



ST. ANSELM'S SR.SEC.SCHOOL

**A PROJECT REPORT
ON
SPOTIFY LISTENING HABITS**

**For
AISSCE 2023-24 Examination
[As a part of the Informatics Practices
Course (065)]**

**SUBMITTED BY
SHUBH DIXIT:**

**Under the Guidance of:
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CERTIFICATE

This is to certify that the Project Dissertation entitled **SPOTIFY LISTENING HABITS** is a debonair work done by **SHUBH DIXIT** class XII Session 2023-24 in partial fulfillment of CBSE's AISSCE Examination 2023 and has been carried out Under my direct supervision and guidance. This report or a similar report on the topic has not been submitted for any other examination and does not form a part of any other course undergone by the candidate.

.....
Vandana Rathore Ma'am

SHUBH DIXIT

Place:.....
Date:.....

ACKNOWLEDGEMENT

We embarked on this Project as a component of our XII-Informatics Practices curriculum. We endeavored to apply our extensive knowledge and experience, acquired through both academic study and the pandemic's impact. However, creating a software system is typically an intricate and time-intensive process that demands systematic scrutiny, visionary insight, and professional expertise during design and development.

Furthermore, developers always require the assistance and well wishes of those with significant experience and innovative ideas within their immediate circle. We express heartfelt appreciation to our **Vandana Rathore Ma'am** for guiding us throughout this project. Our Principal Fr. James T.M.I deserves sincere gratitude for providing valuable time and moral support in developing this software. Lastly, we would like to extend our deepest thanks to our parents for being a constant source of inspiration while allowing us the freedom necessary for successful completion of this software endeavor.

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Introduction

The software in question is a highly efficient and eco-friendly tool that streamlines the process of E-purchasing. It boasts an intuitive and user-friendly interface, which allows users to easily explore tours, travels, and hotels. To facilitate smooth interaction, it utilizes GUI programming over the network.

One of the key features of this project is its computerized database that is capable of producing different reports. Moreover, an application has been tied to the database for easy access and management. This makes it easier for users to keep track of their data and manage it efficiently.

What sets this software apart is its ease of use - minimal training is required to operate it effectively. As a result, it can be used as a powerful tool for automating online tours with ease. The coding and designing have been done using Net Beans IDE, while MySQL serves as the back-end RDBMS.

Overall, this software offers an all-in-one solution for E-purchasing while being environmentally friendly at the same time. With its user-friendly interface and powerful features, it is sure to become a valuable asset for those in the tourism industry looking to streamline their operations.

OBJECTIVE :

- 1. **User Behavior Analysis**: Investigate the listening habits of Spotify users, including how often they listen to music, the duration of their listening sessions, and the times and days they are most active.**

- 2. **Genre and Artist Preferences**: Determine the genres and artists that are most popular among Spotify users, helping to identify trends and preferences.**

- 3. **Playlist Creation and Duration**: Examine how users create and curate their playlists, exploring the factors that influence their choices and the extent to which they share their playlists.**

- 4. **Mood and Contextual Listening**: Understand how music is used in different contexts, such as workouts, relaxation, or party settings, and how users choose music to suit their moods.**

6. **Data Privacy and Security: Consider the implications of data privacy and security regarding user listening habits on the platform and offer recommendations for safeguarding user information.**

Theoretical Background :

1.WHAT IS CSV FILE ::

CSV, or Comma-Separated Values, is a simple and widely used file format for storing and exchanging tabular data. It is a plain text format that represents data as a series of values (cells) separated by commas (or other delimiter characters, such as semicolons, tabs, or spaces) and organized in rows and columns. Each line in a CSV file typically represents a single record or row, and each value within a line corresponds to a field or column in that record.

In this example, the first row represents the headers, indicating the names of the columns (Name, Age, Occupation). The subsequent rows contain the data, with each comma separating the values within a row. You can think of a CSV file as a simplified spreadsheet or database that can be easily created and edited using text editors or dedicated software.
CSV files are commonly used for various data-related tasks, such as:

2. WHAT IS PANDAS – SERIES AND DATAFRAME

Pandas Series:

A Pandas Series is a one-dimensional labeled array that can hold data of various types (e.g., numbers, strings, dates). It's like a column in a spreadsheet or a single column in a database table. Each element in a Pandas Series has a label or index, making it easy to perform data operations and analysis on the data. You can think of a Pandas Series as a single column in a table.

