Data & Visual Analytics

1. Aim: Implement ROLLUP & CUBE Operations on the following table

COLUMN NAME	DATA TYPE	SIZE
PET_TYPE	VARCHAR2	15
STORE	VARCHAR2	15
NO	NUMBER	15

Query:

```
create table pet(pet_type varchar(15),store varchar(15),no number(15));
```

Output:

Table Created.

Query:

```
insert into pet values('cat','miami',18);
insert into pet values('dog', 'miami',12);
insert into pet values('dog', 'tampa',14);
insert into pet values('turtle', 'tampa',4);
insert into pet values('dog', 'naples',5);
insert into pet values('turtle', 'naples',1);
```

Output:

1 row(s) inserted.
1 row(s) inserted.
1 row(s) inserted.
1 row(s) inserted.
1 row(s) inserted.
1 row(s) inserted.

Query:

```
select * from pet;
```

Output:

pet_type	store	no
cat	miami	18
dog	miami	12
dog	tampa	14
turtle	tampa	4
dog	naples	5
turtle	naples	1

1. **Cube**

Query:

select pet_type, store, sum(no) from pet group by cube(pet_type, store);

Output:

PET_TYPE	STORE	SUM(NO)
-	-	54
-	miami	30
-	tampa	18
-	naples	6
cat	-	18
cat	miami	18
dog	-	31
dog	miami	12
dog	tampa	14
dog	naples	5
turtle	-	5
turtle	tampa	4
turtle	naples	1

13 rows selected.

2. **Rollup**

Query:

select pet_type, store, sum(no) from pet group by rollup(pet_type, store);

Output:

PET_TYPE	STORE	SUM(NO)
cat	miami	18
cat	-	18
dog	miami	12
dog	tampa	14
dog	naples	5
dog	-	31
turtle	tampa	4
turtle	naples	1
turtle	-	5
-	-	54

10 rows selected.

