

**Bar Graph for Production Capacity**

**# Step 1: Import libraries**

**import mysql.connector**

**import matplotlib.pyplot as plt**

**# Step 2: Connect to the SMZ database**

**conn = mysql.connector.connect(**

**host='localhost',**

**user='root', # Replace with your MySQL username**

**password='password', # Replace with your MySQL password**

**database='SMZ' # Your SMZ database name**

**)**

**cursor = conn.cursor()**

**# Step 3: Fetch product categories and capacities**

**query = 'SELECT Category, Product\_capacity FROM product'**

**cursor.execute(query)**

**data = cursor.fetchall()**

**# Step 4: Process the data**

**categories = [row[0] for row in data]**

**capacities = [row[1] for row in data]**

**# Step 5: Visualize the data**

**plt.figure(figsize=(8, 6))**

**plt.bar(categories, capacities, color='teal')**

**plt.xlabel('Product Categories')**

**plt.ylabel('Production Capacity')**

**plt.title('Production Capacity by Category')**

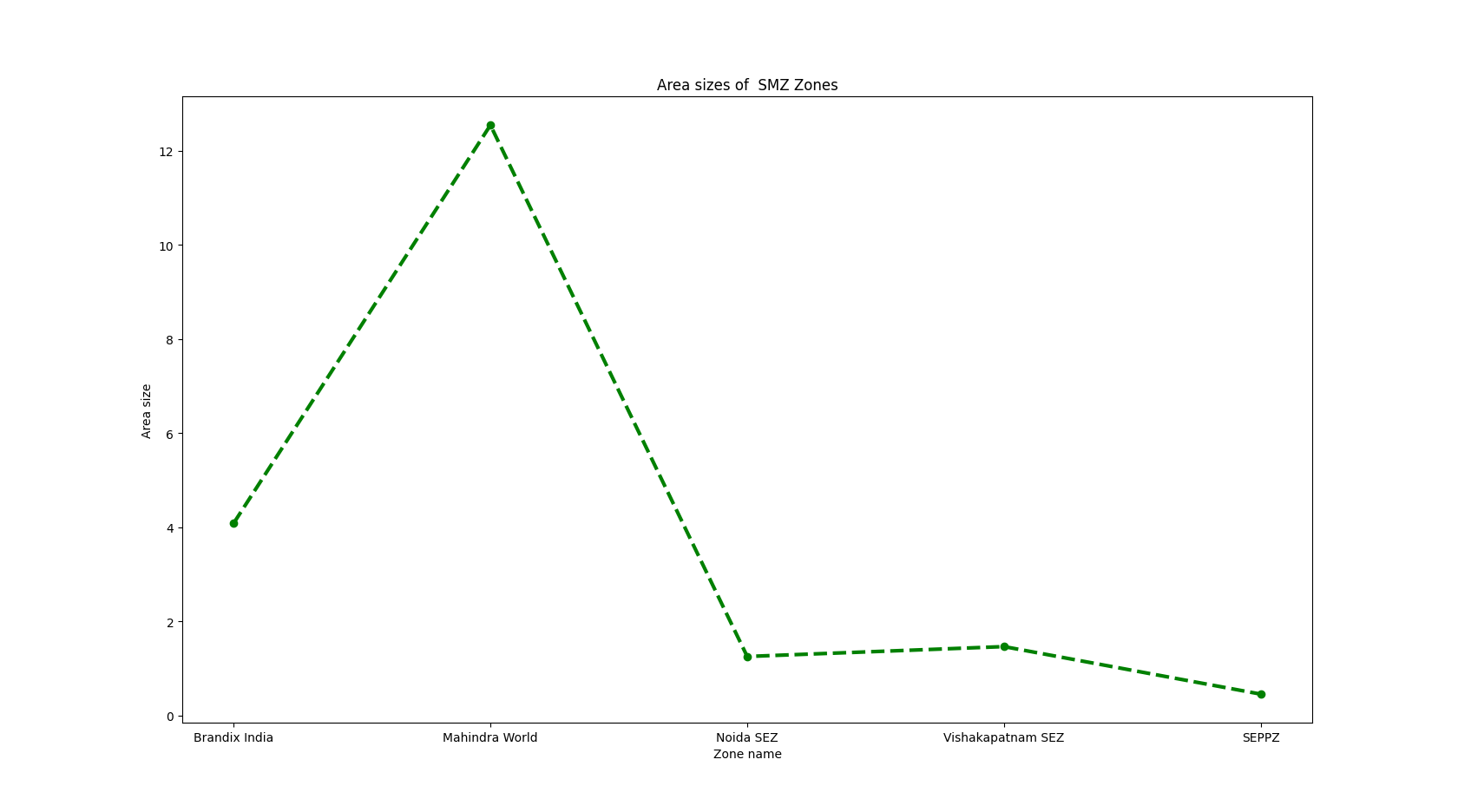
**plt.grid(axis='y', linestyle='--', alpha=0.7)**