Pandas Data Frame:

A Pandas Data Frame is a two-dimensional, tabular data structure that consists of rows and columns. It's similar to a spreadsheet or a SQL table. Each column in a Data Frame is a Pandas Series, and all columns share the same index. Data Frames are versatile and suitable for various data manipulation and analysis tasks, including data cleaning, filtering,

grouping, and statistical analysis. They allow you to work with structured data effectively.

Requirement :

Hardware Requirements:

- **2 GB RAM or more**
- **8 GB HDD or more**
- **Standard IO devices**

Software Requirements:

- **Windows 7 or higher**
- **Net Beans IDE 8.0.2 or higher**
- **MySQL**

5. System Design & Development

MENU:

```
===== RESTART : C:\Users\HP\project\demo 1.py =====
-----Namaskar Aapka Swagat Hai-----
-----आइपो पारेयोजना-----
```

Do You Wanted To Continue The Program For Yes Type (1)1

1

MENU

- 1. Csv padhne ke liye
- 2. Manipulstion karne ke liye
- 3. Analysis
- 4. Ajeeb cheez dekhne ke liye
- 5.Sayo Nara

Aapane Kya Choose Kiya Hai

Code :

```
import pandas as pd
import matplotlib.pyplot as plt
import numpy as np
print("-----Namaskar Aapka Swagat Hai-----")
print("-----आइपो पारेयोजना-----")
y='p'
whil=int(input("Do You Wanted To Continue The Program For Yes Type (1)"))
while whil==1:
    print(whil)
    b=pd.read_csv("dataa1.csv")
    print("   MENU
        1. Csv padhne ke liye
        2. Manipulstion karne ke liye
        3. Analysis
        4. Ajeeb cheez dekhne ke liye
        5.Sayo Nara
        ")
```

1. Csv padhne ke liye

OUTPUT: FOR PURA DATA

Do You Wanted To Continue The Program For Yes Type (1)1
1

- MENU
1. Csv padhne ke liye
 2. Manipulstion karna ke liye
 3. Analysis
 4. Ajeeb cheez dekhne ke liye
 - 5.Sayo Nara

Aapane Kya Choose Kiya Hai1

- 1.Pura Data
- 2.Selective Data

Aapane Kya Choose Kiya Hai1

	Age	Gender	... preferred_pod_duration	pdv_variety_satisfaction
0	20-35	Female	Both	Ok
1	Dec-20	Male	Nan	Satisfied
2	35-60	Others	Both	Satisfied
3	20-35	Female	Nan	Ok
4	20-35	Female	Both	Ok
...
294	35-60	Female	Longer	Ok
295	35-60	Female	Longer	Satisfied
296	20-35	Female	Both	Dissatisfied
297	Dec-20	Female	Both	Ok
298	20-35	Female	Both	Satisfied

[299 rows x 20 columns]

CODE:

```
ch=int(input("Aapane Kya Choose Kiya Hai"))
#ch1=int(input("Aapane Kya Choose Kiya Hai"))
if ch==1 :
    print("")
    1.Pura Data
    2.Selective Data
    "")
    ch1=int(input("Aapane Kya Choose Kiya Hai"))
    if ch1==1:
        a=pd.read_csv("dataaa.csv")

        print(a)
    else :
```

OUTPUT: FOR SELECTIVE DATA:

Aapane Kya Choose Kiya Hai1

- 1.Pura Data
- 2.Selective Data

Aapane Kya Choose Kiya Hai2

Age ... Energy- The energy of a song

0	20-35	...	89
1	20-35	...	93
2	35-60	...	84
3	20-35	...	92
4	20-35	...	84
5	20-35	...	86
6	20-35	...	78
7	20-35	...	76
8	20-35	...	37
9	20-35	...	72
10	20-35	...	87
11	20-35	...	83
12	20-35	...	82
13	20-35	...	83
14	20-35	...	84
15	20-35	...	75
16	20-35	...	61
17	20-35	...	81
18	20-35	...	80
19	20-35	...	61
20	20-35	...	63
21	20-35	...	68
22	20-35	...	68
23	20-35	...	81
24	20-35	...	95
25	20-35	...	83
26	20-35	...	90
27	35-60	...	94
28	20-35	...	80

[29 rows x 24 columns]

1

CODE:

```
ch=int(input("Aapane Kya Choose Kiya Hai"))
#ch1=int(input("Aapane Kya Choose Kiya Hai"))
if ch==1 :
    print("")
1.Pura Data
2.Selective Data
    ")
ch1=int(input("Aapane Kya Choose Kiya Hai"))
if ch1==1:
    a=pd.read_csv("dataaa.csv")

    print(a)
else :
```

3.

