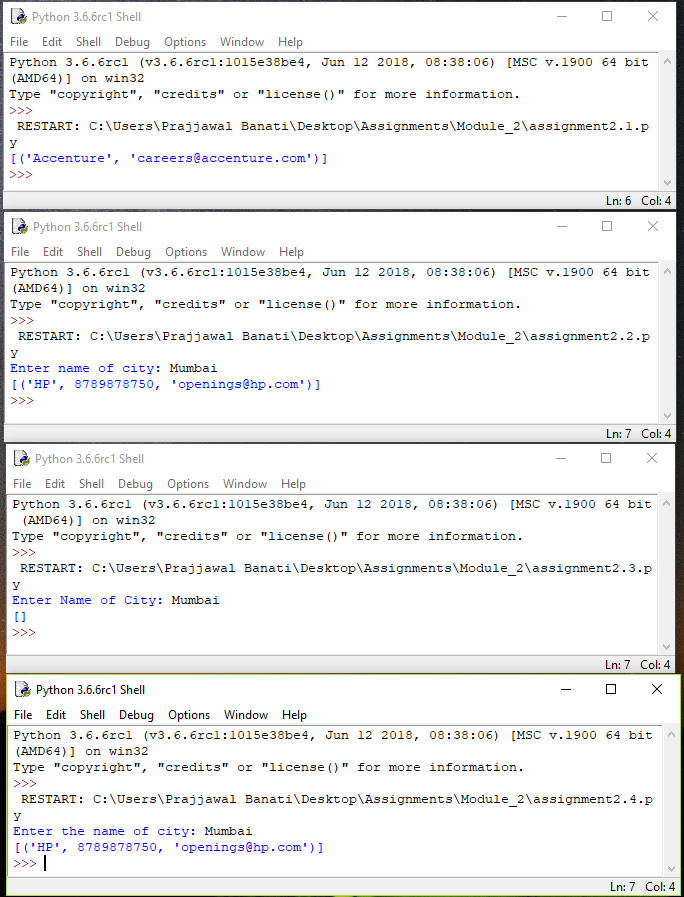
**cur = con.cursor()**

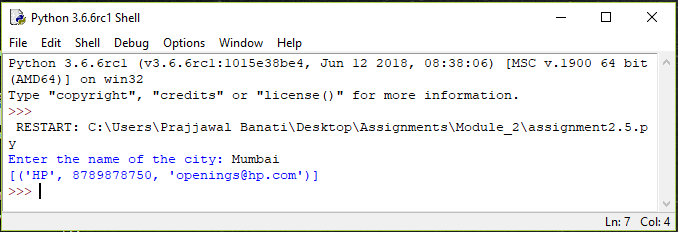
**cur.execute(""" SELECT CompanyName,Mobile,EmailId from Employer where RenewalStatus =:param1 AND city =:param2 """,{'param2':city,'param1':'Active'})**

**res = cur.fetchall()**

**print(res)**

**con.close()**

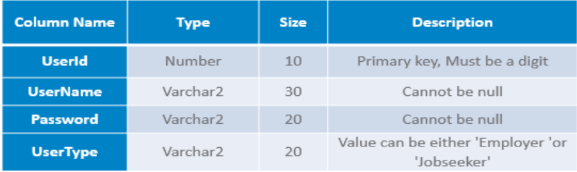




**ASSIGNMENT 3**

**InfoTech Systems is creating an online application for automating the task of job search between employer and job seekers.**

1. **Create a table 'Users' from Python code. The column details are given below:**



**2. Insert the following data into Users table using cx\_Oracle as per the specifications provided below:**



**• Insert first row using hard-coded values in INSERT query.**

**• Insert second row using positional bind variables.**

**• Insert third row using named bind variables.**

**• Accept the values for fourth row from user and insert using bind variables.**

**• Fetch and display all the records from users table.**

**Ans:**

**import cx\_Oracle**

**con=cx\_Oracle.connect("SYSTEM/user123@localhost/xe")**

**cur=con.cursor()**

**cur.execute(""" create table Users(Userid number(10) primary key check(length(userid)>=1),Username varchar2(30) not null,Password varchar2(20) not null,Usertype varchar2(20) check (usertype in ('Employer','Jobseeker')))""")**

**print("Table created successfully")**

**user\_id=2**

**user\_name="careers@accenture.com"**

**password="Acc1"**

**user\_type="Employer"**

**user\_id\_1=3**

**user\_name\_1="rahulitsme@gmail.com"**

**password\_1="rahulindia93"**

**user\_type\_1="Jobseeker"**

**user\_id\_2=4**

**user\_name\_2=input("Enter the name of the user: ")**

**password\_2=input("Enter the password of the 4th user: ")**

**user\_type\_2=input("Enter whether he is employer or Jobseeker: ")**

**cur.execute("Insert into Users values(1,'jobs@infosys.com','jobs@infosys','Employer')")**

**cur.execute("""Insert into Users values(:ID, :name, :password, :usertype)""",{'ID' : user\_id,'name' : user\_name,'password' : password,'usertype' : user\_type})**

