Code

Import Packages:

```
import mysql.connector as ctr
import time
import pandas as pd
import matplotlib.pyplot as plt
```

Connection:

```
#establishment of connection
conn = ctr.connect(host = "localhost", user = "root", passwd = "", database =
"project")
#establishment of cursor instance
mycursor = conn.cursor()
#verification for the connection
if conn.is_connected():
  print('Connection Established Successfully!!')
```

Insert Data:

```
def insert_data():
  #inputs
  console_name = input("Enter the name of the console \n(XBOX, XONE, PS4, PC,
NS, 3DS, MAC, IOS, VITA, WIIU, ZOD, DS, WII, TG16, PS2, GBA, MOBI, PS, N64,
NGPC, SAT): ")
  print("\n")
  game_name = input("Enter the name of the video game: ")
  print("\n")
  review = input("Enter the review of the video game \n(Worst, Very Bad, Bad, Fair,
Good, Very Good, Great, Super, Excellent): ")
  print("\n")
  score = ''
  #to re-initialize the value of score and get the final review
  if review == 'Worst':
    score = 1
  elif review == 'Very Bad':
    score = 2
  elif review == 'Bad':
    score = 3
  elif review == 'Fair':
    score = 4
  elif review == 'Good':
```

```
        score = 5
    elif review == 'Very Good':
        score = 6
    elif review == 'Great':
        score = 7
    elif review == 'Super':
        score = 8
    elif review == 'Excellent':
        score = 9
    else:
        print('Invalid Input! \n')
    mycursor = conn.cursor()
    #query to insert data into the database
    qry = "INSERT into games(Console, GameName, Review,
Score)values('{}','{}','{}',{})".format(console_name, game_name, review, score)
    mycursor.execute(qry)
    conn.commit()
    print("Your video game and its review is added successfully!!\n\n")
```

<u>Update Data</u>:

```
def update_data():
    while True:
    #sub-menus
        print("---------- UPDATE MENU ----------")
        print("a) Update the console name")
        print("b) Update the video game name")
        print("c) Update the review and the score")
        print("d) Update all fields")
        print("e) Exit")
        print("------------------------------------------------------------------")

        choice = str(input("Enter a choice (a, b, c, d or e): "))
        print("\n")

        if choice == 'a':
            #inputs
            game_name1 = input("Enter an existing video game name: ")
            print("\n")
            console_name1 = input("Enter the associated console name:  \n(XBOX,
XONE, PS4, PC, NS, 3DS, MAC, IOS, VITA, WIIU, ZOD, DS, WII, TG16, PS2, GBA,
MOBI, PS, N64, NGPC, SAT): ")
            print("\n")
            new_cons1 = input("Enter a new console name: ")
            print("\n")
```

```
        #query to update the console name
        qry1 = "UPDATE games SET Console = %s WHERE GameName = %s AND
Console = %s"
        tup1 = (new_cons1, game_name1, console_name1)
        mycursor = conn.cursor()
        mycursor.execute(qry1, tup1)
        conn.commit()
        print("Your console name is updated successfully!!\n\n")

    elif choice == 'b':
        #inputs
        game_name2 = input("Enter an existing video game name: ")
        print("\n")
        console_name2 = input("Enter the associated console name:  \n(XBOX,
XONE, PS4, PC, NS, 3DS, MAC, IOS, VITA, WIIU, ZOD, DS, WII, TG16, PS2, GBA,
MOBI, PS, N64, NGPC, SAT): ")
        print("\n")
        new_game1 = input("Enter a new video game name:  ")
        print("\n")
        #query to update the game name
        qry2 = "UPDATE games SET GameName = %s WHERE GameName = %s
AND Console= %s"
        tup2 = (new_game1, game_name2, console_name2)
        mycursor = conn.cursor()
        mycursor.execute(qry2, tup2)
        conn.commit()
        print("Your video game name is updated successfully!!\n\n")

    elif choice == 'c':
        #inputs
        game_name3 = input("Enter an existing video game name: ")
        print("\n")
        console_name3 = input("Enter the associated console name:  \n(XBOX,
XONE, PS4, PC, NS, 3DS, MAC, IOS, VITA, WIIU, ZOD, DS, WII, TG16, PS2, GBA,
MOBI, PS, N64, NGPC, SAT): ")
        print("\n")
        new_review = input("Enter a new review \n(Worst, Very Bad, Bad, Fair, Good,
Very Good, Great, Super, Excellent): ")
        print("\n")
        #to re-initialize the value of score and get the final review
        new_score = 0
        if new_review == 'Worst':
            new_score = 1
        elif new_review == 'Very Bad':
```

```
            new_score = 2
        elif new_review == 'Bad':
            new_score = 3
        elif new_review == 'Fair':
            new_score = 4
        elif new_review == 'Good':
            new_score = 5
        elif new_review == 'Very Good':
            new_score = 6
        elif new_review == 'Great':
            new_score = 7
        elif new_review == 'Super':
            new_score = 8
        elif new_review == 'Excellent':
            new_score = 9
        else:
            print('Invalid Input! \n')
        mycursor = conn.cursor()
        #query to update review
        qry3 = "UPDATE games SET Review = %s WHERE GameName = %s AND
Console = %s"
        tup3 = (new_review, game_name3, console_name3)
        mycursor.execute(qry3, tup3)
        #query to update score
        qry4 = "UPDATE games SET Score = %s WHERE GameName = %s AND
Console = %s"
        tup4 = (new_score, game_name3, console_name3)
        mycursor.execute(qry4, tup4)
        conn.commit()
        print("Your review and score is updated successfully!!\n\n")

    elif choice == 'd':
        #inputs
        game_name5 = input("Enter an existing video game name: ")
        print("\n")
        new_game2 = input("Enter a new video game name: ")
        print("\n")
        console_name5 = input("Enter the associated console name:  \n(XBOX,
XONE, PS4, PC, NS, 3DS, MAC, IOS, VITA, WIIU, ZOD, DS, WII, TG16, PS2, GBA,
MOBI, PS, N64, NGPC, SAT): ")
        print("\n")
        new_cons2 = input("Enter a new console name: ")
        print("\n")
```

```
        new_review1 = input("Enter a new review \n(Worst, Very Bad, Bad, Fair,
Good, Very Good, Great, Super, Excellent): ")
        new_score1 = 0
        if new_review1 == 'Worst':
            new_score1 = 1
        elif new_review1 == 'Very Bad':
            new_score1 = 2
        elif new_review1 == 'Bad':
            new_score1 = 3
        elif new_review1 == 'Fair':
            new_score1 = 4
        elif new_review1 == 'Good':
            new_score1 = 5
        elif new_review1 == 'Very Good':
            new_score1 = 6
        elif new_review1 == 'Great':
            new_score1 = 7
        elif new_review1 == 'Super':
            new_score1 = 8
        elif new_review1 == 'Excellent':
            new_score1 = 9
        else:
            print('Invalid Input!')
        mycursor = conn.cursor()
        #query to update review, game name and console
        qry5 = "UPDATE games SET Review = %s, GameName = %s, Console = %s
WHERE GameName = %s AND Console = %s"
        tup5 = (new_review1, new_game2, new_cons2, game_name5,
console_name5)
        mycursor.execute(qry5, tup5)
        #query to update score
        qry6 = "UPDATE games SET Score = %s WHERE GameName = %s AND
Console = %s"
        tup6 = (new_score1, new_game2, new_cons2)
        mycursor.execute(qry6, tup6)
        conn.commit()
        print("All the fields are updated successfully!!\n\n")

    elif choice == 'e':
        break

    else:
        print("Invalid Choice!")
```

Delete Data:

```
def delete_data():
  #inputs
  game_name6 = input("Enter the video game name to be deleted: ")
  print("\n")
  console_name6 = input("Enter a new console name \n(XBOX, XONE, PS4, PC,
NS, 3DS, MAC, IOS, VITA, WIIU, ZOD, DS, WII, TG16, PS2, GBA, MOBI, PS, N64,
NGPC, SAT): ")
  print("\n")
  mycursor = conn.cursor()
  #query to delete the data of a video game from the database
  qry7 = "DELETE FROM games WHERE GameName = %s AND Console = %s;"
  tup7 = (game_name6, console_name6)
  mycursor.execute(qry7, tup7)
  conn.commit()
  print("The video game is deleted successfully!!\n\n")
```

Display Data:

```
def display_data():
   #sub-menus
   while True:
      print("\n---------- DISPLAY MENU ----------")
      print("a) View first 10 records")
      print("b) View last 10 records")
      print("c) View a specific record")
      print("d) Exit")
      print("----------------------------------------------------------------")

      choice = str(input("Enter an option (a, b, c or d): "))
      print("\n")

      if choice == 'a':
         mycursor = conn.cursor()
         #query
         mycursor.execute("SELECT * FROM games")
         dt1 = mycursor.fetchall()
         df = pd.DataFrame(dt1, columns = ['Console','GameName','Review', 'Score'])
         #query to print the first 10 rows
         print(df.head(10))

      elif choice == 'b':
         mycursor = conn.cursor()
         mycursor.execute("SELECT * FROM games")
         dt2 = mycursor.fetchall()
```

```
        df = pd.DataFrame(dt2, columns = ['Console','GameName','Review', 'Score'])
        #query to print the last 10 rows
        print(df.tail(10))

    elif choice =='c':
        game_name7 = str(input("Enter the video game name: "))
        print("\n")
        mycursor = conn.cursor()
        qry8 = "SELECT * FROM games WHERE GameName = %s"
        tup8 = (game_name7, )
        mycursor.execute(qry8, tup8)
        row1 = mycursor.fetchall()
        for i in row1:
            for j in i:
                if i[1] == game_name7:
                    print(j)

    elif choice == 'd':
        break

    else:
        print("Invalid Choice! \n")
```

Data Analysis:

```
def visualization():
  #sub-menus
  print("---------- VISUALIZATION MENU ----------")
  print("a) Horizontal Bar Graph for Score")
  print("b) Tabular Format for Representation of Consoles")
  print("c) Pie Chart for Reviews")
  print("d) Exit")
  print("-----------------------------------------------------------------")

  while True:
    choice = str(input("Enter an option (a, b, c or d): "))
    print("\n")

    if choice == 'a':
      #fetch score and its count from the database
      mycursor.execute("SELECT Score,count(*) from games group by Score")
      data1 = mycursor.fetchall()
      #insert score values into a list
      score_vis = []
```

```
        for i in data1:
            score_vis.append(i[0])
        #insert score's count values into a list
        score_count_vis = []
        for j in data1:
            score_count_vis.append(j[1])
        #creation horizontal bar graph
        plt.barh(score_vis, score_count_vis, color = "blue")
        plt.xlabel("Frequency")
        plt.ylabel("Score")
        plt.title("Frequency of Score for different video games: ")
        plt.show()
        conn.commit()

    elif choice == 'b':
        #fetch Reviews and its count from the database
        mycursor.execute("SELECT Console, count(*) from games group by
Console")
        data2 = mycursor.fetchall()
        print("Frequencies for Consoles: ")
        #query to print both the columns
        df = pd.DataFrame(data2, columns = ['Console Name','Count'])
        print(df)
        conn.commit()

    elif choice == 'c':
        #fetch Reviews and its count from the database
        mycursor.execute("SELECT Review, count(*) FROM games GROUP BY
Review")
        #creating resultset
        data2 = mycursor.fetchall()
        #insert Reviews into a list
        review_vis = []
        for i in data2:
            review_vis.append(i[0])
        #insert Review's count values into a list
        review_count_vis = []
        for j in data2:
            review_count_vis.append(j[1])
        #creation of pie-chart
        fig = plt.figure(figsize = (10, 7))
        plt.pie(review_count_vis, labels = review_vis, autopct='%1.2f%%')
        plt.show()
```

```
        elif choice == 'd':
            break

        else:
            print("Invalid Choice!\n")
```

Download Data:

```
def download_data():
  #query to select the entire table from the database
  qry9 = 'SELECT * from games'
  #using pandas and initializing the resultset to a variable
  results = pd.read_sql_query(qry9, conn)
  #command used to retrieve the database in the form of a csv file
  results.to_csv("output.csv", index=False)
  print("File downloaded successfully! The file is available in your notebook folder.
You can download the same. \n\n")
  conn.commit()
```

Main Menu:

```
t = time.localtime()
current_time = time.strftime("%H:%M:%S",t)
print("The current time is",current_time,"\n")
while True:
  print("---------- VIDEO GAMES DATA ANALYSIS & MANAGEMENT SYSTEM
----------")
  #menus
  print("1) Insert")
  print("2) Update")
  print("3) Delete")
  print("4) Display")
  print("5) Analysis")
  print("6) Download")
  print("7) Exit")
  print("-----------------------------------------------------------------")

  #user's choice
  ch = int(input("Enter a choice (1-7): "))
  print("\n")

  if ch == 1:
      insert_data()

  elif ch == 2:
      update_data()
```

```
elif ch == 3:
    delete_data()

elif ch == 4:
    display_data()

elif ch == 5:
    visualization()

elif ch == 6:
    download_data()

elif ch == 7:
    print("Thank You! See you soon.")
    break

else:
    print("Invalid Choice!")
```