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**PROJECT** : **Data visualisation** and **representation** of **CUET SCORES** .

**Code:**

import matplotlib.pyplot as plt

import numpy as np

import pandas as pd

# Boxplot , shows CUET Cutoff Scores for Departments

data = {

    'CS': [320, 330, 340, 345, 350],

    'Electronics': [300, 305, 315, 320, 325],

    'Chemistry': [295, 305, 310, 315, 320],

    'Physics': [290, 295, 300, 305, 310],

    'Maths': [310, 315, 320, 325, 330],

    'Botany': [280, 285, 290, 295, 300],

    'Zoology': [285, 290, 295, 300, 305],

    'BMS': [300, 305, 310, 315, 320]

}

plt.figure(figsize=(10, 6))

bp = plt.boxplot(data.values(), labels=data.keys(), patch\_artist=True, showmeans=True, meanline=False, showbox=True)

colors = ['skyblue', 'lightgreen', 'lightcoral', 'lightsalmon', 'lightpink', 'lightyellow', 'lightblue', 'lightgrey']

for patch, color in zip(bp['boxes'], colors):

    patch.set\_facecolor(color)

for mean\_marker in bp['means']:

    mean\_marker.set(marker='o', color='g', markersize=5)

plt.title('CUET Cutoff Scores for Departments')

plt.xlabel('Departments')

plt.ylabel('Cut-off Scores')

plt.grid(True)

# Pie chart , shows student strength in each department entered through CUET

departments = ['CS', 'Electronics', 'Chemistry', 'Physics', 'Maths', 'Botany', 'Zoology', 'BMS']

student\_count = [150, 120, 100, 130, 110, 90, 95, 115]

max\_student\_index = student\_count.index(max(student\_count))

min\_student\_index = student\_count.index(min(student\_count))

explode = [0.2 if i == max\_student\_index or i == departments.index('Botany') else 0 for i in range(len(departments))]

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

plt.pie(student\_count, labels=departments, explode=explode, autopct='%1.1f%%', startangle=140)

plt.title('Student Strength in Each Department entered through CUET')

plt.axis('equal')

# Histogram , shows CUET Scores Distribution and Comparison (Previous Year vs. Current Year)

previous\_year\_scores = np.array([320, 433, 340, 350, 380, 360, 398, 260, 576, 589, 456, 480, 560, 530, 470, 200, 240, 260, 520, 512, 168, 620, 705, 280, 555, 595])

current\_year\_scores = np.array([380, 465, 440, 595, 480, 680, 510, 565, 630, 645, 670, 700, 500, 420, 550, 560, 500, 600, 605, 620, 640, 580, 688, 700, 705, 695, 750, 780, 768])

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

plt.hist(previous\_year\_scores, bins=10, alpha=0.7, label='Previous Year', histtype="stepfilled", color="b")

plt.hist(current\_year\_scores, bins=10, alpha=0.7, label='Current Year', histtype="step", color="r", hatch="+++")

plt.title('CUET Scores Distribution and Comparison (Previous Year vs. Current Year)')

plt.xlabel('CUET Scores')

plt.ylabel('Frequency')

plt.legend()

plt.grid(axis='y')

plt.xticks(np.arange(0, 801, 50))

# bar graph ,shows satisfactory scores i,e ,,Student Satisfaction with Admitted Branches

departments = ['BSc CS', 'BSc Electronics', 'BSc Mathematics', 'BSc Physics', 'BSc Chemistry', 'BSc Zoology', 'BSc Botany', 'BSc BMS', 'B.Commerce']

satisfaction\_scores = [9.5, 8.9, 9.0, 8.7, 7.5, 8.2, 7.8, 8.5, 6.7]

data = {'Department': departments, 'Satisfaction\_Score': satisfaction\_scores}

df = pd.DataFrame(data)

colors = ['cyan', 'green', 'orange', 'red', 'purple', 'brown', 'pink', 'skyblue', 'gray']

plt.figure(figsize=(12, 6))

bars = plt.bar(df['Department'], df['Satisfaction\_Score'], color=colors, alpha=0.7)

plt.title('Student Satisfaction with Admitted Branches')

plt.xlabel('Departments')

plt.ylabel('Satisfaction Scores (out of 10)')

plt.ylim(0, 10)

plt.xticks(rotation=45)

plt.grid(axis='y')

for bar, score in zip(bars, df['Satisfaction\_Score']):

    plt.text(bar.get\_x() + bar.get\_width() / 2, score + 0.1, f'{score:.1f}', ha='center', va='bottom')

plt.tight\_layout()

# shows

plt.show()

**output :**

