EMBEDDED SQL EXECUTION LOGS

IMPORTING PACKAGES

```
import mysql.connector
import pandas as pd
import numpy as np
import math
import statistics as stat
import matplotlib.pyplot as plt
import seaborn as sns
import random
import warnings
warnings.filterwarnings('ignore')
%matplotlib inline
from getpass import getpass
from time import time
start = time()
```

IMPORTING PACKAGES

In [1]:

```
import mysql.connector
import pandas as pd
import numpy as np
import math
import statistics as stat
import matplotlib.pyplot as plt
import seaborn as sns
import random
import warnings
warnings.filterwarnings('ignore')
%matplotlib inline
from getpass import getpass
from time import time

start = time()
```

GETTING USERNAME & PASSWORD FOR AWS MYSQL DB CONNECTION

```
print(" Connecting to the host 'lab-assignment-225.cibzfcia066j.us-east-1.rds.amazonaws.com' ")
global usrnm;
usrnm=input("Enter username to connect to the AWS MYSQL DB: ")
global pwd;
pwd=getpass("Enter password  to connect to the AWS MYSQL DB: ")
```

Enter the username and Password to connect to the AWS MYSQL DB:

```
print(" Connecting to the host 'lab-assignment-225.cibzfcia066j.us-east-1.rds.amazonaws.com' ")
global usrnm;
usrnm=input("Enter username to connect to the AWS MYSQL DB: ")
global pwd;
pwd=getpass("Enter password  to connect to the AWS MYSQL DB: ")
```

```
 Connecting to the host 'lab-assignment-225.cibzfcia066j.us-east-1.rds.amazonaws.com'
Enter username to connect to the AWS MYSQL DB: admin
Enter password  to connect to the AWS MYSQL DB: ········
```

SQL QUERIES EXECUTION

SCENARIO 1:

Displaying the no of customers present in each country:

```
from mysql.connector import connect, Error
try:
    with connect(host="lab-assignment-225.cibzfcia066j.us-east-1.rds.amazonaws.com",
            user=usrnm,  password=pwd,  database="sjsu_movie_db"
   ) as connection:
      sql1 = "select cust_country,count(*) from customer_details group by cust_country order by count(*)
desc;"
      with connection.cursor() as cur1:
         cur1.execute(sql1)
         country_wise_customer = pd. DataFrame (cur1. fetchall ())
except Error as e:
   print(e)
country_wise_customer.columns =['Country','Count']
country_wise_customer
```

SQL QUERY 1:

Display the No of customers present in each country

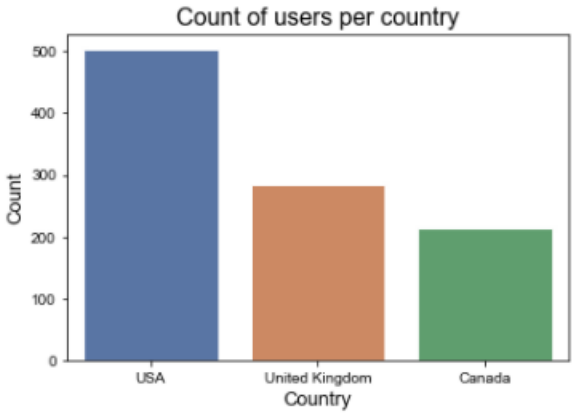
```
from mysql.connector import connect, Error

try:
     with connect(host="lab-assignment-225.cibzfcia066j.us-east-1.rds.amazonaws.com",
                  user=usrnm,
                  password=pwd,
                  database="sjsu_movie_db"
    ) as connection:
        sql1 = "select cust_country,count(*) from customer_details group by cust_country order by count(*) desc;"
        with connection.cursor() as cur1:
            cur1.execute(sql1)
            country_wise_customer = pd. DataFrame (cur1. fetchall ())
except Error as e:
    print(e)

country_wise_customer.columns =['Country','Count']
country_wise_customer
```

5]:

	Country	Count
0	USA	502
1	United Kingdom	285
2	Canada	214



SCENARIO 2:

Displaying the no of Movies released based on year:

```
from mysql.connector import connect, Error

try:
   with connect(host="lab-assignment-225.cibzfcia066j.us-east-1.rds.amazonaws.com",
            user=usrnm,
            password=pwd,
            database="sjsu_movie_db"
   ) as connection:
      sql2 = "select year,count(*) from Movie_data group by Year order by count(*) desc;;"
      with connection.cursor() as cur2:
         cur2.execute(sql2)
         Year_movie_count = pd. DataFrame (cur2. fetchall ())
except Error as e:
   print(e)

Year_movie_count.columns =['Release Year','Count of Movies Released']
Year_movie_count
```

SQL Query 2:

Display the No of Movies Released Based on Year

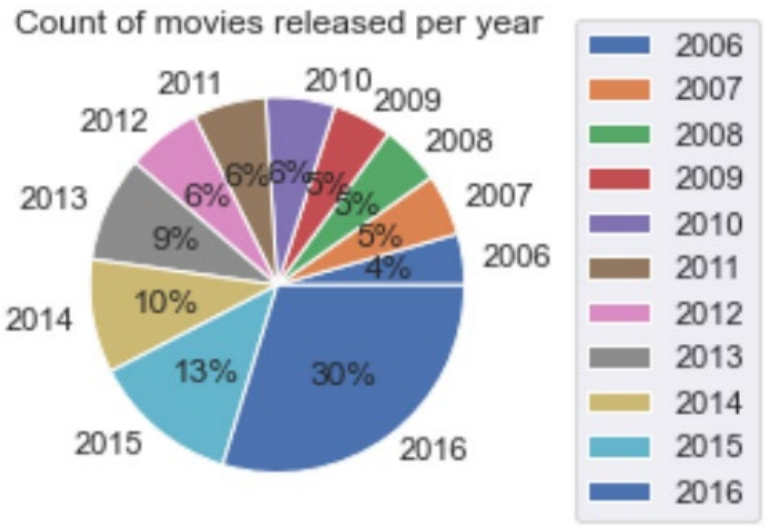
```
from mysql.connector import connect, Error

try:
    with connect(host="lab-assignment-225.cibzfcia066j.us-east-1.rds.amazonaws.com",
                 user=usrnm,
                 password=pwd,
                 database="sjsu_movie_db"
    ) as connection:
        sql2 = "select year,count(*) from Movie_data group by Year order by count(*) desc;;"
        with connection.cursor() as cur2:
            cur2.execute(sql2)
            Year_movie_count = pd. DataFrame (cur2. fetchall ())
except Error as e:
    print(e)

Year_movie_count.columns =['Release Year','Count of Movies Released']
Year_movie_count
```