**plt.tight\_layout()**

**plt.show()**

**# Close connection**

**conn.close()**

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**Line Graph Showing Area sizes of Different SMZ zones**

**Code:**

**# Step 1: Import libraries**

**import mysql.connector**

**import matplotlib.pyplot as plt**

**# Step 2: Connect to the SMZ database**

**conn = mysql.connector.connect(**

**host='localhost',**

**user='root', # Replace with your MySQL username**

**password='123456', # Replace with your MySQL password**

**database='SMZ' # Your SMZ database name**

**)**

**cursor = conn.cursor()**

**# Step 3: Fetch smz zone name and area size**

**query = 'SELECT zone\_name, area\_size FROM smz\_zone'**

**cursor.execute(query)**

**data = cursor.fetchall()**

**# Step 4: Process the data**

**zone\_name = [row[0] for row in data]**

**area\_size = [row[1] for row in data]**

**# Step 5: Visualize the data**

**plt.plot(zone\_name, area\_size, color='green', linestyle = '--', marker = 'o',linewidth='3')**

**plt.xlabel('Zone name')**

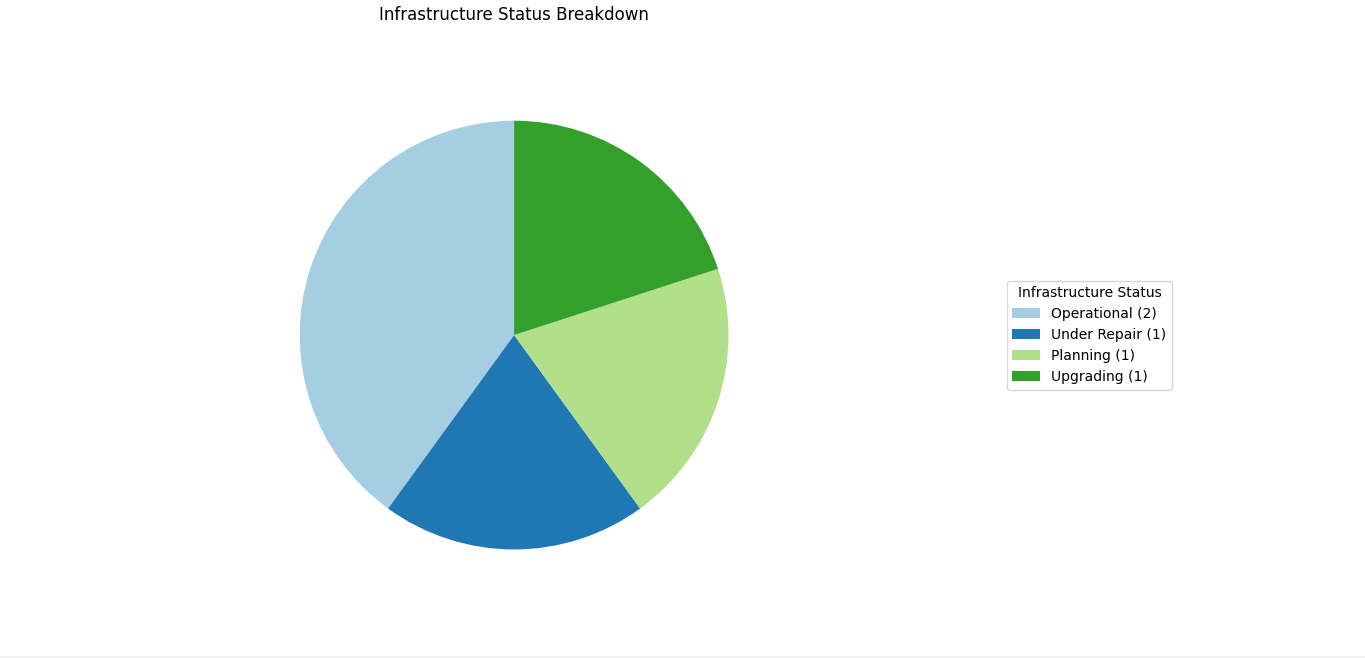
**plt.ylabel('Area size')**

**plt.title('Area sizes of SMZ Zones')**

**plt.show()**

**# Close connection**

**conn.close()**

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**Pie chart for Operational Status**