2. MANIPULATION KARNE KE LIYE

MENU

1. Csv padhne ke liye
2. Manipulstion karne ke liye
3. Analysis
4. Ajeeb cheez dekhne ke liye
5. Sayo Nara

Aapane Kya Choose Kiya Hai?

1. Add Row
2. Add Columns
3. Delete Row
4. Delete Columns

Aapane Kya Choose Kiya Hai

A. ADD ROW: CODE FOR ADD ROW:

```
ch1=int(input("Aapane Kya Choose Kiya Hai"))
if ch1==1:
    l=[]
    for i in b.columns:

#asking values from user
    print(i)
    val=input("enter value")
    l.append(val)
    b.loc[31]=l
    print(b)
```

OUTPUT:

```
Aapne Kya Choose Kiya Hai1
Age
enter value16
Gender
enter valueMAle
spotify_usage_period
enter value12
Unnamed: 3
enter value12
spotify_listening_device
enter value34
spotify_listening_device.1
enter value56
spotify_subscription_plan
enter value34
premium_sub_willingness
enter value23
preferred_premium_plan
enter value66
preferred_listening_content
enter value45
fav_music_genre
enter valuegh
music_time_slot
enter valuer
music_Influencial_mood
enter valuefh
music_lis_frequency
enter valueghgh
music_expl_method
enter value45
music_recc_rating
```

B. ADD COLUMNS

CODE FOR ADD COLUMNS

```
if ch1==2 :  
  
    c=input("enter the name of columns")  
    for i in b.index :  
        l=[]  
        print(i)  
        val=input("enter the value")  
        l.append(val)  
        b[c]=l  
    print(b)
```

OUTPUT:

```
Aapane Kya Choose Kiya Hai2
enter the name of columnsfff
0
enter the value23
1
enter the value33
2
enter the value22
3
enter the value
4
enter the value3
5
enter the value33
6
enter the value3
7
enter the value3
8
enter the value3
9
enter the value3
103
enter the value
11
3enter the value
12
enter the value3
13
3enter the value
14
enter the value3
15
enter the value3
16
enter the value3
17
enter the value3
```

C. DELETE ROW; CODE FOR DELETE ROW

```
if ch1==3:
    a=int(input("Write the Index of row to Delete ,Index are 1 to 30"))
    d=b.drop(a,axis=0)
    print(d)
```

Output:

Aapane Kya Choose Kiya Hai2

- 1.Add Row
- 2.Add Columns
- 3.Delete Row
- 4.Delete Columns

Aapane Kya Choose Kiya Hai3

Write the Index of row to Delete ,Index are 1 to 303

Age ... Energy- The energy of a song

0	20-35	...	89
1	20-35	...	93
2	35-60	...	84
4	20-35	...	84
5	20-35	...	86
6	20-35	...	78
7	20-35	...	76
8	20-35	...	37
9	20-35	...	72
10	20-35	...	87
11	20-35	...	83
12	20-35	...	82
13	20-35	...	83
14	20-35	...	84
15	20-35	...	75
16	20-35	...	61
17	20-35	...	81
18	20-35	...	80
19	20-35	...	61
20	20-35	...	63
21	20-35	...	68
22	20-35	...	68
23	20-35	...	81
24	20-35	...	95
25	20-35	...	83
26	20-35	...	90
27	35-60	...	94
28	20-35	...	80

D. Delete Columns: CODE FOR DELETE COLUMNS

```
else :  
    a=int(input("Write the Index of row to Delete,Index are 1 to 20"))  
    c=b.drop(a,axis=1)  
    print(c)
```

OUTPUT:

Aapane Kya Choose Kiya Hai4

Write the Index of row to Delete,Index are 1 to 205

Age ... Energy- The energy of a song

0	20-35	...	89
1	20-35	...	93
2	35-60	...	84
3	20-35	...	92
4	20-35	...	84
6	20-35	...	78
7	20-35	...	76
8	20-35	...	37
9	20-35	...	72
10	20-35	...	87
11	20-35	...	83
12	20-35	...	82
13	20-35	...	83
14	20-35	...	84
15	20-35	...	75
16	20-35	...	61
17	20-35	...	81
18	20-35	...	80
19	20-35	...	61
20	20-35	...	63
21	20-35	...	68
22	20-35	...	68
23	20-35	...	81
24	20-35	...	95
25	20-35	...	83
26	20-35	...	90
27	35-60	...	94
28	20-35	...	80

[28 rows x 24 columns]