7]:

	Release Year	Count of Movies Released
0	2016	297
1	2015	127
2	2014	98
3	2013	91
4	2012	64
5	2011	63
6	2010	60
7	2007	53
8	2008	52
9	2009	51
10	2006	44



SCENARIO 3:

Ranking the top 5 Employees who has responded to the most complaints

```
from mysql.connector import connect, Error

try:
   with connect(host="lab-assignment-225.cibzfcia066j.us-east-1.rds.amazonaws.com",
               user=usrnm,
               password=pwd,
               database="sjsu_movie_db"
   ) as connection:
      sql3 ="""\
         SELECT c.emp_id,CONCAT(e.emp_first_name,'',e.emp_middle_name,'',e.emp_last_name) AS 'Employee
Name',
         COUNT(complaint_id)
         FROM cust_complaints c JOIN employees e USING(emp_id) GROUP BY c.emp_id ORDER BY
          count(complaint_id) DESC LIMIT 5;
         """
      with connection.cursor() as cur3:
         cur3.execute(sql3)
         top_5_employee = pd. DataFrame (cur3. fetchall ())
except Error as e:
   print(e)


top_5_employee.columns =['Employee ID','Employee Name','Total complaints resolved']
top_5_employee
```

SQL Query 3:

Ranking the Top 5 Employees who has responded to the most complaints

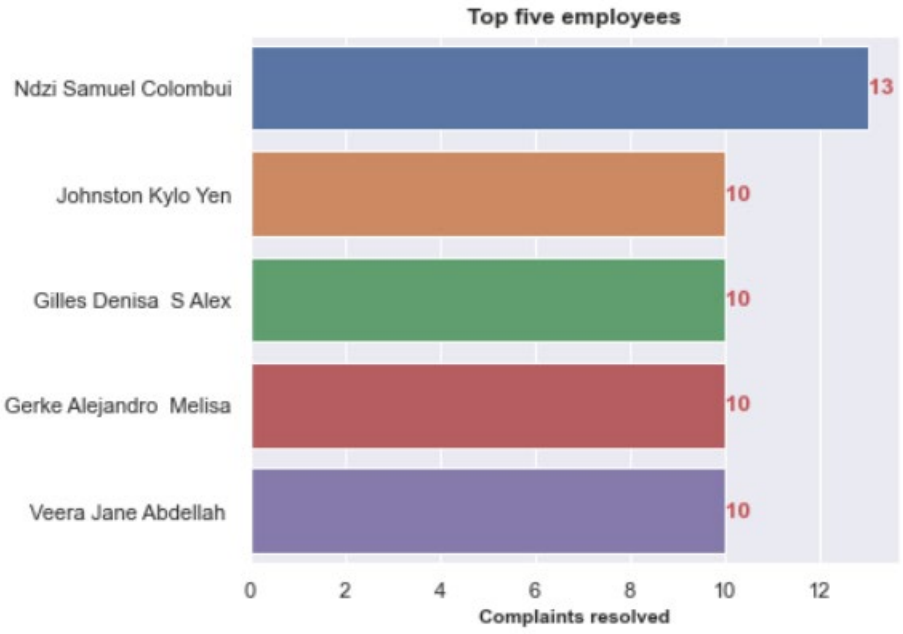
```
from mysql.connector import connect, Error

try:
    with connect(host="lab-assignment-225.cibzfcia066j.us-east-1.rds.amazonaws.com",
                 user=usrnm,
                 password=pwd,
                 database="sjsu_movie_db"
    ) as connection:
        sql3 ="""\
            SELECT c.emp_id,CONCAT(e.emp_first_name,'',e.emp_middle_name,'',e.emp_last_name) AS 'Employee Name',
            COUNT(complaint_id)
            FROM cust_complaints c JOIN employees e USING(emp_id) GROUP BY c.emp_id ORDER BY
             count(complaint_id) DESC LIMIT 5;
            """
        with connection.cursor() as cur3:
            cur3.execute(sql3)
            top_5_employee = pd. DataFrame (cur3. fetchall ())
except Error as e:
    print(e)


top_5_employee.columns =['Employee ID','Employee Name','Total complaints resolved']
top_5_employee
```

9]:

	Employee ID	Employee Name	Total complaints resolved
0	512211915	Ndzi Samuel Colombui	13
1	521004885	Johnston Kylo Yen	10
2	291255019	Gilles Denisa S Alex	10
3	283386581	Gerke Alejandro Melisa	10
4	615036329	Veera Jane Abdellah	10



SCENARIO 4:

Average time taken to close the tickets:

```
from mysql.connector import connect, Error

try:
   with connect(host="lab-assignment-225.cibzfcia066j.us-east-1.rds.amazonaws.com",
            user=usrnm,
            password=pwd,
            database="sjsu_movie_db"
   ) as connection:
      sql4 = """select
      sum(datediff(close_date,complaint_creation_date))/count(datediff(close_date,complaint_creation_date))
      as Avg_days_taken
      from cust_complaints where resolution_status='Closed'
      order by datediff(close_date,complaint_creation_date) desc;"""
      with connection.cursor() as cur4:
         cur4.execute(sql4)
         avg_time=cur4. fetchone ()
         print("Average Time Taken:\t",avg_time[0]," DAYS.")
except Error as e:
   print(e)
```