Data for 2, 3, 4 & 5:

```
create table customer(cust_id varchar2(20), cust_name varchar2(20), cust_city varchar2(20), cust_state varchar2(20), cust_country varchar2(20), cust_age number(3), cust_income number(9,3), primary key(cust_id));
insert into customer values('C1','MANIDEEP','GUNTUR','AP','INDIA',23,35000);
insert into customer values('C2','MADHU','ONGOLE','AP','INDIA',23,40000);
insert into customer values('C3','ARUNBABU','GUNTUR','AP','INDIA',23,26000);
insert into customer values('C4','RAKESH','BENGALORE','KARNATAKA','INDIA',24,25000);
insert into customer values('C5','SHIRAJ','CHENNAI','TN','INDIA',25,38000);
create table item(item_id varchar2(20), item_name varchar2(20), item_brand varchar2(20), item_type varchar2(20), primary key (item_id));
insert into item values('I1','HDTV','SAMSUNG','TV');
insert into item values('I2','LAPTOP','DELL','COMPUTER');
insert into item values('I3','MICROWAVE OVEN','LG','HAP');
create table employee(emp_id varchar2(20),emp_name varchar2(20),emp_category varchar2(30), primary key(emp_id));
insert into employee values('E1','JOHN','HOMEENTERTAIN');
insert into employee values('E2','SMITH','ELECTRONICS');
insert into employee values('E3','MILLER','ELECTRONICS');
insert into employee values('E4','SCOTT','HOUSEELECTRONICS');
insert into employee values('E5','KEVIN','AUTOMOBILE');
insert into employee values('E6','WARNE','HOMEENTERTAIN');
insert into employee values('E7','WATSON','ELECTRONICS');
insert into employee values('E8','HAYES','ELECTRONICS');
insert into employee values('E9','RODES','HOUSEELECTRONICS');
insert into employee values('E10','PETER','AUTOMOBILE');
create table branch(branch_id varchar2(20), branch_name varchar2(20), branch_city varchar2(20), branch_state varchar2(20), branch_country varchar2(20), primary key(branch_id));
insert into branch values('B1','CITYSQ','GUNTUR','AP','INDIA');
insert into branch values('B2','POTHIES','CHENNAI','TN','INDIA');
insert into branch values('B3','CMR','HYD','AP','INDIA');
insert into branch values('B4','MCM','BNG','KTK','INDIA');
insert into branch values('B5','GLAND','HYD','AP','INDIA');
create table purchases( trans_id varchar2(20), cust_id varchar2(20), emp_id varchar2(20), date1 date, primary key(trans_id), foreign Key (cust_id) references customer(cust_id),foreign Key (emp_id) references employee(emp_id) );
insert into purchases values('T100','C1','E1','03-JAN-06');
insert into purchases values('T101','C2','E2','01-FEB-06');
insert into purchases values('T102','C3','E3','05-MAR-07');
insert into purchases values('T103','C4','E4','08-APR-08');
insert into purchases values('T104','C5','E5','20-JUN-09');
insert into purchases values('T105','C1','E6','03-JAN-07');
```

```
insert into purchases values('T106','C2','E7','01-FEB-07');
insert into purchases values('T107','C3','E8','05-MAR-08');
insert into purchases values('T108','C4','E9','08-APR-09');
insert into purchases values('T109','C5','E10','20-JUN-06');
insert into purchases values('T110','C1','E6','03-JAN-08');
insert into purchases values('T111','C2','E7','01-FEB-08');
insert into purchases values('T112','C3','E8','05-MAR-09');
insert into purchases values('T113','C4','E9','08-APR-06');
insert into purchases values('T114','C5','E10','20-JUN-07');
insert into purchases values('T115','C1','E6','03-JAN-09');
insert into purchases values('T116','C2','E7','01-FEB-09');
insert into purchases values('T117','C3','E8','05-MAR-06');
insert into purchases values('T118','C4','E9','08-APR-07');
insert into purchases values('T119','C5','E10','20-JUN-08');
create table items_sold(trans_id varchar2(20), item_id varchar2(20), qty number(10),foreign Key
(trans_id) references purchases(trans_id),foreign Key (item_id) references item(item_id));
insert into items_sold values('T100','I1',1);
insert into items_sold values('T100','I2',2);
insert into items_sold values('T100','I3',3);
insert into items_sold values('T101','I1',2);
insert into items_sold values('T101','I2',4);
insert into items_sold values('T101','I3',5);
insert into items_sold values('T102','I1',1);
insert into items_sold values('T102','I2',3);
insert into items_sold values('T102','I3',6);
insert into items_sold values('T103','I1',2);
insert into items_sold values('T103','I2',4);
insert into items_sold values('T103','I3',5);
insert into items_sold values('T104','I1',3);
insert into items_sold values('T104','I2',2);
insert into items_sold values('T104','I3',1);
insert into items_sold values('T105','I1',5);
insert into items_sold values('T105','I2',7);
insert into items_sold values('T105','I3',8);
insert into items_sold values('T106','I1',2);
insert into items_sold values('T106','I2',3);
insert into items_sold values('T106','I3',7);
insert into items_sold values('T107','I1',2);
insert into items_sold values('T107','I2',4);
insert into items_sold values('T107','I3',7);
insert into items_sold values('T108','I1',3);
insert into items_sold values('T108','I2',2);
insert into items_sold values('T108','I3',8);
insert into items_sold values('T109','I1',6);
```

```
insert into items_sold values('T109','I2',5);
insert into items_sold values('T109','I3',2);
insert into items_sold values('T110','I1',4);
insert into items_sold values('T110','I2',7);
insert into items_sold values('T110','I3',8);
insert into items_sold values('T111','I1',4);
insert into items_sold values('T111','I2',5);
insert into items_sold values('T111','I3',8);
insert into items_sold values('T112','I1',9);
insert into items_sold values('T112','I2',3);
insert into items_sold values('T112','I3',6);
insert into items_sold values('T113','I1',7);
insert into items_sold values('T113','I2',2);
insert into items_sold values('T113','I3',5);
insert into items_sold values('T114','I1',3);
insert into items_sold values('T114','I2',2);
insert into items_sold values('T114','I3',1);
insert into items_sold values('T115','I1',3);
insert into items_sold values('T115','I2',2);
insert into items_sold values('T115','I3',1);
insert into items_sold values('T116','I1',3);
insert into items_sold values('T116','I2',2);
insert into items_sold values('T116','I3',9);
insert into items_sold values('T117','I1',3);
insert into items_sold values('T117','I2',2);
insert into items_sold values('T117','I3',8);
insert into items_sold values('T118','I1',3);
insert into items_sold values('T118','I2',2);
insert into items_sold values('T118','I3',6);
insert into items_sold values('T119','I1',4);
insert into items_sold values('T119','I2',2);
insert into items_sold values('T119','I3',1);
create table works_at(empl_id varchar2(20), branch_id varchar2(20),foreign Key (empl_id)
references employee(emp_id),foreign Key (branch_id) references branch(branch_id));
insert into works_at values('E1','B1');
insert into works_at values('E2','B2');
insert into works_at values('E3','B3');
insert into works_at values('E4','B4');
insert into works_at values('E5','B5');
insert into works_at values('E6','B1');
insert into works_at values('E7','B2');
insert into works_at values('E8','B3');
insert into works_at values('E9','B4');
insert into works_at values('E10','B5');
```

Note: 2, 3, 4, 5 are not supported in SQL plus since it doesn't support some keywords like JOIN etc.