4. ANALYSIS:

```
#Analysis
if ch==3 :
    print(""
        1.To Display The First Five Rows
        2.To Display The First Five Columns
        3.To Display The Last Five Rows
        4.To Display The Last Five Columns
        5.To Display The Size ,Shape
        6.To Display The Index
        7.To Display The Largest Number
        8.To Display The Lowest Number
    ")
ch3=int(input("Aapane Kya Choose Kiya Hai"))
if ch3==1 :
    print("The First Five Row Are ")
    print(b.head())
if ch3==2 :
    print("The First Five Columns Are")
    print(b.count())
if ch3==3 :
    print("The Last Five Row Are ")
    print(b.tail())
if ch3==4 :
    print("The Last Five Row Are ")
    print(b.tail())
if ch3==5 :
    a=input("Aapko Kya Dekhna Hai Size,Shape")
    if a=="Size" :
        print("The Size OF Data of Spotify",b.size)
    else :
        print("The Shape OF Data of spotify",b.shape)
if ch3==6:
    print("The Index OF Data of spotify",b.index)
```

Aapane Kya Choose Kiya Hai1

The First Five Row Are

Age ... Energy- The energy of a song

0	20-35	...	89
1	20-35	...	93
2	35-60	...	84
3	20-35	...	92
4	20-35	...	84

[5 rows x 24 columns]

```

Aapane Kya Choose Kiya Hai2
The First Five Columns Are
Age 29
Gender 29
spotify_usage_period 29
Unnamed: 3 0
spotify_listening_device 29
spotify_listening_device.1 29
spotify_subscription_plan 29
premium_sub_willingness 29
preferred_premium_plan 10
preferred_listening_content 29
fav_music_genre 29
music_time_slot 29
music_Influencial_mood 29
music_lis_frequency 29
music_expl_method 29
music_recc_rating 29
pod_lis_frequency 29
fav_pod_genre 16
preferred_pod_format 16
pod_host_preference 15
preferred_pod_duration 16
pod_variety_satisfaction 29
Beats.Per.Minute -The tempo of the song 29
Energy- The energy of a song 29
dtype: int64

```

Aapane Kya Choose Kiya Hai3

The Last Five Row Are

Age	...	Energy- The energy of a song	
24	20-35	...	95
25	20-35	...	83
26	20-35	...	90
27	35-60	...	94
28	20-35	...	80

[5 rows x 24 columns]

Aapane Kya Choose Kiya Hai4

The Last Five Row Are

Age	...	Energy- The energy of a song	
24	20-35	...	95
25	20-35	...	83
26	20-35	...	90
27	35-60	...	94
28	20-35	...	80

[5 rows x 24 columns]

Aapane Kya Choose Kiya Hai5
Apko Kya Dekhna Hai Size,ShapeSize
The Size OF Data of Spotify 696

1

MENU

1. Csv padhne ke liye
2. Manipulstion karne ke liye
3. Analysis
4. Ajeeb cheez dekhne ke liye
- 5.Sayo Nara

Aapane Kya Choose Kiya Hai3

- 1.To Display The First Five Rows
- 2.To Display The First Five Columns
- 3.To Display The Last Five Rows
- 4.To Display The Last Five Columns
- 5.To Display The Size ,Shape
- 6.To Display The Index
- 7.To Display The Larged Number
- 8.To Display The Lowest Number

Aapane Kya Choose Kiya Hai5
Apko Kya Dekhna Hai Size,Shapeshape
The Shape OF Data of spotify (29, 24)

Aapane Kya Choose Kiya Hai6
The Index OF Data of spotify RangeIndex(start=0, stop=29, step=1)