**# Step 1: Import libraries**

**import mysql.connector**

**import matplotlib.pyplot as plt**

**# Step 2: Connect to the SMZ database**

**conn = mysql.connector.connect(**

**host='localhost',**

**user='root',            # Replace with your MySQL username**

**password='password', # Replace with your MySQL password**

**database='SMZ'          # Your SMZ database name**

**)**

**cursor = conn.cursor()**

**# Step 3: Fetch smz zone name and area size**

**# Query for Type distribution**

**# Query the status distribution**

**cursor.execute("SELECT Status, COUNT(\*) FROM infrastructure GROUP BY Status")**

**status\_data = cursor.fetchall()**

**# Prepare labels and counts**

**status\_labels = [row[0] for row in status\_data]**

**status\_counts = [row[1] for row in status\_data]**

**# Choose distinct colors (optional)**

**colors = plt.cm.Paired(range(len(status\_labels)))  # You can swap to other palettes like Set3 or tab10**

**# Create the pie chart**

**plt.figure(figsize=(7, 7))**

**wedges, texts = plt.pie(status\_counts, colors=colors, startangle=90)**

**# Add a legend to the side**

**plt.legend(wedges, [f'{label} ({count})' for label, count in zip(status\_labels, status\_counts)],**

**title="Infrastructure Status", loc="center left", bbox\_to\_anchor=(1, 0.5))**

**plt.title("Infrastructure Status Breakdown")**

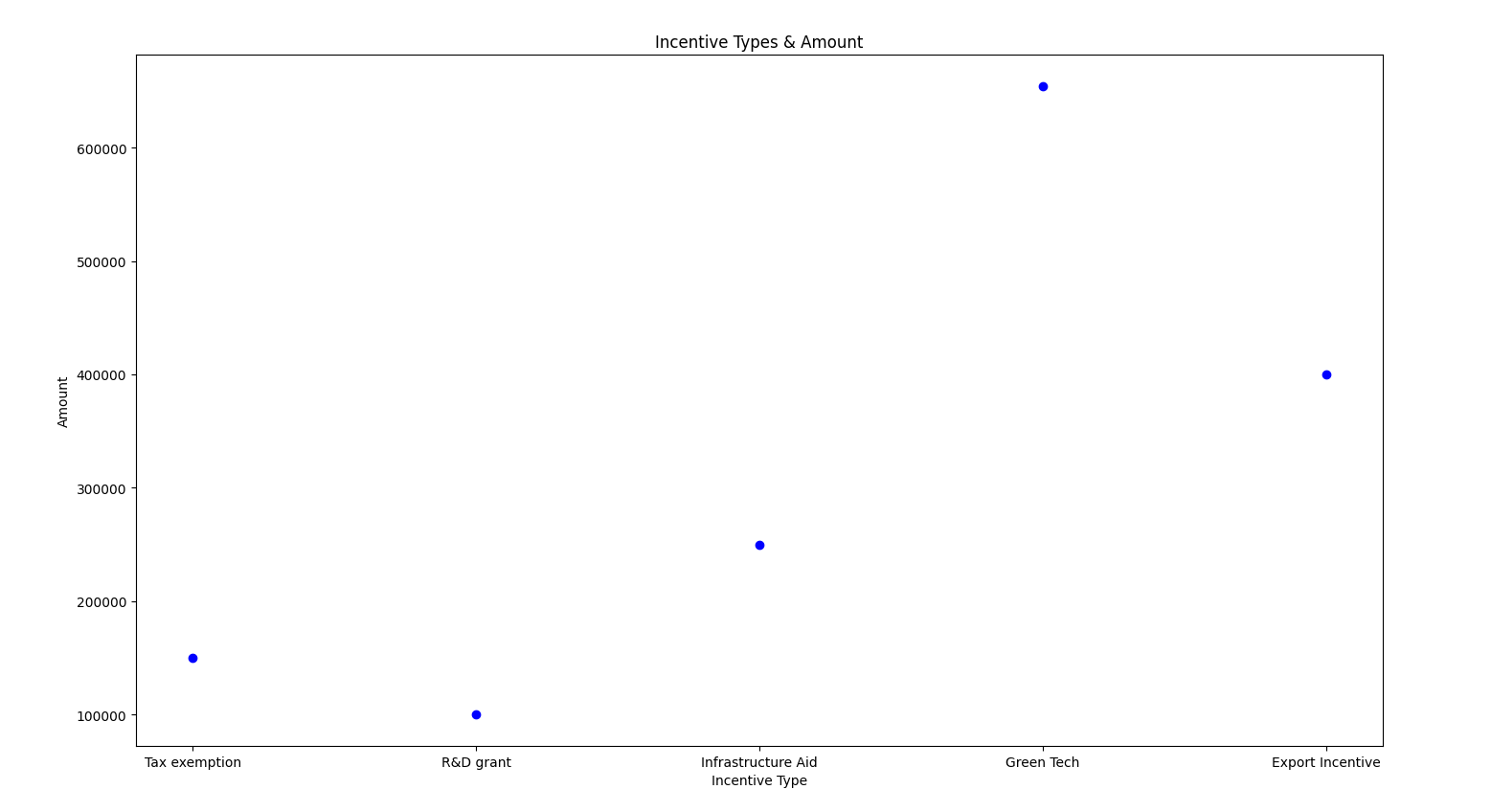
**plt.axis('equal')  # Perfect circle**

**plt.tight\_layout()**

**plt.show()**

**#Close connection**

**conn.close()**

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**Scatter Diagram for Incentives**

**# Step 1: Import libraries**

**import mysql.connector**

**import matplotlib.pyplot as plt**

**# Step 2: Connect to the SMZ database**

**conn = mysql.connector.connect(**

**host='localhost',**

**user='root', # Replace with your MySQL username**

**password='123456', # Replace with your MySQL password**

**database='SMZ' # Your SMZ database name**

**)**

**cursor = conn.cursor()**

**# Step 3: Fetch incentive type and amount**

**query = 'SELECT Incentive\_type, Amount FROM govt\_incentives'**

**cursor.execute(query)**

**data = cursor.fetchall()**

**# Step 4: Process the data**

**Incentive\_type = [row[0] for row in data]**

**Amount = [row[1] for row in data]**

**# Step 5: Visualize the data**

**plt.figure(figsize=(8,5))**

**plt.scatter(Incentive\_type, Amount , color='blue', marker = 'o',)**

**plt.xlabel('Incentive Type')**

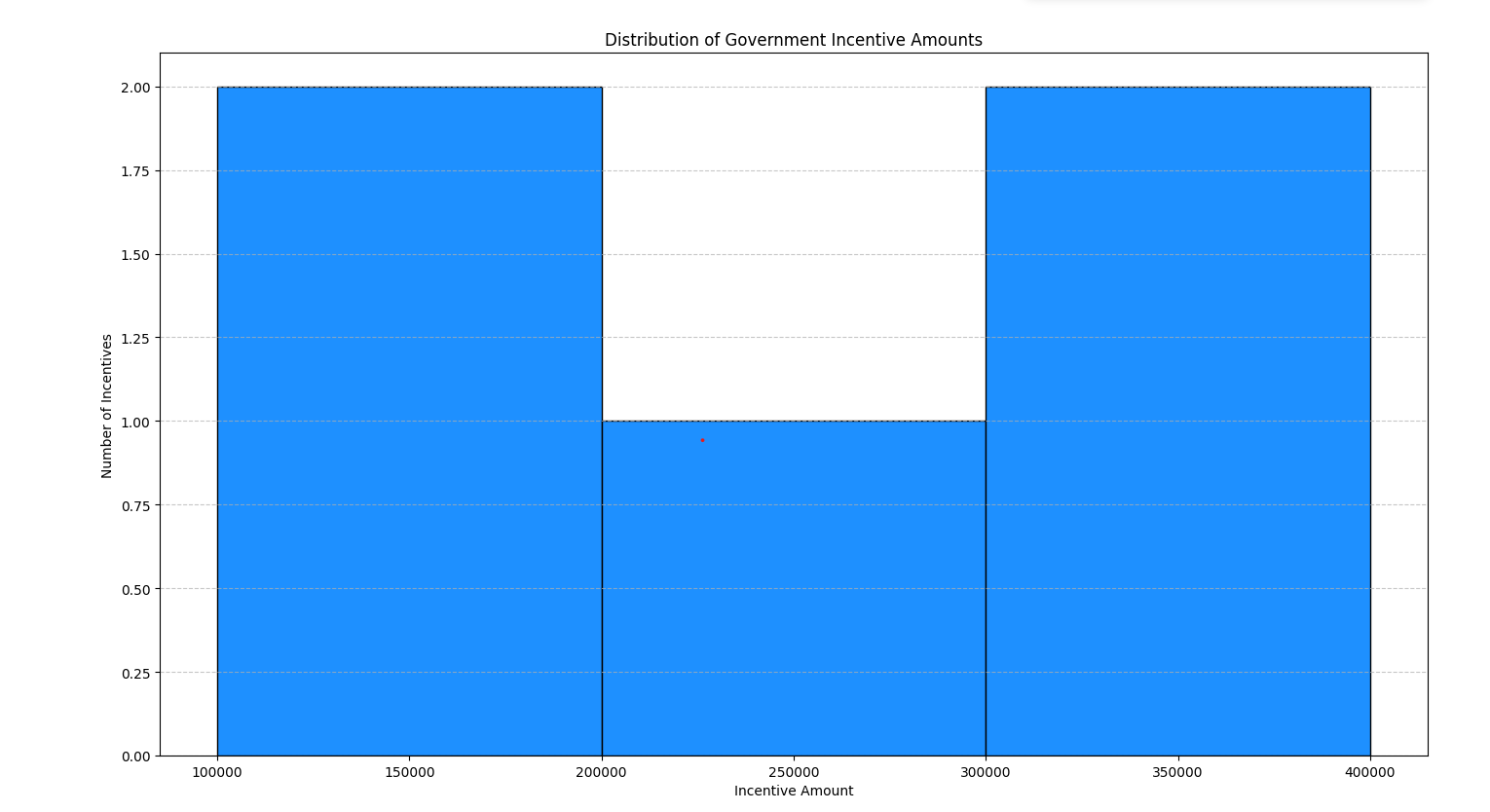
**plt.ylabel('Amount')**

**plt.title('Incentive Types & Amount')**

**plt.show()**

**# Close connection**

**conn.close()**

**Histogram For Govt. Incentives amount and number**

# Step 1: Import libraries

import mysql.connector

import matplotlib.pyplot as plt

# Step 2: Connect to the SMZ database

conn = mysql.connector.connect(

host='localhost',

user='root', # Replace with your MySQL username

password='123456', # Replace with your MySQL password

database='SMZ' # Your SMZ database name

)

cursor = conn.cursor()

# Step 3: Fetch product company name and registeration from company

query = 'SELECT Amount FROM govt\_incentives'

cursor.execute(query)

data = cursor.fetchall()

# Step 4: Process the data

amounts = [row[0] for row in data]

# Step 5: Visualize the data

plt.figure(figsize=(8, 6))

plt.hist(amounts, bins=3, color='dodgerblue', edgecolor='black')

plt.xlabel('Incentive Amount')

plt.ylabel('Number of Incentives')

plt.title('Distribution of Government Incentive Amounts')

plt.grid(axis='y', linestyle='--', alpha=0.7)

plt.show()

# Close connection

conn.close()