They should be run online using Live SQL. Steps are as follows:

1. On google, type Live SQL
2. Open first link i.e, Oracle Live SQL
3. Click Start Coding
4. Login if you have already created an account or signup as new user.
5. Paste the above data and execute it first.
6. Run your SQL query.

2. Implement CUBE SLICING- COME WITH 2-D VIEW DATA Implement Cube operation Slice

Query:

```
-- Slicing on customer and item dimensions
SELECT cust_name, item_name, SUM(qty) as total_qty
FROM customer
JOIN purchases ON customer.cust_id = purchases.cust_id
JOIN items_sold ON purchases.trans_id = items_sold.trans_id
JOIN item ON items_sold.item_id = item.item_id
GROUP BY cust_name, item_name;
```

Output:

CUST_NAME	ITEM_NAME	TOTAL_QTY
ARUNBABU	LAPTOP	12
MANIDEEP	LAPTOP	18
MADHU	MICROWAVE OVEN	29
MANIDEEP	HDTV	13
ARUNBABU	MICROWAVE OVEN	27
SHIRAJ	LAPTOP	11
MADHU	HDTV	11
SHIRAJ	HDTV	16
SHIRAJ	MICROWAVE OVEN	5
MANIDEEP	MICROWAVE OVEN	20
ARUNBABU	HDTV	15
RAKESH	LAPTOP	10
MADHU	LAPTOP	14
RAKESH	HDTV	15
RAKESH	MICROWAVE OVEN	24

15 rows selected.

3. Aim: Implement Drill-down or Roll-down going from summary to more detailed data implement Cube operations.

Query:

```
-- Drill-down on customer to view purchases and items_sold
SELECT cust_name, purchases.trans_id, item_name, qty
FROM customer
JOIN purchases ON customer.cust_id = purchases.cust_id
JOIN items_sold ON purchases.trans_id = items_sold.trans_id
JOIN item ON items_sold.item_id = item.item_id
```

Output:

CUST_NAME	TRANS_ID	ITEM_NAME	QTY
MANIDEEP	T100	HDTV	1
MADHU	T101	HDTV	2
ARUNBABU	T102	HDTV	1
RAKESH	T103	HDTV	2
SHIRAJ	T104	HDTV	3
MANIDEEP	T105	HDTV	5
MADHU	T106	HDTV	2
ARUNBABU	T107	HDTV	2
RAKESH	T108	HDTV	3
SHIRAJ	T109	HDTV	6
MANIDEEP	T110	HDTV	4
MADHU	T111	HDTV	4
ARUNBABU	T112	HDTV	9
RAKESH	T113	HDTV	7
SHIRAJ	T114	HDTV	3
MANIDEEP	T115	HDTV	3
MADHU	T116	HDTV	3
ARUNBABU	T117	HDTV	3
RAKESH	T118	HDTV	3
SHIRAJ	T119	HDTV	4
MANIDEEP	T100	LAPTOP	2
MADHU	T101	LAPTOP	4
ARUNBABU	T102	LAPTOP	3
RAKESH	T103	LAPTOP	4
SHIRAJ	T104	LAPTOP	2
MANIDEEP	T105	LAPTOP	7
MADHU	T106	LAPTOP	3
ARUNBABU	T107	LAPTOP	4

RAKESH	T108	LAPTOP	2
SHIRAJ	T109	LAPTOP	5
MANIDEEP	T110	LAPTOP	7
MADHU	T111	LAPTOP	5
ARUNBABU	T112	LAPTOP	3
RAKESH	T113	LAPTOP	2
SHIRAJ	T114	LAPTOP	2
MANIDEEP	T115	LAPTOP	2
MADHU	T116	LAPTOP	2
ARUNBABU	T117	LAPTOP	2
RAKESH	T118	LAPTOP	2
SHIRAJ	T119	LAPTOP	2
MANIDEEP	T100	MICROWAVE OVEN	3
MADHU	T101	MICROWAVE OVEN	5
ARUNBABU	T102	MICROWAVE OVEN	6
RAKESH	T103	MICROWAVE OVEN	5
SHIRAJ	T104	MICROWAVE OVEN	1
MANIDEEP	T105	MICROWAVE OVEN	8
MADHU	T106	MICROWAVE OVEN	7
ARUNBABU	T107	MICROWAVE OVEN	7
RAKESH	T108	MICROWAVE OVEN	8
SHIRAJ	T109	MICROWAVE OVEN	2

Rows 1 - 50. More rows exist.