1

5.AJEEB CHEEZ DEKHNE KE LIYA

MENU

1. Csv padhne ke liye
2. Manipulstion karne ke liye
3. Analysis
4. Ajeeb cheez dekhne ke liye
- 5.Sayo Nara

Aapane Kya Choose Kiya Hai4

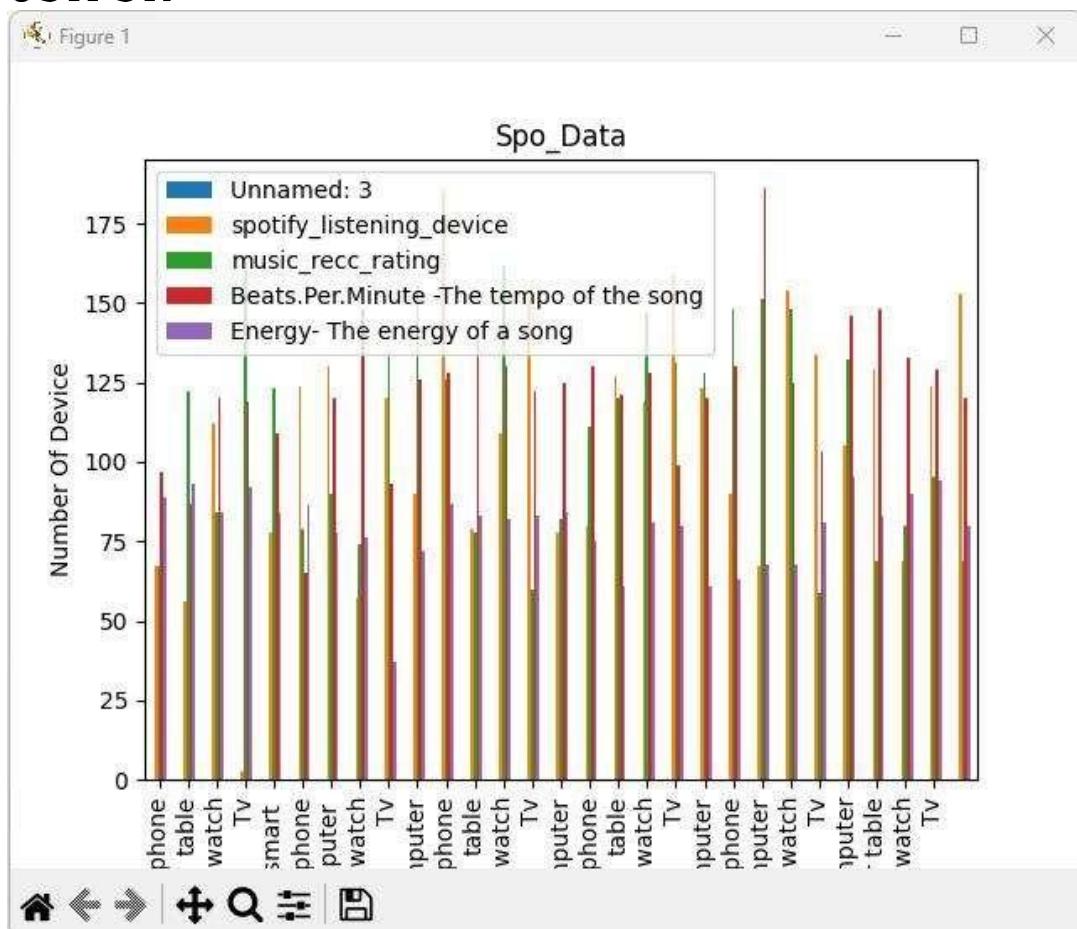
- 1.Bar Chart
- 2.Line Chart
- 3.Histogram
- 4.Pie chart

A. Bar Chart

CODE FOR BAR CHART:

```
if ch4==4 :  
    print("")  
    1.Bar Chart  
    2.Line Chart  
    3.Histogram  
    4.Pie chart  
    ")  
  
ch4=int(input("Aapane Kya Choose Kiya Hai"))  
if ch4==1:  
    x=np.arange(28)  
    a=[ "Smartphone","table","Smart watch","Tv","smart ","Smartphone","computer ","Smart watch","Tv","computer","Smartphone","table","Smart watch","Tv","computer","Smartphone","table","Smart watch"  
    de=[4,2,2,3,1,6,1,7,1,9,2,7,9,5,4,8,2,1,5,1,9,5,3,6,1,2,4,2,5]  
    b.plot(kind="bar",linestyle="--", linewidth=6)  
    plt.xlabel("Device User In Family")  
    plt.ylabel("Number Of Device")  
    plt.title("Spo_Data")  
    plt.xticks(x,a)  
    plt.show()  
  
if ch4==2:  
    pass
```

OUTPUT:

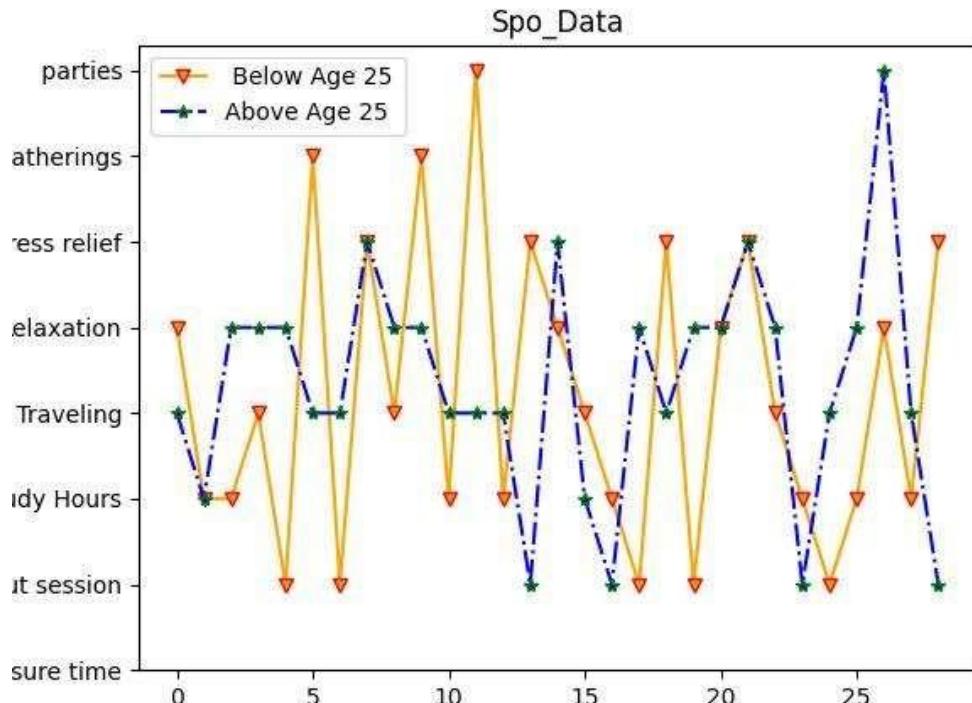
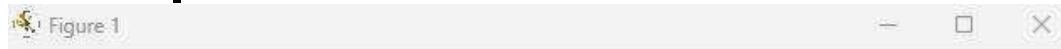


LINE CHART

CODE FOR LINE CHART

```
if ch4==2:  
    x=np.arange(8)  
    o=["leisure time","Workout session","Study Hours", " While Traveling","Relaxation"," stress relief","Social gatherings"," parties"]  
    print("Line Chart")  
    de=[4,2,2,3,1,6,1,5,3,6,2,7,2,5,4,3,2,1,5,1,4,5,3,2,1,2,4,2,5]  
    rec=[3,2,4,4,4,3,3,5,4,4,3,3,3,1,5,2,1,4,3,4,4,5,4,1,3,4,7,3,1]  
    plt.plot(de,marker='v',markeredgecolor="red",color="orange",label=" Below Age 25")  
    plt.plot(rec,marker='*',markeredgecolor="Green",color="blue",label="Above Age 25 ",linestyle="dashdot")  
    plt.ylabel("music lis_frequency")  
    plt.title("Spo_Data")  
    plt.legend()  
    plt.yticks(x,o)  
    plt.show()
```

OUTPUT :