SQL Query 4:

Average time taken taken to close a ticket.

```
from mysql.connector import connect, Error

try:
    with connect(host="lab-assignment-225.cibzfcia066j.us-east-1.rds.amazonaws.com",
                 user=usrnm,
                 password=pwd,
                 database="sjsu_movie_db"
    ) as connection:
        sql4 = """select
        sum(datediff(close_date,complaint_creation_date))/count(datediff(close_date,complaint_creation_date))
        as Avg_days_taken
        from cust_complaints where resolution_status='Closed'
        order by datediff(close_date,complaint_creation_date) desc;"""
        with connection.cursor() as cur4:
            cur4.execute(sql4)
            avg_time=cur4. fetchone ()
            print("Average Time Taken:\t",avg_time[0]," DAYS.")
except Error as e:
    print(e)
```

```
Average Time Taken:      3.3673  DAYS.
```

SCENARIO 5:

Top 10 most watched movies in USA, UK and CANADA:

```
from mysql.connector import connect, Error

try:
   with connect(host="lab-assignment-225.cibzfcia066j.us-east-1.rds.amazonaws.com",
            user=usrnm,
            password=pwd,
            database="sjsu_movie_db"
   ) as connection:
      sql5 = """select c.cust_country,m.title,count(u.rank_id) as times_watched from user_watch_history u
      join Movie_data m on u.rank_id=m.rank_id join user_details ud on ud.user_id=u.user_id
      join customer_details c on c.customer_id=ud.customer_id
      group by c.cust_country,m.title order by cust_country,count(rank_id) desc;"""
      with connection.cursor() as cur5:
         cur5.execute(sql5)
         top_10_movies_country_wise = pd. DataFrame (cur5. fetchall ())
except Error as e:
   print(e)
top_10_movies_country_wise.columns =['Country','Title','Times Watched']
top_10_movies_country_wise.Country.unique()
movie_array=top_10_movies_country_wise.to_numpy()
canada_array=[]
UK_array=[]
USA_array=[]
for i in movie_array:
   if i[0]=='Canada':
      canada_array.append(i)
   elif i[0]=='United Kingdom':
      UK_array.append(i)
   elif i[0]=='USA':
      USA_array.append(i)
Canada_df = pd.DataFrame (canada_array, columns= ['Country', 'title','Times Watched'])
UK_df = pd.DataFrame (UK_array, columns= ['Country', 'title','Times Watched'])
USA_df = pd.DataFrame (USA_array, columns= ['Country', 'title','Times Watched'])
sorted_USA = USA_df.sort_values(by='Times Watched', ascending=False)
sorted_UK = UK_df.sort_values(by='Times Watched', ascending=False)
sorted_Canada = Canada_df.sort_values(by='Times Watched', ascending=False)
USA_Top_10=sorted_USA.head(10)
UK_Top_10=sorted_UK.head(10)
Canada_Top_10=sorted_Canada.head(10)
uk_top_10_movies=[]
usa_top_10_movies=[]
canada_top_10_movies=[]
uk_top_10_movies=UK_Top_10['title'].to_numpy()
usa_top_10_movies=USA_Top_10['title'].to_numpy()
canada_top_10_movies=Canada_Top_10['title'].to_numpy()
```

SQL Query 5:

TOP 10 Most watched movies in USA UK and Canada

```
from mysql.connector import connect, Error

try:
    with connect(host="lab-assignment-225.cibzfcia066j.us-east-1.rds.amazonaws.com",
                 user=usrnm,
                 password=pwd,
                 database="sjsu_movie_db"
    ) as connection:
        sql5 = """select c.cust_country,m.title,count(u.rank_id) as times_watched from user_watch_history u
        join Movie_data m on u.rank_id=m.rank_id join user_details ud on ud.user_id=u.user_id
        join customer_details c on c.customer_id=ud.customer_id
        group by c.cust_country,m.title order by cust_country,count(rank_id) desc;"""
        with connection.cursor() as cur5:
            cur5.execute(sql5)
            top_10_movies_country_wise = pd. DataFrame (cur5. fetchall ())
except Error as e:
    print(e)
```

```
top_10_movies_country_wise.columns =['Country','Title','Times Watched']
top_10_movies_country_wise.Country.unique()

```

3]: array(['Canada', 'United Kingdom', 'USA'], dtype=object)

```
movie_array=top_10_movies_country_wise.to_numpy()
canada_array=[]
UK_array=[]
USA_array=[]
for i in movie_array:
    if i[0]=='Canada':
        canada_array.append(i)
    elif i[0]=='United Kingdom':
        UK_array.append(i)
    elif i[0]=='USA':
        USA_array.append(i)

Canada_df = pd.DataFrame (canada_array, columns= ['Country', 'title','Times Watched'])
UK_df = pd.DataFrame (UK_array, columns= ['Country', 'title','Times Watched'])
USA_df = pd.DataFrame (USA_array, columns= ['Country', 'title','Times Watched'])

```

```
sorted_USA = USA_df.sort_values(by='Times Watched', ascending=False)
sorted_UK = UK_df.sort_values(by='Times Watched', ascending=False)
sorted_Canada = Canada_df.sort_values(by='Times Watched', ascending=False)
```

```
USA_Top_10=sorted_USA.head(10)
UK_Top_10=sorted_UK.head(10)
Canada_Top_10=sorted_Canada.head(10)
```

```
uk_top_10_movies=[]
usa_top_10_movies=[]
canada_top_10_movies=[]
uk_top_10_movies=UK_Top_10['title'].to_numpy()
usa_top_10_movies=USA_Top_10['title'].to_numpy()
canada_top_10_movies=Canada_Top_10['title'].to_numpy()

```

```
top_10_movies=pd.DataFrame()
top_10_movies['USA']=usa_top_10_movies
top_10_movies['UK']=uk_top_10_movies
top_10_movies['Canada']=canada_top_10_movies
top_10_movies.head(10)
```

	USA	UK	Canada
0	The Host	Rio	This Beautiful Fantastic
1	The Visit	Total Recall	The Magnificent Seven
2	The Blackcoat's Daughter	Selma	Evil Dead
3	A Million Ways to Die in the West	Warcraft	Sleeping with Other People
4	Blackhat	Friend Request	Carrie
5	Guardians of the Galaxy	The Headhunter's Calling	Bridge of Spies
6	Red Dawn	The Ugly Truth	The Boss
7	Mindhorn	Now You See Me 2	Everest
8	Silver Linings Playbook	American Pastoral	The Skin I Live In
9	Oculus	Pompeii	The Happening

SCENARIO 6:

Display how many screens are used by customers on average:

```
from mysql.connector import connect, Error

try:
  with connect(host="lab-assignment-225.cibzfcia066j.us-east-1.rds.amazonaws.com",
        user=usrnm,
        password=pwd,
        database="sjsu_movie_db"
  ) as connection:
    sql6 = """select round(sum(no_of_screens)/count(no_of_screens)) as avg_screens from
    (select customer_id,count(*) as 'no_of_screens' from user_details group by customer_id
    order by customer_id asc) t1;"""
    with connection.cursor() as cur6:
      cur6.execute(sql6)
      avg_screens=cur6. fetchone ()
      print("Average No of Screens used by customers:\t",avg_screens[0]," Screens.")
except Error as e:
  print(e)
```

SQL Query 6:

Display how many screens are used by customers on average

```
from mysql.connector import connect, Error

try:
    with connect(host="lab-assignment-225.cibzfcia066j.us-east-1.rds.amazonaws.com",
                 user=usrnm,
                 password=pwd,
                 database="sjsu_movie_db"
    ) as connection:
        sql6 = """select round(sum(no_of_screens)/count(no_of_screens)) as avg_screens from
        (select customer_id,count(*) as 'no_of_screens' from user_details group by customer_id
        order by customer_id asc) t1;"""
        with connection.cursor() as cur6:
            cur6.execute(sql6)
            avg_screens=cur6. fetchone ()
            print("Average No of Screens used by customers:\t",avg_screens[0]," Screens.")
except Error as e:
    print(e)
```

```
Average No of Screens used by customers:        3  Screens.
```

SCENARIO 7:

Total no of complaints recorded grouped by complaint category

```
from mysql.connector import connect, Error

try:
   with connect(host="lab-assignment-225.cibzfcia066j.us-east-1.rds.amazonaws.com",
            user=usrnm,
            password=pwd,
            database="sjsu_movie_db"
   ) as connection:
      sql7 = """
      select complaint_category,count(*) as 'Number of Complaints'
      from cust_complaints
      group by complaint_category
      order by count(*) asc;"""
      with connection.cursor() as cur7:
         cur7.execute(sql7)
         count_complaint_category = pd. DataFrame (cur7. fetchall ())
except Error as e:
   print(e)


count_complaint_category.columns =['Complaint Category','No of Complaints recorded']
count_complaint_category
```

SQL Query 7:

Display the Total No of complaints recorded grouped by Complaint Category

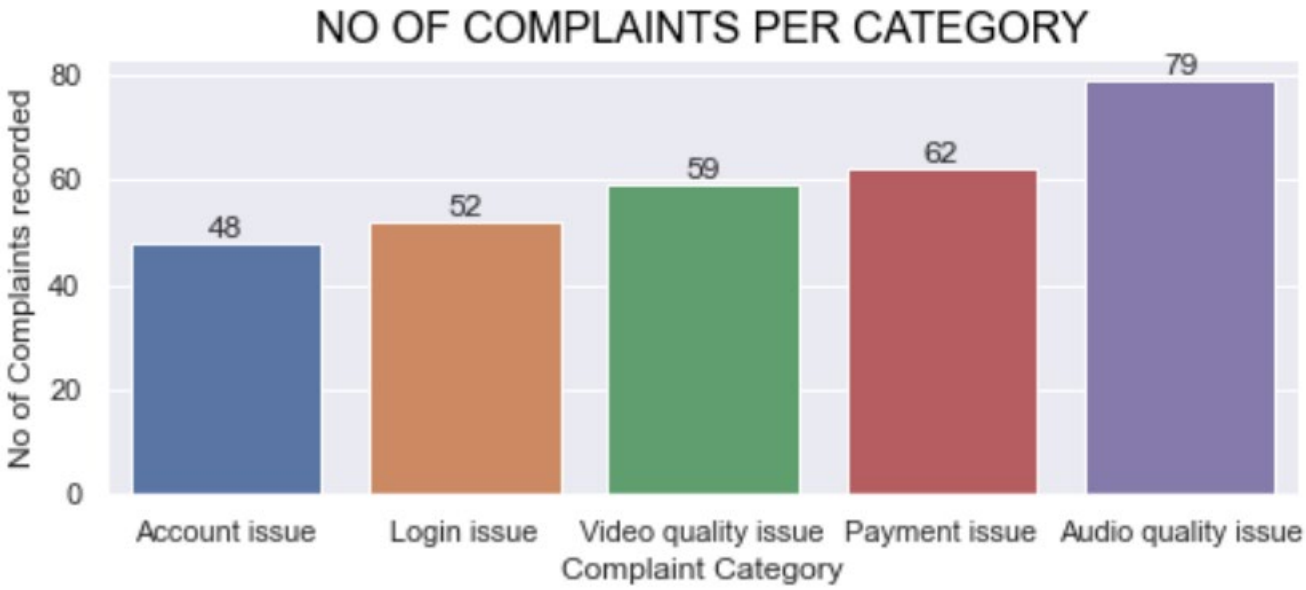
```
from mysql.connector import connect, Error

try:
    with connect(host="lab-assignment-225.cibzfcia066j.us-east-1.rds.amazonaws.com",
                 user=usrnm,
                 password=pwd,
                 database="sjsu_movie_db"
    ) as connection:
        sql7 = """
        select complaint_category,count(*) as 'Number of Complaints'
        from cust_complaints
        group by complaint_category
        order by count(*) asc;"""
        with connection.cursor() as cur7:
            cur7.execute(sql7)
            count_complaint_category = pd. DataFrame (cur7. fetchall ())
except Error as e:
    print(e)


count_complaint_category.columns =['Complaint Category','No of Complaints recorded']
count_complaint_category
```

]:

	Complaint Category	No of Complaints recorded
0	Account issue	48
1	Login issue	52
2	Video quality issue	59
3	Payment issue	62
4	Audio quality issue	79



SCENARIO 8:

Display total no of complaints closed per month:

```
from mysql.connector import connect, Error

try:
   with connect(host="lab-assignment-225.cibzfcia066j.us-east-1.rds.amazonaws.com",
            user=usrnm,
            password=pwd,
            database="sjsu_movie_db"
   ) as connection:
      sql8 = """select monthname(close_date) as closed_month,count(*) from cust_complaints
      where resolution_status='Closed' group by month(close_date) order by month(close_date) asc;"""
      with connection.cursor() as cur8:
         cur8.execute(sql8)
         tickets_closed = pd. DataFrame (cur8. fetchall ())
except Error as e:
   print(e)

tickets_closed.columns =['Month','No of Complaints Closed']
tickets_closed
```

SQL Query 8:

Display the Total No of Complaints Closed Per Month

```
from mysql.connector import connect, Error

try:
    with connect(host="lab-assignment-225.cibzfcia066j.us-east-1.rds.amazonaws.com",
                 user=usrnm,
                 password=pwd,
                 database="sjsu_movie_db"
    ) as connection:
        sql8 = """select monthname(close_date) as closed_month,count(*) from cust_complaints
        where resolution_status='Closed' group by month(close_date) order by month(close_date) asc;"""
        with connection.cursor() as cur8:
            cur8.execute(sql8)
            tickets_closed = pd. DataFrame (cur8. fetchall ())
except Error as e:
    print(e)

tickets_closed.columns =['Month','No of Complaints Closed']
tickets_closed
```

22]:

	Month	No of Complaints Closed
0	January	61
1	February	86

SCENARIO 9:

Display the total payments made per month:

```
from mysql.connector import connect, Error

try:
   with connect(host="lab-assignment-225.cibzfcia066j.us-east-1.rds.amazonaws.com",
            user=usrnm,
            password=pwd,
            database="sjsu_movie_db"
   ) as connection:
      sql9 = """SELECT DATE_FORMAT(payment_date, '%M, %y') AS payment_month,
      sum(total_amount) AS payment_per_month FROM invoice_details
      GROUP BY payment_month order by payment_month asc;"""
      with connection.cursor() as cur9:
         cur9.execute(sql9)
         month_amount = pd. DataFrame (cur9. fetchall ())
except Error as e:
   print(e)
month_amount.columns =['Payment Month','Amount']
month_amount['Amount']=pd.to_numeric(month_amount['Amount'])
month_amount
```

SQL Query 9:

Display the Total Payments Made Per Month

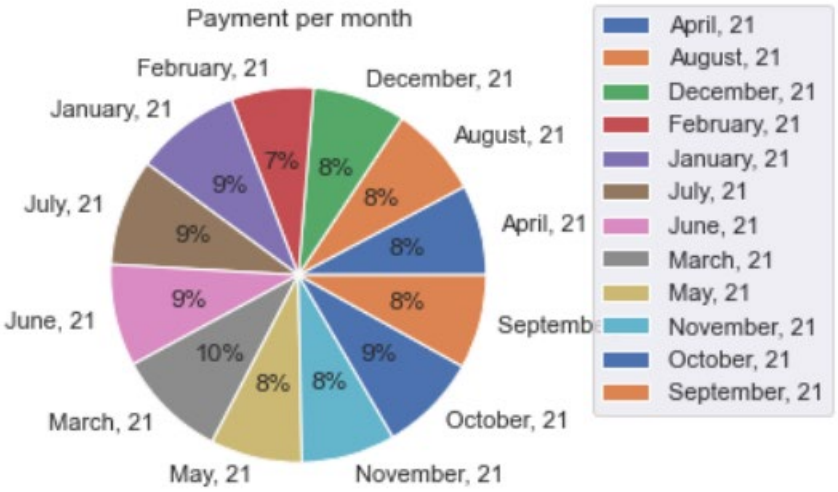
```
from mysql.connector import connect, Error

try:
    with connect(host="lab-assignment-225.cibzfcia066j.us-east-1.rds.amazonaws.com",
                 user=usrnm,
                 password=pwd,
                 database="sjsu_movie_db"
    ) as connection:
        sql9 = """SELECT DATE_FORMAT(payment_date, '%M, %y') AS payment_month,
        sum(total_amount) AS payment_per_month FROM invoice_details
        GROUP BY payment_month order by payment_month asc;"""
        with connection.cursor() as cur9:
            cur9.execute(sql9)
            month_amount = pd. DataFrame (cur9. fetchall ())
except Error as e:
    print(e)

month_amount.columns =['Payment Month','Amount']
month_amount['Amount']=pd.to_numeric(month_amount['Amount'])
month_amount
```

4]:

	Payment Month	Amount
0	April, 21	1556.10
1	August, 21	1576.05
2	December, 21	1596.00
3	February, 21	1416.45
4	January, 21	1815.45
5	July, 21	1835.40
6	June, 21	1755.60
7	March, 21	1895.25
8	May, 21	1576.05
9	November, 21	1615.95
10	October, 21	1695.75
11	September, 21	1615.95



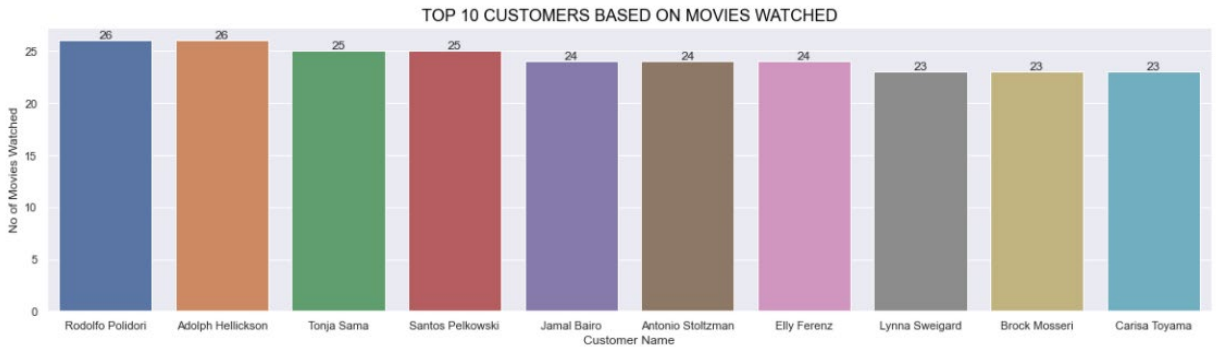
SCENARIO 10:

Top 10 customers based on the no of movies watched:

```
from mysql.connector import connect, Error

try:
   with connect(host="lab-assignment-225.cibzfcia066j.us-east-1.rds.amazonaws.com",
            user=usrnm,
            password=pwd,
            database="sjsu_movie_db"
   ) as connection:
      sql10 = """select concat(c.cust_first_name,' ',c.cust_last_name) as customer_name ,
      count(*) as no_of_movies_watched from user_watch_history u
      join user_details ud on u.user_id=ud.user_id
      join customer_details c on c.customer_id=ud.customer_id
      group by customer_name order by count(*) desc limit 10;"""
      with connection.cursor() as cur10:
         cur10.execute(sql10)
         top_10_cust = pd. DataFrame (cur10. fetchall ())
except Error as e:
   print(e)

top_10_cust.columns =['Customer Name','No of Movies Watched']
top_10_cust
```



SQL Query 10:

Top 10 customers based on the number of movies watched

```
from mysql.connector import connect, Error

try:
    with connect(host="lab-assignment-225.cibzfcia066j.us-east-1.rds.amazonaws.com",
                 user=usrnm,
                 password=pwd,
                 database="sjsu_movie_db"
    ) as connection:
        sql10 = """select concat(c.cust_first_name,' ',c.cust_last_name) as customer_name ,
        count(*) as no_of_movies_watched from user_watch_history u
        join user_details ud on u.user_id=ud.user_id
        join customer_details c on c.customer_id=ud.customer_id
        group by customer_name order by count(*) desc limit 10;"""
        with connection.cursor() as cur10:
            cur10.execute(sql10)
            top_10_cust = pd. DataFrame (cur10. fetchall ())
except Error as e:
    print(e)

top_10_cust.columns =['Customer Name','No of Movies Watched']
top_10_cust
```

5]:

	Customer Name	No of Movies Watched
0	Rodolfo Polidori	26
1	Adolph Hellickson	26
2	Tonja Sama	25
3	Santos Pelkowski	25
4	Jamal Bairo	24
5	Antonio Stoltzman	24
6	Elly Ferenz	24
7	Lynna Sweigard	23
8	Brock Mosseri	23
9	Carisa Toyama	23

SCENARIO 11:

Top 5 directors based on user watch history:

```
from mysql.connector import connect, Error

try:
  with connect(host="lab-assignment-225.cibzfcia066j.us-east-1.rds.amazonaws.com",
          user=usrnm,
          password=pwd,
          database="sjsu_movie_db"
  ) as connection:
    sql11 = """select m.director, count(*) from user_watch_history u join Movie_data m on m.rank_id=u.rank_id
    group by u.rank_id,director order by count(*) desc limit 5; """
    with connection.cursor() as cur11:
      cur11.execute(sql11)
      top_5_directors = pd. DataFrame (cur11. fetchall ())
except Error as e:
  print(e)

top_5_directors.columns =['Director Name','Total Movies watched by customers']
top_5_directors
```

SQL Query 11: ¶

Top 5 directors based on user watch history

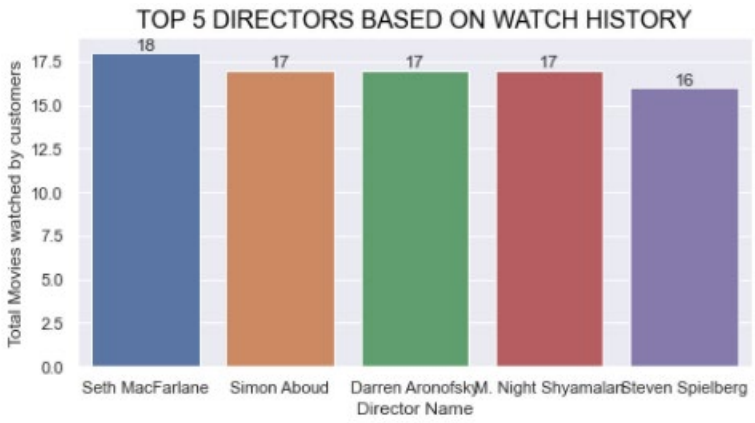
```
from mysql.connector import connect, Error

try:
    with connect(host="lab-assignment-225.cibzfcia066j.us-east-1.rds.amazonaws.com",
                 user=usrnm,
                 password=pwd,
                 database="sjsu_movie_db"
    ) as connection:
        sql11 = """select m.director, count(*) from user_watch_history u join Movie_data m on m.rank_id=u.rank_id
        group by u.rank_id,director order by count(*) desc limit 5; """
        with connection.cursor() as cur11:
            cur11.execute(sql11)
            top_5_directors = pd. DataFrame (cur11. fetchall ())
except Error as e:
    print(e)

top_5_directors.columns =['Director Name','Total Movies watched by customers']
top_5_directors
```

27]:

	Director Name	Total Movies watched by customers
0	Seth MacFarlane	18
1	Simon Aboud	17
2	Darren Aronofsky	17
3	M. Night Shyamalan	17
4	Steven Spielberg	16



SCENARIO 12:

Total no of complaints based on severity:

```
from mysql.connector import connect, Error
try:
   with connect(host="lab-assignment-225.cibzfcia066j.us-east-1.rds.amazonaws.com",
            user=usrnm,
            password=pwd,
            database="sjsu_movie_db"
   ) as connection:
      sql12 = "Select severity,count(*) as 'number of complaints' from cust_complaints group by severity; "
      with connection.cursor() as cur12:
         cur12.execute(sql12)
         count_severity = pd. DataFrame (cur12. fetchall ())
except Error as e:
   print(e)
count_severity.columns =['Severity level','No of complaints']
count_severity
```

SQL Query 12:

Total no of Complaints based on severity

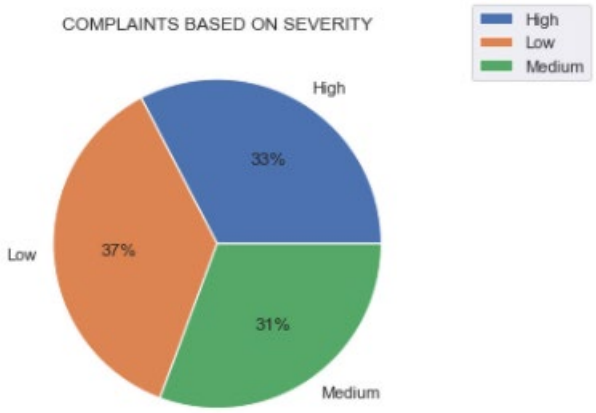
```
from mysql.connector import connect, Error

try:
    with connect(host="lab-assignment-225.cibzfcia066j.us-east-1.rds.amazonaws.com",
                 user=usrnm,
                 password=pwd,
                 database="sjsu_movie_db"
    ) as connection:
        sql12 = "Select severity,count(*) as 'number of complaints' from cust_complaints group by severity; "
        with connection.cursor() as cur12:
            cur12.execute(sql12)
            count_severity = pd. DataFrame (cur12. fetchall ())
except Error as e:
    print(e)

count_severity.columns =['Severity level','No of complaints']
count_severity
```

:9]:

	Severity level	No of complaints
0	Medium	92
1	Low	110
2	High	98



SCENARIO 13:

Display the average run time of movies:

```
from mysql.connector import connect, Error

try:
  with connect(host="lab-assignment-225.cibzfcia066j.us-east-1.rds.amazonaws.com",
          user=usrnm,
          password=pwd,
          database="sjsu_movie_db"
  ) as connection:
    sql13 = "select avg(runtime) from Movie_data ;"
    with connection.cursor() as cur13:
      cur13.execute(sql13)
      avg_runtime=cur13. fetchone ()
      print("Average runtime of the movies is:\t",avg_runtime[0]," mins.")
except Error as e:
  print(e)
```

SQL Query 13:

Display the Average runtime of movies

```
from mysql.connector import connect, Error

try:
    with connect(host="lab-assignment-225.cibzfcia066j.us-east-1.rds.amazonaws.com",
                 user=usrnm,
                 password=pwd,
                 database="sjsu_movie_db"
    ) as connection:
        sql13 = "select avg(runtime) from Movie_data ;"
        with connection.cursor() as cur13:
            cur13.execute(sql13)
            avg_runtime=cur13. fetchone ()
            print("Average runtime of the movies is:\t",avg_runtime[0]," mins.")
except Error as e:
    print(e)
```

```
Average runtime of the movies is:       113.1720  mins.
```

SCENARIO 14:

Display the total no of complaints registered per month:

```
from mysql.connector import connect, Error

try:
   with connect(host="lab-assignment-225.cibzfcia066j.us-east-1.rds.amazonaws.com",
            user=usrnm,
            password=pwd,
            database="sjsu_movie_db"
   ) as connection:
      sql14 = """Select date_format((complaint_creation_date),'%M'),count(*) as 'No of Complaints per Month'
      from cust_complaints group by month(complaint_creation_date);"""
      with connection.cursor() as cur14:
         cur14.execute(sql14)
         complaints_per_month = pd. DataFrame (cur14. fetchall ())
except Error as e:
   print(e)

complaints_per_month.columns =['Month','No of complaints']
complaints_per_month
```

SQL Query 14:

Display the Total No of complaints registered per month

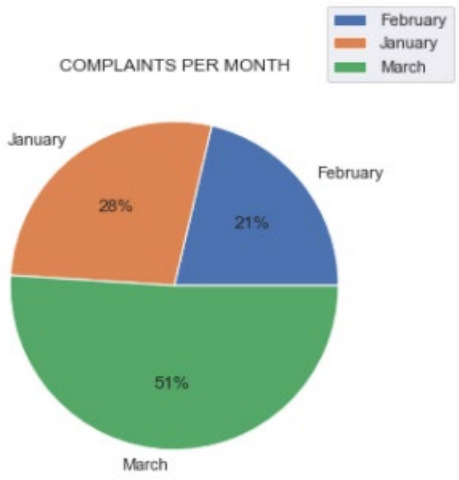
```
from mysql.connector import connect, Error

try:
    with connect(host="lab-assignment-225.cibzfcia066j.us-east-1.rds.amazonaws.com",
                 user=usrnm,
                 password=pwd,
                 database="sjsu_movie_db"
    ) as connection:
        sql14 = """Select date_format((complaint_creation_date),'%M'),count(*) as 'No of Complaints per Month'
        from cust_complaints group by month(complaint_creation_date);"""
        with connection.cursor() as cur14:
            cur14.execute(sql14)
            complaints_per_month = pd. DataFrame (cur14. fetchall ())
except Error as e:
    print(e)

complaints_per_month.columns =['Month','No of complaints']
complaints_per_month
```

2]:

	Month	No of complaints
0	January	83
1	February	64
2	March	153



SCENARIO 15:

Display the average salary of employees based on the designation:

```
from mysql.connector import connect, Error

try:
   with connect(host="lab-assignment-225.cibzfcia066j.us-east-1.rds.amazonaws.com",
            user=usrnm,
            password=pwd,
            database="sjsu_movie_db"
   ) as connection:
      sql15 = """\
         SELECT emp_position, AVG(emp_salary)
         FROM employees
         GROUP BY emp_position;
         """
      with connection.cursor() as cur15:
         cur15.execute(sql15)
         avg_salary = pd. DataFrame (cur15. fetchall ())
except Error as e:
   print(e)

avg_salary.columns =['Designation','Average Salary']
avg_salary
```

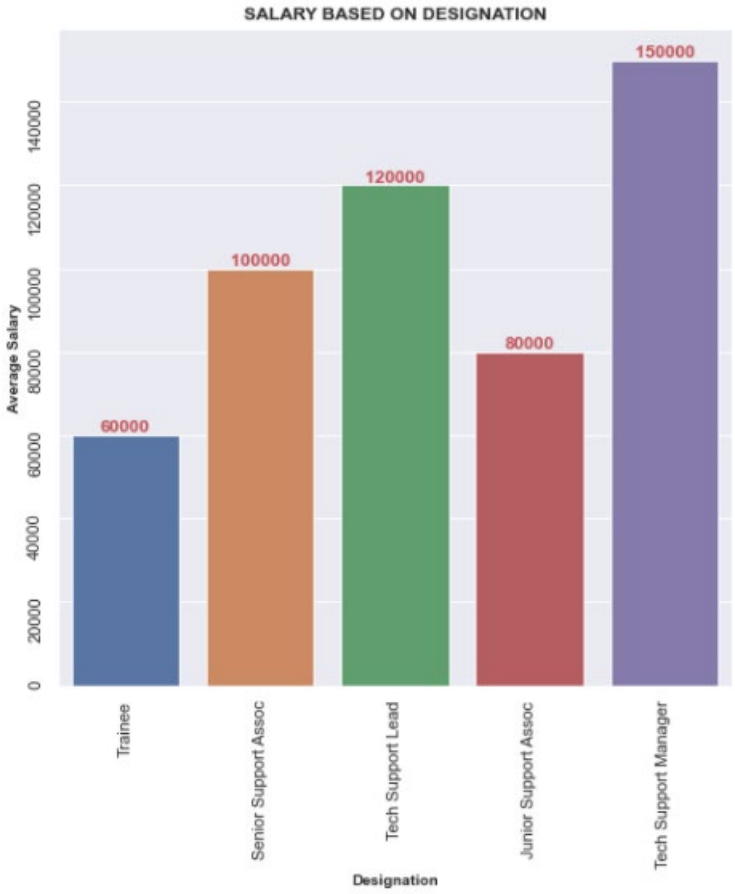
SQL Query 15:

Display the average salary of an Employee based on the designation

```
1  from mysql.connector import connect, Error
2
3  try:
4      with connect(host="lab-assignment-225.cibzfcia066j.us-east-1.rds.amazonaws.com",
5                   user=usrnm,
6                   password=pwd,
7                   database="sjsu_movie_db"
8      ) as connection:
9          sql15 = """\
10             SELECT emp_position, AVG(emp_salary)
11             FROM employees
12             GROUP BY emp_position;
13             """
14         with connection.cursor() as cur15:
15             cur15.execute(sql15)
16             avg_salary = pd. DataFrame (cur15. fetchall ())
17 except Error as e:
18     print(e)
19
20 avg_salary.columns =['Designation','Average Salary']
21 avg_salary
```

4]:

	Designation	Average Salary
0	Trainee	60000.0000
1	Senior Support Assoc	100000.0000
2	Tech Support Lead	120000.0000
3	Junior Support Assoc	80000.0000
4	Tech Support Manager	150000.0000



SCENARIO 16:

Display the total no of employees per designation based on employment status:

```
from mysql.connector import connect, Error

try:
   with connect(host="lab-assignment-225.cibzfcia066j.us-east-1.rds.amazonaws.com",
            user=usrnm,
            password=pwd,
            database="sjsu_movie_db"
   ) as connection:
      sql16 = """Select employment_status, emp_position, count(*) as 'Number of Employees'
      from employees group by emp_position,employment_status order by employment_status;"""
      with connection.cursor() as cur16:
         cur16.execute(sql16)
         no_of_emp = pd. DataFrame (cur16. fetchall ())
except Error as e:
   print(e)

no_of_emp.columns =['Employment Status','Designation','No of Employees']
no_of_emp
```

SQL Query 16:

Display the Total No of employess per designation based on employment status

```
from mysql.connector import connect, Error

try:
    with connect(host="lab-assignment-225.cibzfcia066j.us-east-1.rds.amazonaws.com",
                 user=usrnm,
                 password=pwd,
                 database="sjsu_movie_db"
    ) as connection:
        sql16 = """Select employment_status, emp_position, count(*) as 'Number of Employees'
        from employees group by emp_position,employment_status order by employment_status;"""
        with connection.cursor() as cur16:
            cur16.execute(sql16)
            no_of_emp = pd. DataFrame (cur16. fetchall ())
except Error as e:
    print(e)

no_of_emp.columns =['Employment Status','Designation','No of Employees']
no_of_emp
```

6]:

	Employment Status	Designation	No of Employees
0	Permanent Worker	Trainee	15
1	Permanent Worker	Senior Support Assoc	4
2	Permanent Worker	Junior Support Assoc	6
3	Permanent Worker	Tech Support Lead	3
4	Permanent Worker	Tech Support Manager	4
5	Termporary Worker	Trainee	5
6	Termporary Worker	Tech Support Lead	4
7	Termporary Worker	Senior Support Assoc	5
8	Termporary Worker	Tech Support Manager	2
9	Termporary Worker	Junior Support Assoc	2