4. Aim: Implement Rollup - summarize data along a dimension hierarchy Implement Cube operations

Query:

```
-- Roll-up to summarize data
SELECT cust_city, item_type, sum(qty) as total_quantity
FROM customer c
JOIN purchases p ON c.cust_id = p.cust_id
JOIN items_sold isd ON p.trans_id = isd.trans_id
JOIN item i ON isd.item_id = i.item_id
GROUP BY ROLLUP(cust_city, item_type);
```

Output:

CUST_CITY	ITEM_TYPE	TOTAL_QUANTITY
GUNTUR	TV	28
GUNTUR	HAP	47
GUNTUR	COMPUTER	30

GUNTUR	-	105
ONGOLE	TV	11
ONGOLE	HAP	29
ONGOLE	COMPUTER	14
ONGOLE	-	54
CHENNAI	TV	16
CHENNAI	HAP	5
CHENNAI	COMPUTER	11
CHENNAI	-	32
BENGALORE	TV	15
BENGALORE	HAP	24
BENGALORE	COMPUTER	10
BENGALORE	-	49
-	-	240

17 rows selected.

5. Aim: To Implement Dicing – project 2-D view of data Implement Cube operations.

Query:

```
-- Dicing on customer and employee dimensions
SELECT cust_name, emp_name, sum(qty) as total_qty
FROM customer
JOIN purchases ON customer.cust_id = purchases.cust_id
JOIN items_sold ON purchases.trans_id = items_sold.trans_id
JOIN employee ON purchases.emp_id = employee.emp_id
GROUP BY cust_name, emp_name;
```

Output:

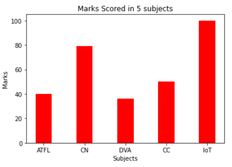
CUST_NAME	EMP_NAME	TOTAL_QTY
ARUNBABU	HAYES	44
SHIRAJ	PETER	26
MADHU	SMITH	11
ARUNBABU	MILLER	10
RAKESH	SCOTT	11
MANIDEEP	WARNE	45
RAKESH	RODES	38
MANIDEEP	JOHN	6
SHIRAJ	KEVIN	6
MADHU	WATSON	43

10 rows selected.

In [6]:

```
#6. Bar plot
import matplotlib.pyplot as plt
x=list(map(str,input("enter the x-axis values/labels: ").split()))
y=list(map(int,input("enter the y-axis values: ").split()))
xlabel=input("enter x-axis label: ")
ylabel=input("enter y-axis label: ")
title=input("enter title for the barplot: ")
plt.bar(x,y,color='red',width=0.4)
plt.xlabel(xlabel)
plt.ylabel(ylabel)
plt.title(title)
plt.show()
```

```
enter the x-axis values/labels: ATFL CN DVA CC IoT
enter the y-axis values: 40 79 36 50 100
enter x-axis label: Subjects
enter y-axis label: Marks
enter title for the barplot: Marks Scored in 5 subjects
```

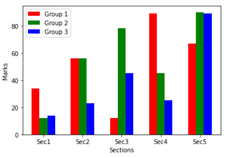


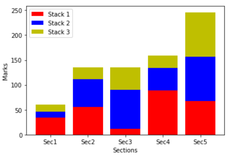
In [4]:

```
#7. Grouped and Stacked Bar Plot
import matplotlib.pyplot as plt
import numpy as np
y1 = list(map(int,input("enter the y-axis group1 values: ").split()))
y2 = list(map(int,input("enter the y-axis group2 values: ").split()))
y3 = list(map(int,input("enter the y-axis group3 values: ").split()))
x=np.arange(len(y1))
width = 0.2
plt.bar(x-0.2, y1, width, color='red')
plt.bar(x, y2, width, color='green')
plt.bar(x+0.2, y3, width, color='blue')
xlabel=input("enter x-axis label: ")
ylabel=input("enter y-axis label: ")
labels=list(map(str,input("enter the x-axis values/labels: ").split()))
plt.xticks(x, labels)
plt.xlabel(xlabel)
plt.ylabel(ylabel)
plt.title("Grouped Bars")
plt.legend(["Group 1", "Group 2", "Group 3"])
plt.show()

y1 = np.array(y1)
y2 = np.array(y2)
y3 = np.array(y3)
plt.bar(x, y1, color='r')
plt.bar(x, y2, bottom=y1, color='b')
plt.bar(x, y3, bottom=y1 + y2, color='y')
plt.xticks(x, labels)
plt.xlabel(xlabel)
plt.ylabel(ylabel)
plt.title("Stacked Bars")
plt.legend(["Stack 1", "Stack 2", "Stack 3"])
plt.show()
```

```
enter the y-axis group1 values: 34 56 12 89 67
enter the y-axis group2 values: 12 56 78 45 90
enter the y-axis group3 values: 14 23 45 25 89
enter x-axis label: Sections
enter y-axis label: Marks
enter title for the barplot: Marks in different sections
enter the x-axis values/labels: Sec1 Sec2 Sec3 Sec4 Sec5
```