**cur.execute("Insert into Users values(:u1,:u2,:u3,:u4)",(user\_id\_1,user\_name\_1,password\_1,user\_type\_1))**

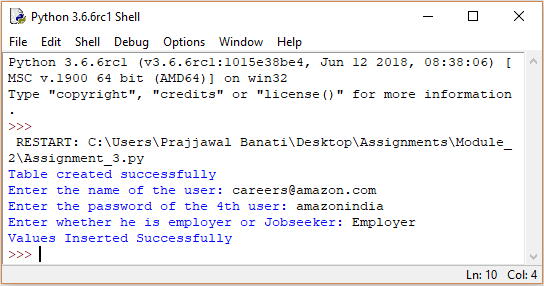
**cur.execute("""Insert into Users values(:ID, :name, :password, :usertype)""",{'ID' : user\_id\_2,'name' : user\_name\_2,'password' : password\_2,'usertype' : user\_type\_2})**

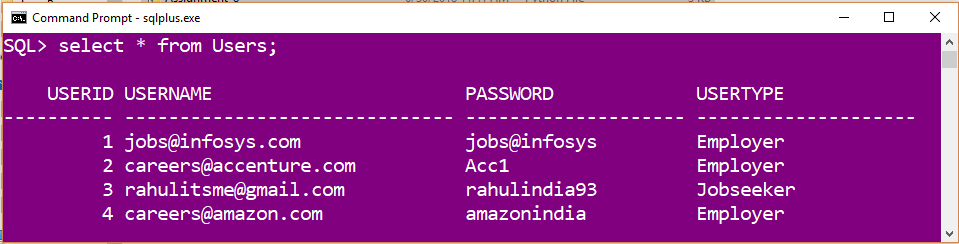
**print("Values Inserted Successfully")**

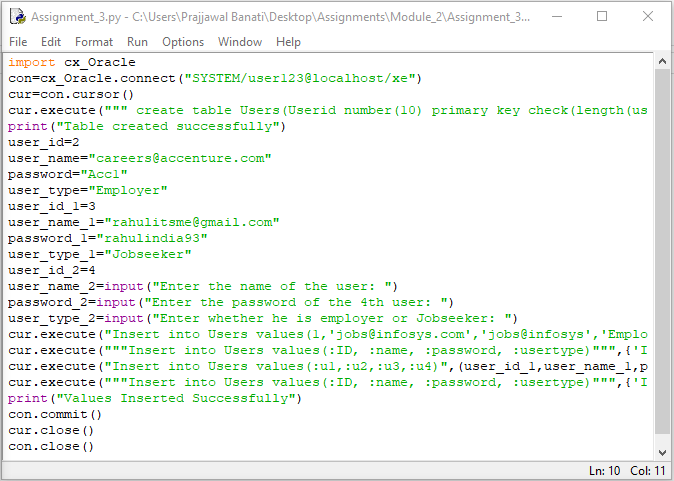
**con.commit()**

**cur.close()**

**con.close()**



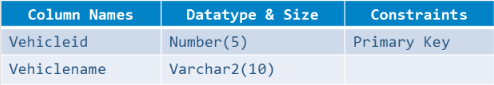




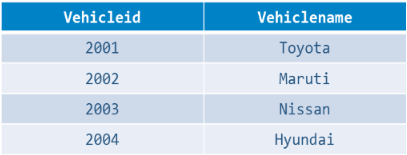
**ASSIGNMENT 4**

**Bloom Technology wants to maintain their employee's vehicle details to make parking facility flexible to the employees.**

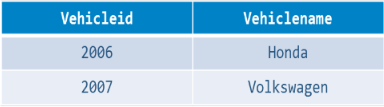
1. **Create the following Vehicle table as a part of the application. Specifications are provided below:**



1. **Insert the following records using executemany() function of cursor. Use positional bind variables.**



1. **Insert two more rows using named bind variables(use executemany() function).**



**4. Fetch and display all the records from Vehicle table.**

**Ans:**

**import cx\_Oracle**

**con=cx\_Oracle.connect("SYSTEM/user123@localhost/xe")**

**cur=con.cursor()**

**cur.execute(""" create table Vehicles(Vehicleid number(5) primary key,vehiclename varchar2(10))""")**

**print("Table created Successfully")**

**counter=2000**

**cur.executemany("INSERT INTO Vehicles values(:1 , :2)",[(counter+1,'Toyota'),(counter+2,'Maruti'),(counter+3,'Nissan'),(counter+4,'Hyundai')])**

**print("Values inserted successfuly using positonal bind variables. The values are: ")**

**cur.execute("select \* from Vehicles")**

**for line in cur:**

**print(line)**

**cur.executemany("INSERT INTO Vehicles values(:vehicleid,:vehiclename)",**

**[{'vehicleid':counter+6,'vehiclename':'Honda'},**

**{'vehicleid':counter+7,'vehiclename':'Volkswagen'}])**

**print("Values inserted successfully using named bind variables. Now All the values are: ")**

**cur.execute("select \* from Vehicles")**

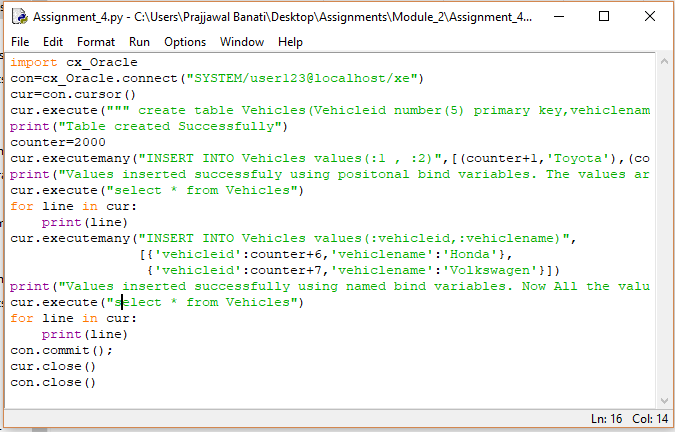
**for line in cur:**

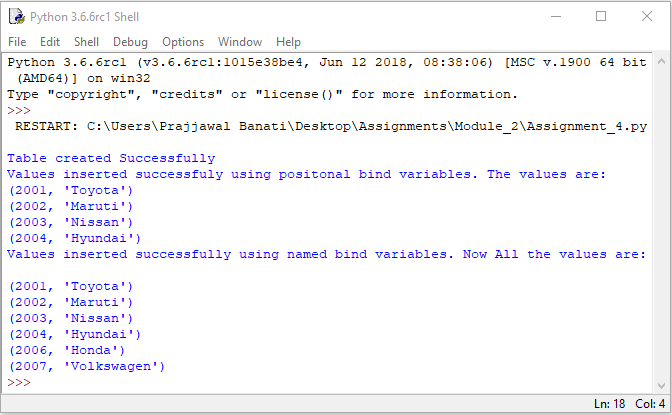
**print(line)**

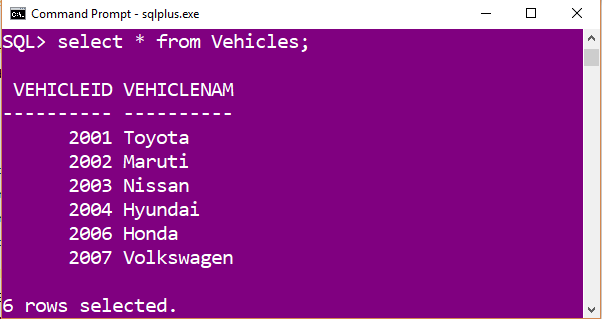
**con.commit();**

**cur.close()**

**con.close()**







**ASSIGNMENT 5**

**Refer to the table 'users' created earlier. The existing table data for “users” table is given below:**

1. **Modify the username and usertype of the user with userid = 4 with the following values:**

**• Username: lookingforjob@yahoo.com**

**•UserType: Jobseeker**



**Fetch and observe the values of ‘username’ and ‘usertype’ of the user with ‘userid = 4’ before and after ‘update’ operation.**

1. **Change the password for userid = 1. Accept the new password as an input from user. Fetch and observe the value of ‘password’ of the user with ‘userid = 1’ before and after ‘update’ operation.**

**Ans:**

**import cx\_Oracle**

**con=cx\_Oracle.connect(“SYSTEM/user123@localhost/xe”)**

**cur=con.cursor()**

**ID=4**

**user\_name=”lookingfojob@yahoo.com”**

**user\_type=”Jobseeker”**

**print(“Before Update operation we have the following row: “)**

**cur.execute(“Select \* from Users where Userid = :ID”,{‘ID’:ID})**

**for line in cur:**

**print(line)**

**cur.execute(“””update Users set Username = :name , Usertype = :type where Userid = :ID”””,{‘name’:user\_name,’type’:user\_type,’ID’:ID})**

**print(“After updating we have: “)**

**cur.execute(“Select \* from Users where Userid = :ID”,{‘ID’:ID})**

**for line in cur:**

**print(line)**

**ID=1**

**password=input(“Enter the new password for User 1.”)**

**print(“Before Update the password of the User1 is:”)**

**cur.execute(“Select Password from Users where Userid = :ID”,{‘ID’:ID})**

**for line in cur:**

**print(line)**

**cur.execute(“””update Users set Password = :password where Userid = :ID”””,{‘password’: password,’ID’:ID})**

**print(“After updating we have: “)**

**cur.execute(“Select Password from Users where Userid = :ID”,{‘ID’:ID})**

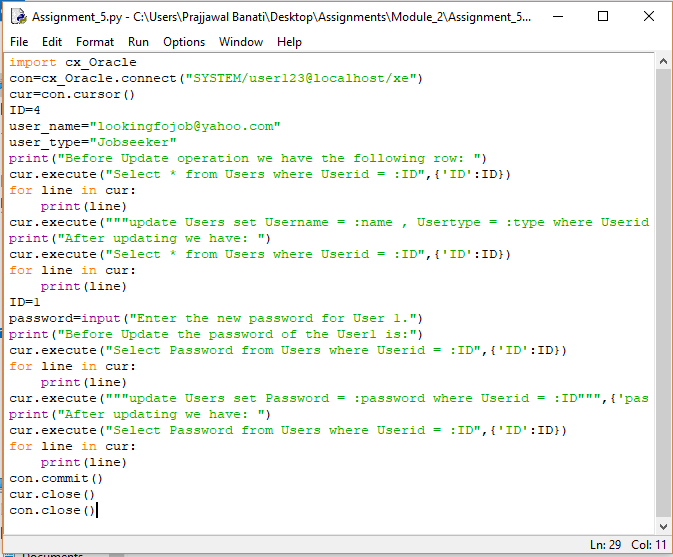
**for line in cur:**

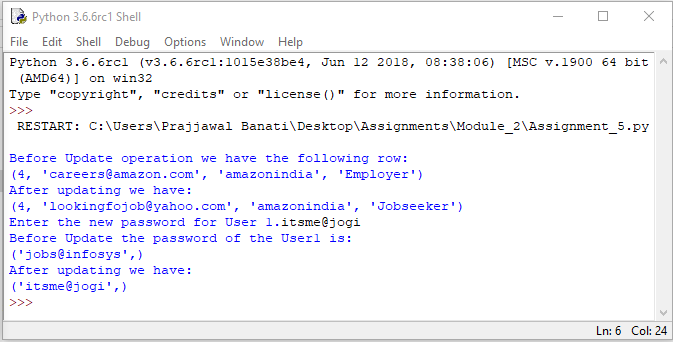
**print(line)**

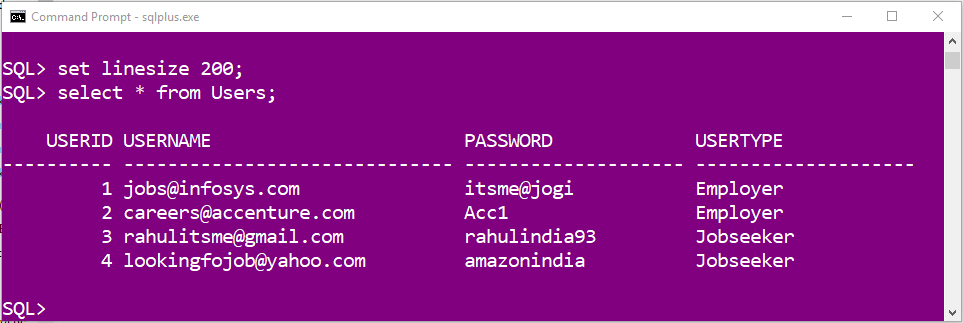
**con.commit()**

**cur.close()**

**con.close()**







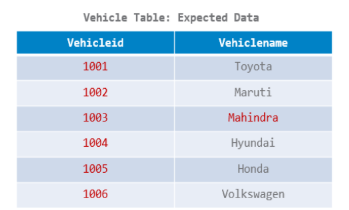
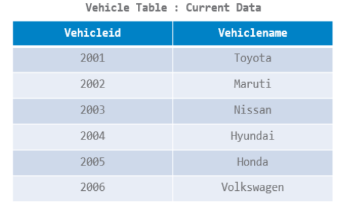
**ASSIGNMENT 6**

**Consider the 'Vehicle' table created earlier. Currently 'Vehicleid' is an integer field with values starting from 2001 onwards.**

**• Update the values of 'Vehicleid' to start from 1001 onwards as shown below.**

**• Update the Vehiclename to "Mahindra" for vehicle with vehicle id 1003.**

**• Fetch and display the values before and after the update operation.**



**Ans:**

**import cx\_Oracle**

**con=cx\_Oracle.connect("SYSTEM/user123@localhost/xe")**

**cur=con.cursor()**

**print("Before Update operation we have the following rows: ")**

**cur.execute("Select \* from Vehicles")**

**for line in cur:**

**print(line)**

**counter=1000**

**cur.execute("Select Vehiclename from Vehicles")**

**cur.execute("update Vehicles set Vehicleid = :vehicle where Vehiclename = :name",{'vehicle':counter+1,'name':'Toyota'})**

**cur.execute("update Vehicles set Vehicleid = :vehicle where Vehiclename = :name",{'vehicle':counter+2,'name':'Maruti'})**

**cur.execute("update Vehicles set Vehicleid = :vehicle where Vehiclename = :name",{'vehicle':counter+3,'name':'Nissan'})**

**cur.execute("update Vehicles set Vehicleid = :vehicle where Vehiclename = :name",{'vehicle':counter+4,'name':'Hyundai'})**

**cur.execute("update Vehicles set Vehicleid = :vehicle where Vehiclename = :name",{'vehicle':counter+6,'name':'Honda'})**

**cur.execute("update Vehicles set Vehicleid = :vehicle where Vehiclename = :name",{'vehicle':counter+7,'name':'Volkswagen'})**

**print("After Updating the 'vehicleid' we have following rows: ")**

**cur.execute("Select \* from Vehicles")**

**for line in cur:**

**print(line)**

**cur.execute("update Vehicles set Vehiclename = :name where Vehicleid = :vehicleid",{'vehicleid':counter+3,'name':'Mahindra'})**