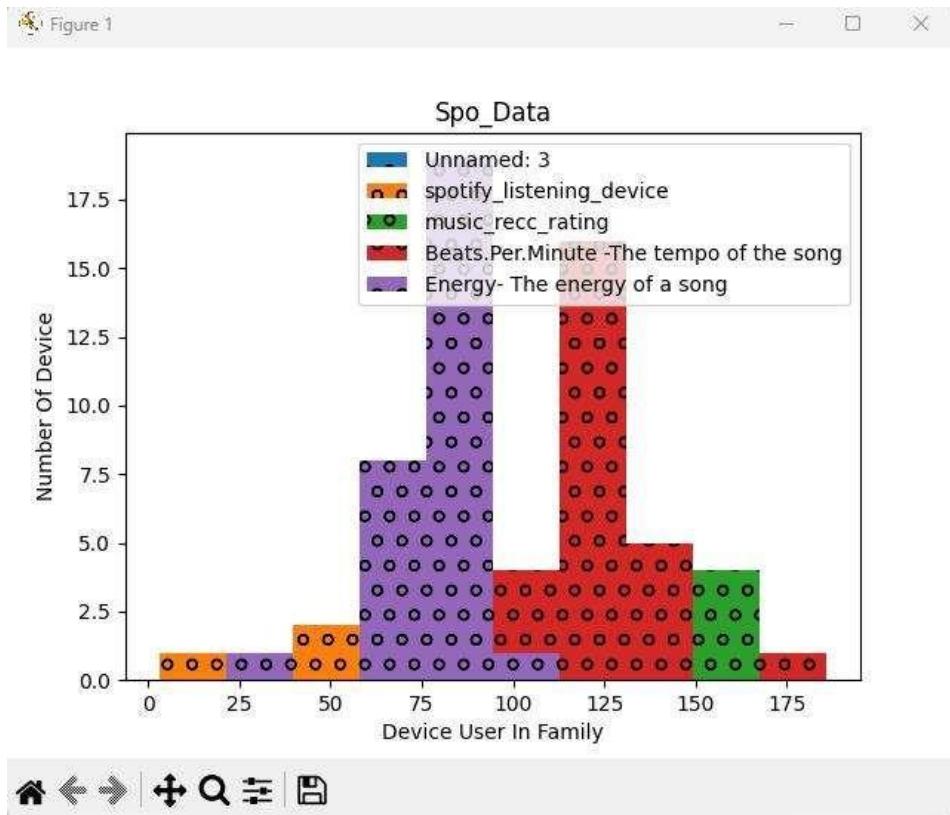


C . HISTOGRAM

CODE FOR HISTOGRAM

```
if ch4==3:  
    print("Histogram")  
    b.plot(kind="hist",hatch="o",linestyle=":")  
    plt.xlabel("Device User In Family")  
    plt.ylabel("Number Of Device")  
    plt.title("Spo_Data")  
    plt.show()
```

OUTPUT :



D . PIE CHART : CODE FOR PIE CHART:

```
if ch4==4 :  
  
    print("")  
    1.spotify_listening_device  
    2.music_recc_rating  
    3.Beats.Per.Minute -The tempo of the song  
    4.Energy- The energy of a song  
    "")  
ch3=int(input("Aapane Kya Choose Kiya Hai"))  
if ch3==1:  
    b.plot(kind="pie",y="spotify_listening_device")  
    plt.show()  
if ch3==2:  
    b.plot(kind="pie",y="music_recc_rating")  
    plt.show()  
if ch3==3:  
    b.plot(kind="pie",y="Beats.Per.Minute -The tempo of the song")  
    plt.show()  
if ch3==4:  
    b.plot(kind="pie",y="Energy- The energy of a song")  
    plt.show()
```

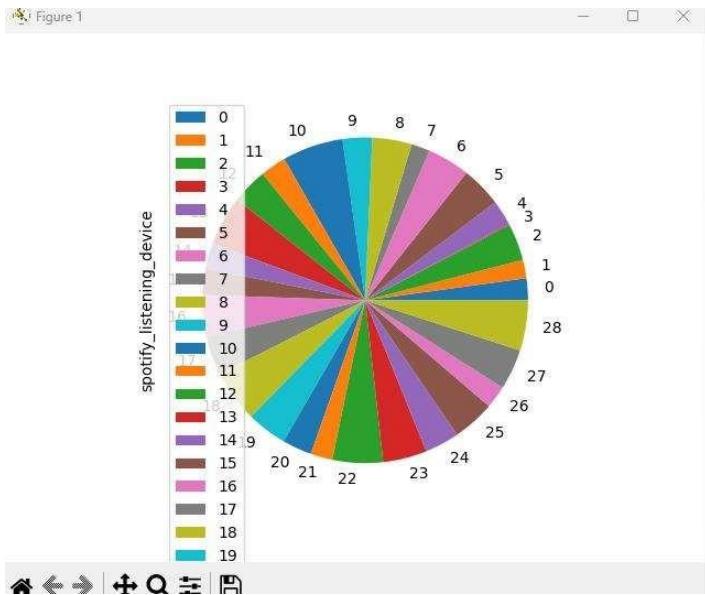
Aapane Kya Choose Kiya Hai4

1.spotify_listening_device
2.music_recc_rating
3.Beats.Per.Minute -The tempo of the song
4.Energy- The energy of a song

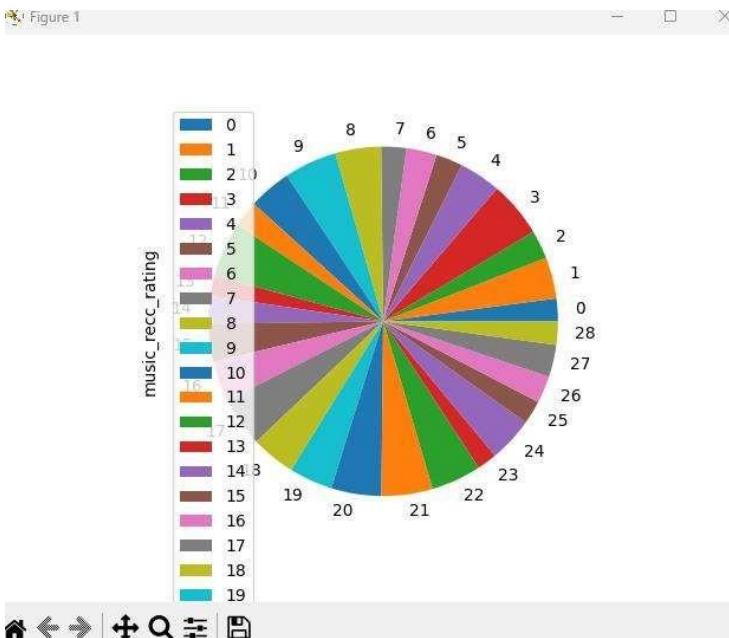
Aapane Kya Choose Kiya Hai

OUTPUT:

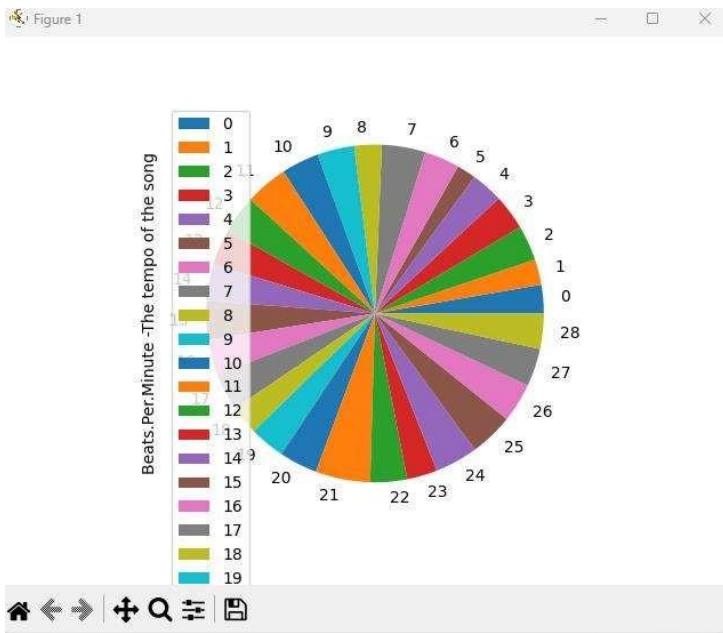
1.spotify_listening_device



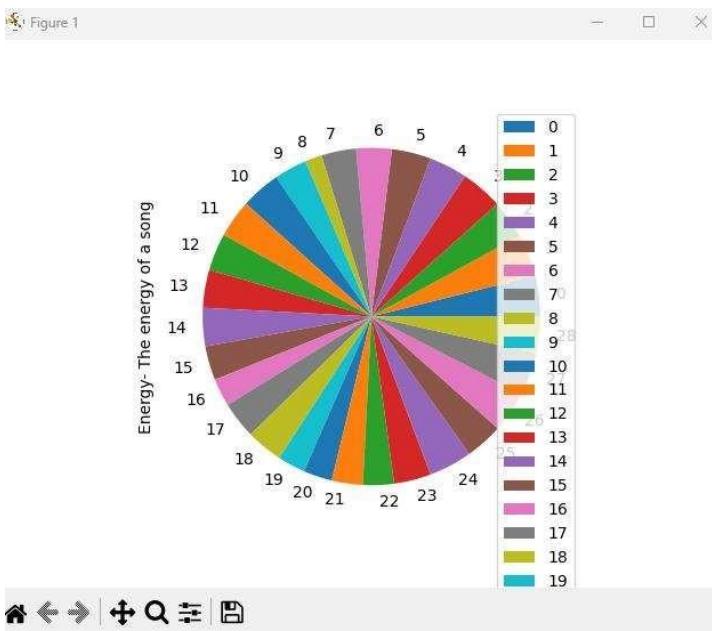
2.music_recc_rating



3.Beats.Per.Minute -The tempo of the song



4. Energy- The energy of a song



5.SAYO NARA: CODE FOR SAYO NARA

Do You Wanted To Continue The Program For Yes Type (1)1

1

MENU

1. Csv padhne ke liye
2. Manipulstion karne ke liye
3. Analysis
4. Ajeeb cheez dekhne ke liye
5. Sayo Nara

Aapane Kya Choose Kiya Hai5
Thank You For The Killing Of Program

OUTPUT:



6. References

In order to work on this project the following books and literature are referred by me during the various phases of development of the project

<http://www.Python.org/>

<https://www.spotify.com/>

<http://www.makemytrip.com/>

**the suggestions and supervision of my
teacher and my class experience also
helped me to develop this software
project**