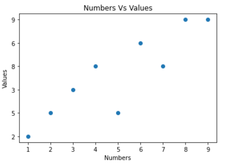




In [1]:

```
#8. Dot Plot
import matplotlib.pyplot as plt
import numpy as np
x = list(map(int,input("enter the x-axis values: ").split()))
y = list(map(str,input("enter the y-axis values/labels: ").split()))
n=np.arange(len(x))
xlabel = input("Enter x-axis label: ")
ylabel = input("Enter y-axis label: ")
title = input("Enter title for the bar plot: ")
plt.xlabel(xlabel)
plt.ylabel(ylabel)
plt.title(title)
plt.plot(x,y,'o')
plt.show()
```

```
enter the x-axis values: 1 2 3 4 5 6 7 8 9
enter the y-axis values/labels: 2 5 3 8 5 6 8 9 9
Enter x-axis label: Numbers
Enter y-axis label: Values
Enter title for the bar plot: Numbers Vs Values
```

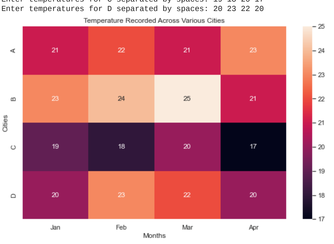


In [2]:

```
#9. Heat Map
import numpy as np
import seaborn as sns
import matplotlib.pyplot as plt
cities = input("Enter city names separated by spaces: ").split()
months = input("Enter month names separated by spaces: ").split()

temperature_data = []
for city in cities:
    temperatures = list(map(float, input(f"Enter temperatures for {city} separated by spaces: ").split()))
    temperature_data.append(temperatures)
sns.set()
plt.figure(figsize=(10, 6))
sns.heatmap(temperature_data, annot=True, xticklabels=months, yticklabels=cities)
plt.xlabel('Months')
plt.ylabel('Cities')
plt.title('Temperature Recorded Across Various Cities')
plt.show()
```

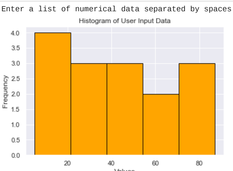
```
Enter city names separated by spaces: A B C D
Enter month names separated by spaces: Jan Feb Mar Apr
Enter temperatures for A separated by spaces: 21 22 21 23
Enter temperatures for B separated by spaces: 23 24 25 21
Enter temperatures for C separated by spaces: 19 18 20 17
Enter temperatures for D separated by spaces: 20 23 22 20
```



In [5]:

```
#10. Histogram
import matplotlib.pyplot as plt
data = list(map(float, input("Enter a list of numerical data separated by spaces: ").split()))
plt.hist(data, bins='auto', color='orange', edgecolor='black')
plt.xlabel('Values')
plt.ylabel('Frequency')
plt.title('Histogram of User Input Data')
plt.show()
```

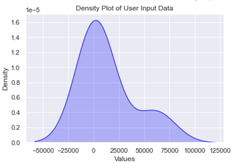
```
Enter a list of numerical data separated by spaces: 22 87 5 43 56 73 55 54 11 20 51 5 79 31 27
```



In [1]:

```
#11. Density Plot
import seaborn as sns
import matplotlib.pyplot as plt
data = list(map(float, input("Enter a list of numerical data separated by spaces: ").split()))
sns.set()
sns.kdeplot(data, color='blue', fill=True)
plt.xlabel('Values')
plt.ylabel('Density')
plt.title('Density Plot of User Input Data')
plt.show()
```

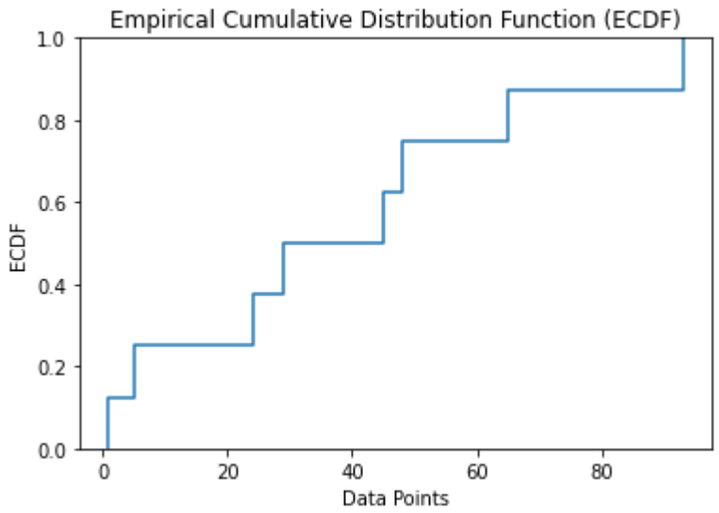
```
Enter a list of numerical data separated by spaces: 1 45 276 6736 61288
```



In [ ]:

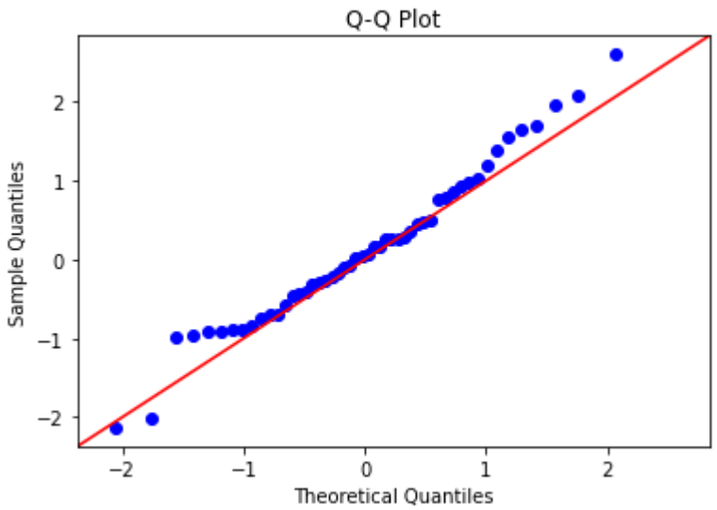
In [3]:
```
#12. ECDF Plot
import seaborn as sns
import matplotlib.pyplot as plt
data=list(map(float,input("Enter list of values: ").split()))
sns.ecdfplot(data)
plt.xlabel('Data Points')
plt.ylabel('ECDF')
plt.title('Empirical Cumulative Distribution Function (ECDF)')
plt.show()
```

```
Enter list of values: 1 93 45 65 5 24 48 29
```



In [16]:
```
#13. Q-Q Plot
import numpy as np
import statsmodels.api as sm
import matplotlib.pyplot as plt
n = int(input("Enter number of items: "))
data = np.random.normal(loc=0, scale=1, size=n)
sm.qqplot(data, line ='45')
plt.title("Q-Q Plot")
plt.show()
```

```
Enter number of items: 50
```

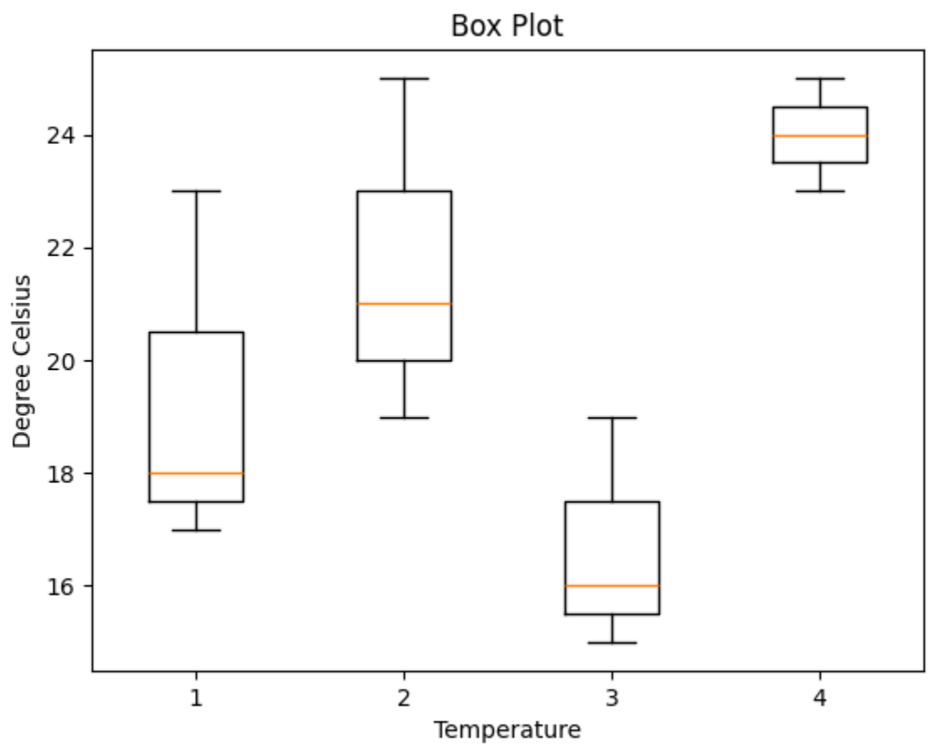


In [ ]:

In [ ]:

In [1]:
```
#14. Aim: To draw a Box plot for given input data
import matplotlib.pyplot as plt
n=int(input("Enter the number of temperatures: "))
temp_data=[]
for i in range(n):
    temp_data.append(list(map(float,input(f"Enter temperature(s) of {i+1}: ").split())))
plt.boxplot(temp_data)
plt.xlabel('Temperature')
plt.ylabel('Degree Celsius')
plt.title('Box Plot')
plt.show()
```

```
C:\Users\tejan\AppData\Roaming\Python\Python39\site-packages\matplotlib\projections\__init__.py:63: UserWarning: Unable to import Axes3D. This may be due to multiple versions of Matplotlib being installed (e.g. as a system package and as a pip package). As a result, the 3D projection is not available.
  warnings.warn("Unable to import Axes3D. This may be due to multiple versions of "
Enter the number of temperatures: 4
Enter temperature(s) of 1: 18 23 17
Enter temperature(s) of 2: 25 21 19
Enter temperature(s) of 3: 15 16 19
Enter temperature(s) of 4: 23 24 25
```

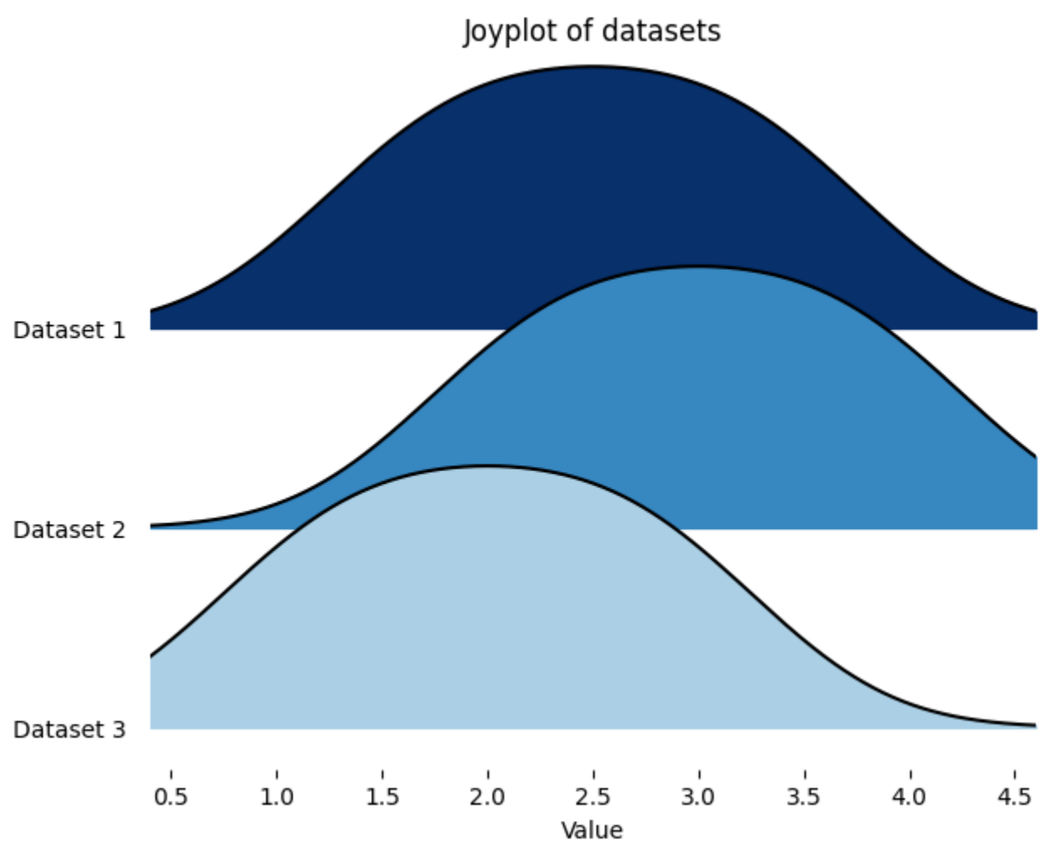


In [5]:
```
pip install joypy
```

```
Collecting joypy
  Using cached joypy-0.2.6-py2.py3-none-any.whl (8.6 kB)
Requirement already satisfied: numpy>=1.16.5 in c:\users\tejan\appdata\roaming\python\python39\site-packages (from joypy) (1.26.2)
Requirement already satisfied: scipy>=0.11.0 in d:\anaconda\lib\site-packages (from joypy) (1.9.1)
Requirement already satisfied: pandas>=0.20.0 in d:\anaconda\lib\site-packages (from joypy) (1.4.4)
Requirement already satisfied: matplotlib in c:\users\tejan\appdata\roaming\python\python39\site-packages (from joypy) (3.8.2)
Requirement already satisfied: python-dateutil>=2.8.1 in c:\users\tejan\appdata\roaming\python\python39\site-packages (from pandas>=0.20.0->joypy) (2.8.2)
Requirement already satisfied: pytz>=2020.1 in d:\anaconda\lib\site-packages (from pandas>=0.20.0->joypy) (2022.1)
Collecting numpy>=1.16.5 (from joypy)
  Downloading numpy-1.24.4-cp39-cp39-win_amd64.whl.metadata (5.6 kB)
Requirement already satisfied: contourpy>=1.0.1 in c:\users\tejan\appdata\roaming\python\python39\site-packages (from matplotlib->joypy) (1.2.0)
Requirement already satisfied: cycler>=0.10 in c:\users\tejan\appdata\roaming\python\python39\site-packages (from matplotlib->joypy) (0.12.1)
Requirement already satisfied: fonttools>=4.22.0 in c:\users\tejan\appdata\roaming\python\python39\site-packages (from matplotlib->joypy) (4.46.0)
Requirement already satisfied: kiwisolver>=1.3.1 in c:\users\tejan\appdata\roaming\python\python39\site-packages (from matplotlib->joypy) (1.4.5)
Requirement already satisfied: packaging>=20.0 in c:\users\tejan\appdata\roaming\python\python39\site-packages (from matplotlib->joypy) (23.2)
Requirement already satisfied: pillow>=8 in c:\users\tejan\appdata\roaming\python\python39\site-packages (from matplotlib->joypy) (10.1.0)
Requirement already satisfied: pyparsing>=2.3.1 in c:\users\tejan\appdata\roaming\python\python39\site-packages (from matplotlib->joypy) (3.1.1)