**print("After Updating the name as 'mahindra' we have following rows: ")**

**cur.execute("Select \* from Vehicles")**

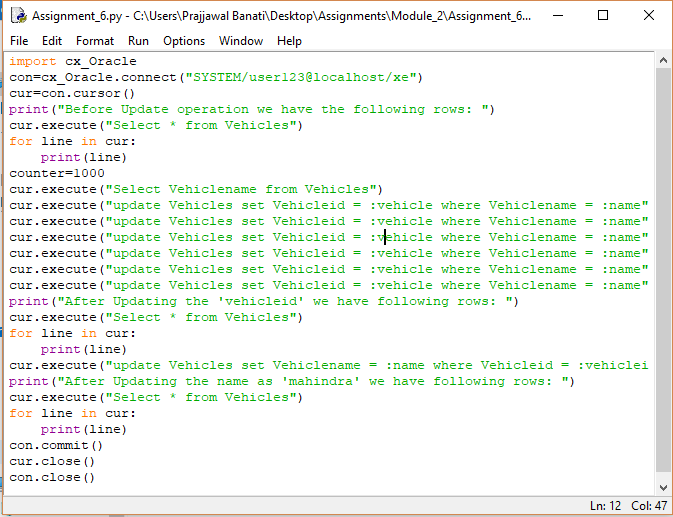
**for line in cur:**

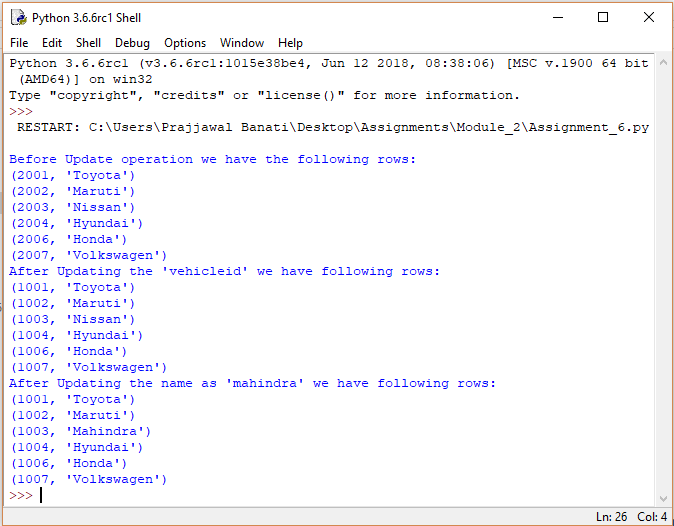
**print(line)**

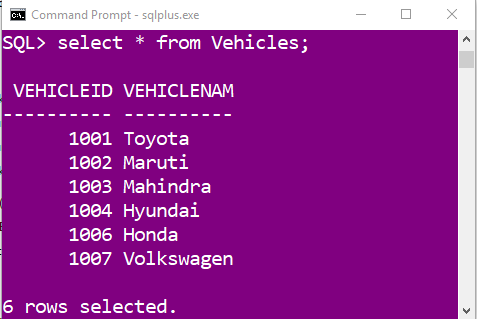
**con.commit()**

**cur.close()**

**con.close()**

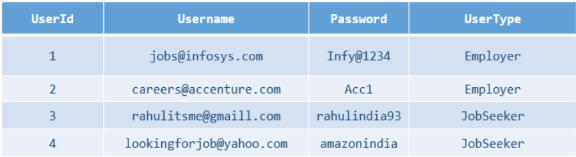




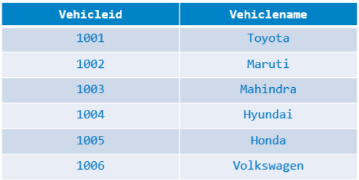


**ASSIGNMENT 7**

1. **Consider 'users' table. Delete the record of user with userid = 1.**



1. **Delete a record from 'Vehicle' table using named bind variables. Accept VehicleId as an input from the user.**



**Ans:**

**import cx\_Oracle**

**con=cx\_Oracle.connect("SYSTEM/user123@localhost/xe")**

**cur=con.cursor()**

**Id=1**

**cur.execute("delete from Users where Userid = :ID",{'ID':Id})**

**cur.execute("Select \* from Users")**

**for line in cur:**

**print(line)**

**print("Coming On to Next Question. Delete a record from 'Vehicle' table using named bind variables. Accept VehicleId as an input from the user.")**

**vehicleid = input("enter the vehicle id of the car which you want to delete: ")**

**cur.execute("delete from Vehicles where Vehicleid = :ID",{'ID':vehicleid})**

**cur.execute("Select \* from Vehicles")**

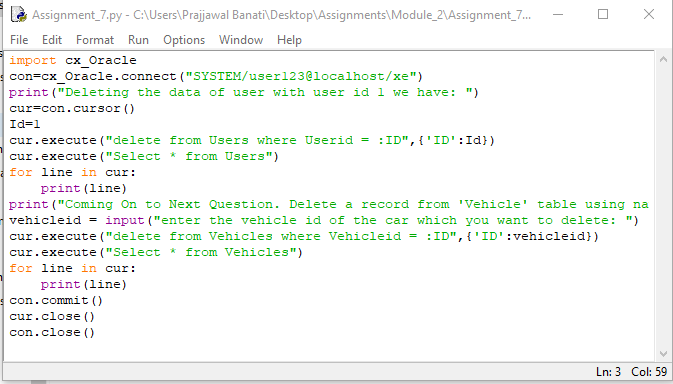
**for line in cur:**

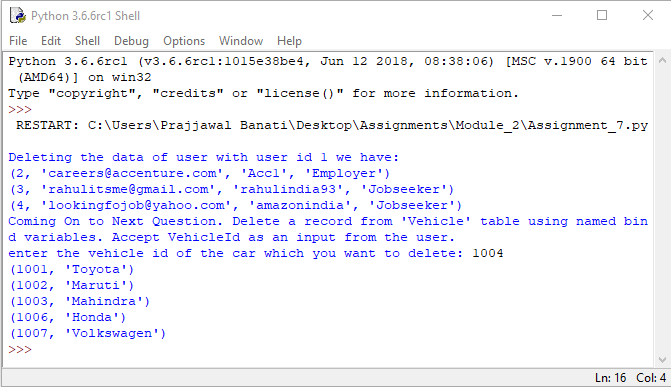
**print(line)**

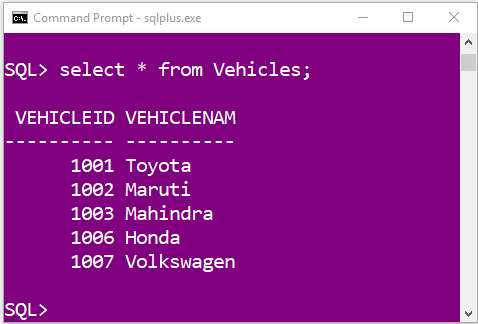
**con.commit()**

**cur.close()**

**con.close()**





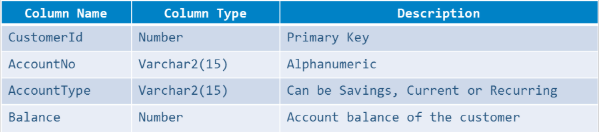


**ASSIGNMENT 8**

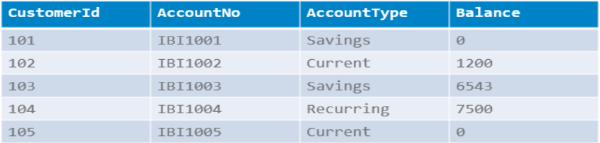
**Consider a scenario from a State Banking organization. The account table is created to store the account details of a customer (Assume every customer can have only one account).**

**Use cx\_Oracle module to implement the following requirements from Python code.(Do not execute the queries in database directly)**

1. **Create the table 'Account' as per below specifications:**



1. **Insert the following rows in the table:**



1. **Display the customer id and account balance of the customer with maximum account balance.**
2. **Fetch the account balance of the customer with customer id 102 and store it in a Python variable – 'acct\_bal'.**
3. **Increment 'acct\_bal' with 2000 and update the 'Balance' field of the table (for that particular customer) with the new value.**
4. **Fetch and observe the updated account balance of the customer with customer id 102.**
5. **Delete the 'Current' accounts with zero balance.**

**Ans:**

**import cx\_Oracle**

**con=cx\_Oracle.connect('SYSTEM/user123@localhost/xe')**

**cur=con.cursor()**

**print("Creating Table..........")**

**cur.execute("""create table Account(Customerid number(5) , Accountno varchar2(15) , Accounttype varchar2(10) , Balance number(10))""")**

**print("Table created Successflly...........")**

**counter = 100**

**bal=0**

**print("Insering values into the table.......")**

**cur.executemany("INSERT INTO Account values(:customerid,:accountno,:accounttype,:balance)",**

**[{'customerid':counter+1 , 'accountno':'IBI1001' , 'accounttype':'Savings' , 'balance': bal},**

**{'customerid':counter+2 , 'accountno':'IBI1002' , 'accounttype':'Current' , 'balance': bal+1200},**

**{'customerid':counter+3 , 'accountno':'IBI1003' , 'accounttype':'Savings' , 'balance': bal+6543},**

**{'customerid':counter+4 , 'accountno':'IBI1004' , 'accounttype':'Recurring','balance': bal+7500},**

**{'customerid':counter+5 , 'accountno':'IBI1005' , 'accounttype':'Current' , 'balance': bal}])**

**print("5 Values Inserted Successfully........That are the values:")**

**cur.execute("select \* from Account")**

**for line in cur:**

**print(line)**

**print("2. The customerid and balance of the cutomer with maximum balance is:")**

**cur.execute("select Customerid , Balance from Account where Balance = 7500")**

**for line in cur:**

**print(line)**

**print("3. (BEFORE UPDATE)The balance of the account of the customer with customer id = 102 is:")**

**Id = 102**

**cur.execute("select Balance from Account where Customerid = :id",{'id':Id})**

**for line in cur:**

**acct\_bal=line[0]**

**print(acct\_bal)**

**acct\_bal=acct\_bal+2000**

**print("4. The amount after incrementing balance by 2000 of customerid of 102 is:")**

**print(acct\_bal)**

**print("Updating this balance........")**

**cur.execute("update Account set Balance = :balance where Customerid = :id",{'balance':acct\_bal,'id':Id})**

**print("Done........Now the credentials(AFTER UPDATE) of 102 is:")**

**cur.execute("select \* from Account where Customerid = :id",{'id':Id})**

**for line in cur:**

**print(line)**

**print("5. Deleting the account no. of zero balances we have:")**

**counter = 0**

**cur.execute("delete Account where Balance = :zero",{'zero':counter})**

**cur.execute("select \* from Account")**

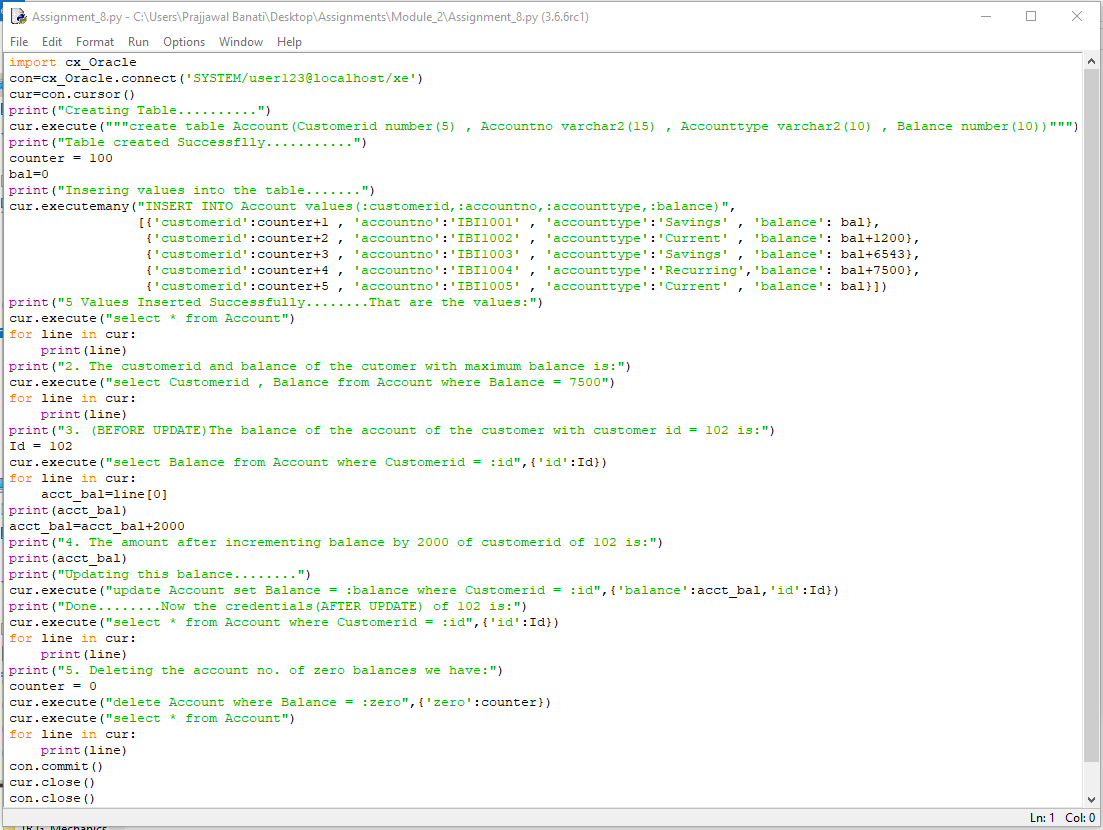
**for line in cur:**

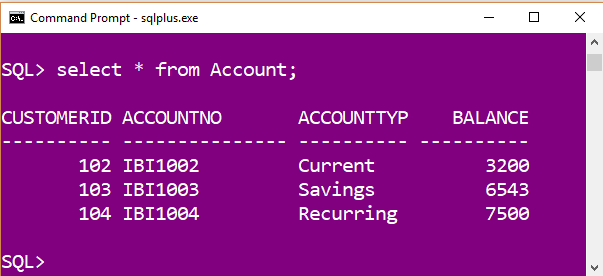
**print(line)**

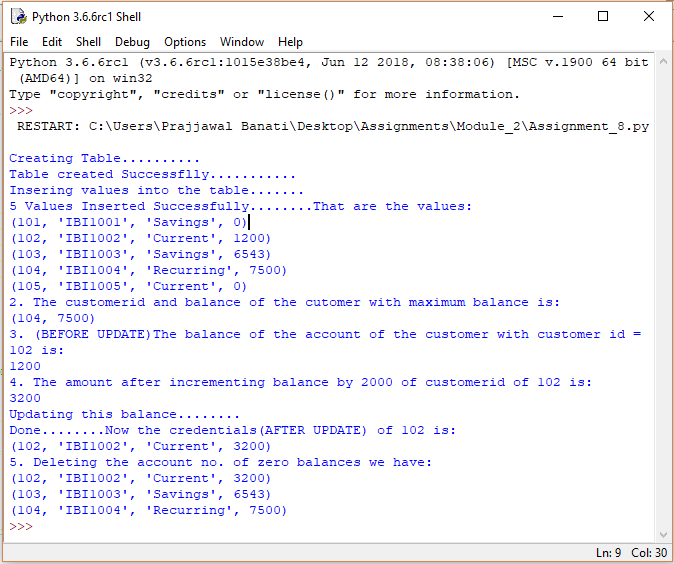
**con.commit()**

**cur.close()**

**con.close()**







**ASSIGNMENT 9**

**•Consider 'users' table already created. It has following data:**



**There is a requirement to delete the record of user with 'userid' 2.**

**•Try to mention incorrect column name(e.g. user\_id) and observe the error.**

**•Use exception handling to handle the exception appropriately. Display the error code and message.**

**•Try to give incorrect username for connection string and observe the error code and message.**

**•Provide a wrong table name while writing the query and observe the error message.**

**Ans:**

**try:**

**import cx\_Oracle**

**con=cx\_Oracle.connect("SYSTEM/user123@localhost/xe")**

**cur=con.cursor()**

**Id=2**

**cur.execute("delete from Users where Userid = :ID",{'ID':Id})**

**cur.execute("Select \* from Users")**

**for line in cur:**

**print(line)**

**except cx\_Oracle.DatabaseError as e:**

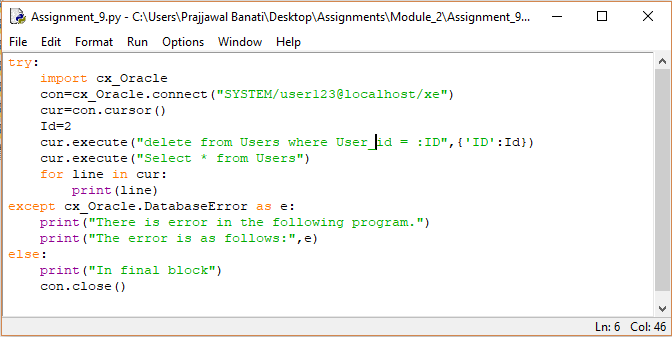
**print("There is error in the following program.")**

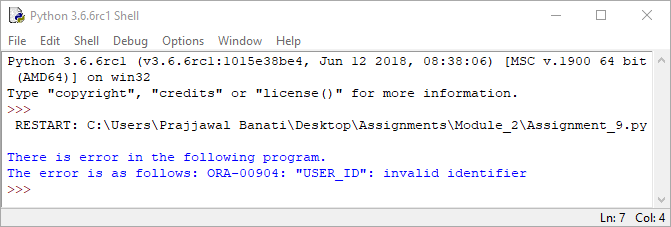
**print("The error is as follows:",e)**

**else:**

**print("In final block")**

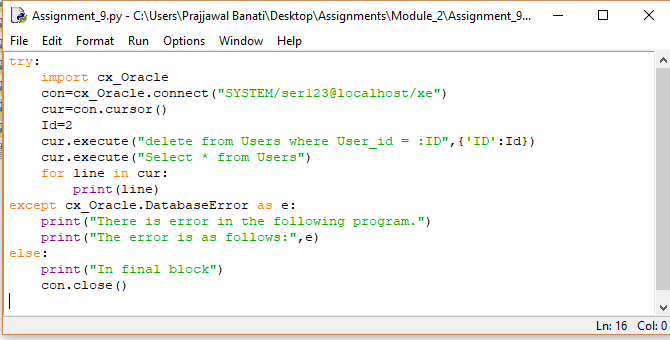
**con.close()**

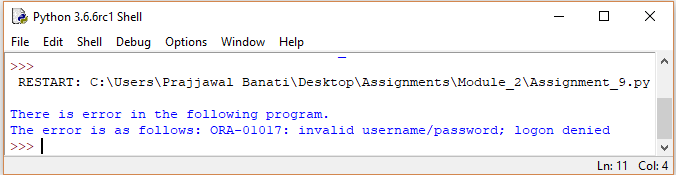
**Error 1**

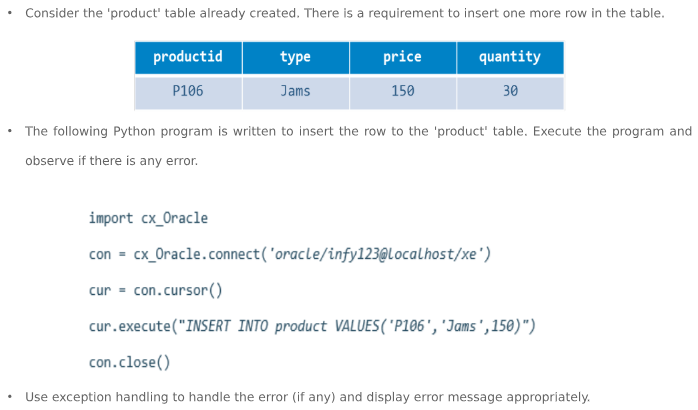


**Resolved :**

**Corrected the row name.**

**Error 2**



**ASSIGNMENT 10**

**Ans:**

**try:**

**import cx\_Oracle**

**con=cx\_Oracle.connect('SYSTEM/user123@localhost/xe')**

**cur=con.cursor()**

**cur.execute("INSERT INTO product VALUES('P106','Jams','150','10')")**

**con.close()**

**except cx\_Oracle.DatabaseError as e:**

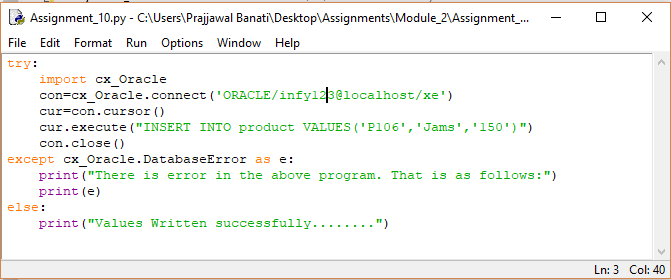
**print("There is error in the above program. That is as follows:")**

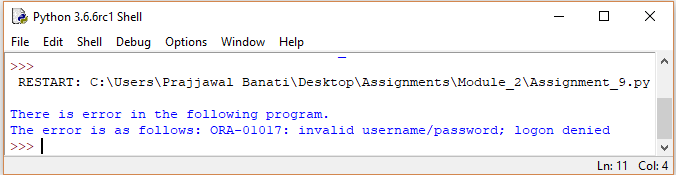
**print(e)**

**else:**

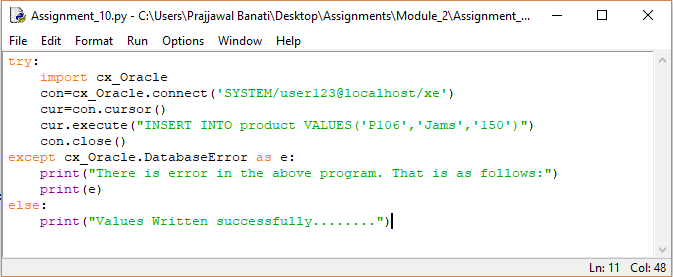
**print("Values Written successfully........")**

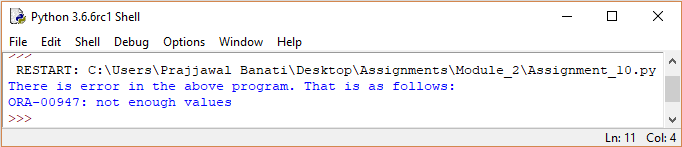
**Exception 1**





**Exception 2:**





**Resolved both:**