Requirement already satisfied: importlib-resources>=3.2.0 in c:\users\tejan\appdata\roaming\python\python39\site-packages (from matplotlib->joypy) (6.1.1)
Requirement already satisfied: zipp>=3.1.0 in c:\users\tejan\appdata\roaming\python\python39\site-packages (from importlib-resources>=3.2.0->matplotlib->joypy) (3.17.0)
Requirement already satisfied: six>=1.5 in c:\users\tejan\appdata\roaming\python\python39\site-packages (from python-dateutil>=2.8.1->pandas>=0.20.0->joypy) (1.16.0)
Downloading numpy-1.24.4-cp39-cp39-win_amd64.whl (14.9 MB)
   ---------------------------------------- 14.9/14.9 MB 738.9 kB/s eta 0:00:00
Installing collected packages: numpy, joypy
  Attempting uninstall: numpy
    Found existing installation: numpy 1.26.2
    Uninstalling numpy-1.26.2:
      Successfully uninstalled numpy-1.26.2
Successfully installed joypy-0.2.6 numpy-1.21.5
Note: you may need to restart the kernel to use updated packages.
  WARNING: Failed to remove contents in a temporary directory 'C:\Users\tejan\AppData\Roaming\Python\Python39\site-packages\~umpy.libs'.
  You can safely remove it manually.
  WARNING: Failed to remove contents in a temporary directory 'C:\Users\tejan\AppData\Roaming\Python\Python39\site-packages\~umpy'.
  You can safely remove it manually.
ERROR: pip's dependency resolver does not currently take into account all the packages that are installed. This behaviour is the source of the following dependency conflicts.
daal4py 2021.6.0 requires daal==2021.4.0, which is not installed.
tensorflow 2.10.0 requires protobuf<3.20,>=3.9.2, but you have protobuf 3.20.3 which is incompatible.
numba 0.55.1 requires numpy<1.22,>=1.18, but you have numpy 1.24.4 which is incompatible.
tensorboard 2.10.1 requires protobuf<3.20,>=3.9.2, but you have protobuf 3.20.3 which is incompatible.
tensorflow-intel 2.11.0 requires keras<2.12,>=2.11.0, but you have keras 2.10.0 which is incompatible.
tensorflow-intel 2.11.0 requires protobuf<3.20,>=3.9.2, but you have protobuf 3.20.3 which is incompatible.
tensorflow-intel 2.11.0 requires tensorboard<2.12,>=2.11, but you have tensorboard 2.10.1 which is incompatible.
tensorflow-intel 2.11.0 requires tensorflow-estimator<2.12,>=2.11.0, but you have tensorflow-estimator 2.10.0 which is incompatible.
```

In [2]:
```
#15. Aim: To draw Ridgeline plot for given user input data
import matplotlib.pyplot as plt
from joypy import joyplot
n=int(input("Enter the number of data sets: "))
data=[]
for i in range(n):
    data.append(list(map(float,input(f"Enter data for dataset {i+1}: ").split())))
fig, ax = joyplot(data, labels=[f'Dataset {i+1}' for i in range(n)], colormap=plt.cm.Blues_r)
plt.xlabel('Value')
plt.ylabel('Density')
plt.title('Joyplot of datasets')
plt.show()
```

```
Enter the number of data sets: 3
Enter data for dataset 1: 1.5 2 2.5 3 3.5
Enter data for dataset 2: 2 2.5 3 3.5 4
Enter data for dataset 3: 1 1.5 2 2.5 3
```



In [ ]: