ASSESSING THE COLLEGE CAMPUS EXPERIENCE

“SUMMER INTERNSHIP” – A PROJECT REPORT

Submitted by

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SRI RAMAKRISHNA COLLEGE OF ARTS & SCIENCE

BONAFIDE CERTIFICATE

Certified that this project report **"ASSESSING THE COLLEGE CAMPUS EXPERIENCE"** is the bonafide work of **"MANIARASAN J (22127028)"** Who carried out the project work under my supervision.

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I.INTRODUCTION TO DATA ANALYTICS

1. Introduction to Data Analysis / Analytics

Data analysis, also known as analytics, is the process of examining and interpreting data to derive meaningful insights, patterns, and trends. It involves applying various techniques and tools to transform raw data into valuable information that can drive informed decision-making.

The goal of data analysis is to uncover valuable insights and make datadriven decisions that can lead to improvements in various areas, such as business operations, marketing strategies, scientific research, and more. By analyzing data, organizations can gain a deeper understanding of their customers, markets, and internal processes, enabling them to identify opportunities, detect problems, and optimize performance.

To conduct data analysis, analysts use a variety of tools and technologies, such as spreadsheet software (e.g., Microsoft Excel), statistical programming languages (e.g., R or Python), data visualization tools (e.g., Tableau or Power BI).

Data analysis plays a crucial role in various fields, including business, finance, healthcare, marketing, social sciences, and more. It empowers organizations to make data-driven decisions, gain a competitive edge, and unlock new opportunities for growth and innovation.

2. Data Analytics Approaches

Descriptive Analytics: This approach focuses on summarizing and describing historical data to gain insights into past events and trends. Descriptive analytics techniques include basic statistical measures, data visualization, and summary reports. It helps to understand what has happened and provides a foundation for further analysis.

Diagnostic Analytics: Diagnostic analytics aims to identify the reasons behind past events or trends. It involves analyzing data to uncover patterns, correlations, or anomalies that can explain specific outcomes. Diagnostic analytics often utilizes statistical analysis, root cause analysis, and exploratory data analysis techniques.

Predictive Analytics: Predictive analytics involves using historical data to make predictions or forecasts about future events or outcomes. It leverages statistical modeling, machine learning algorithms, and data mining techniques to identify patterns and build predictive models. Predictive analytics helps organizations anticipate future trends, make informed decisions, and take proactive actions.

Prescriptive Analytics: Prescriptive analytics goes beyond prediction and provides recommendations on the best course of action to achieve desired outcomes. It uses optimization algorithms, simulation models, and decision analysis to generate actionable insights. Prescriptive analytics helps organizations optimize resources, streamline processes, and make datadriven decisions.

Exploratory Analytics: Exploratory analytics is an open-ended approach used to discover hidden patterns, relationships, or insights in data. Exploratory analytics is often used in research or when dealing with unstructured or large datasets.

3. Steps of Data Analytics

Define the problem or objective: Clearly articulate the problem or objective you want to address through data analysis. This step involves understanding the business or research question and identifying the key variables or metrics of interest.

Data collection: Gather relevant data from various sources, such as databases, spreadsheets, APIs, or external datasets. Ensure that the data collected aligns with the problem at hand and meets the required quality standards.

Data cleaning and preprocessing: Clean the data by addressing issues such as missing values, outliers, inconsistent formats, or errors. This step may involve tasks like data imputation, removing duplicates, standardizing variables, and transforming data into a suitable format for analysis.

Data exploration and visualization: Conduct exploratory data analysis (EDA) to understand the characteristics of the data, identify patterns, relationships, or anomalies. Visualize the data using charts, graphs, or interactive dashboards to gain insights and communicate findings effectively.

Data modeling and analysis: Apply appropriate analytical techniques based on the nature of the data and the objectives of the analysis. This may involve statistical analysis, predictive modeling, machine learning algorithms, or other quantitative methods.

Communicate the results: Present the findings in a clear, concise, and visually appealing manner to stakeholders or decision-makers. Use data visualizations, reports, presentations, or interactive dashboards to effectively communicate the insights and support decision-making processes.

4. Applications of Data Analytics

Customer insights: Data analytics can be used to gain insights into customer behavior, preferences, and needs. This information can be used to improve customer satisfaction, loyalty, and retention.

Fraud detection: Data analytics can be used to detect fraud and other suspicious activity. This can help businesses protect themselves from financial loss and reputational damage.

Risk management: Data analytics can be used to assess and manage risk. This can help businesses make better decisions about investments, operations, and other areas.

Marketing and sales: Data analytics can be used to improve marketing and sales campaigns. This can help businesses increase sales, improve customer engagement, and boost ROI.

Product development: Data analytics can be used to improve product development. This can help businesses create products that meet the needs of their customers and that are successful in the marketplace.

Decision making: Data analytics can be used to support decision-making. This can help businesses make better decisions about a wide range of issues, such as investments, operations, and marketing.

II. OVERVIEW OF THE PROBLEM

1.Problem Study

Assessing the college campus experience among college students by taking survey.This surveys can provide valuable insights into the college campus experience, including students' perceptions of their learning environment, social interactions, and access to technology,etc..

2. Challenges / Need of the study

Assessing the college campus experience through surveys can be challenging, and there are several needs that the study should address.Because, students from same college having different views on their college.So, It depends on perception of the students in different college.

3. Hardware / System Requirements

System requirements are the configuration that a system must have in order for a hardware or software application to run smoothly and efficiently. The system used in this project is Windows 11. It has 11th Gen Intel(R) Core (TM) i3-1115G4 @ 3.00GHz 3.00 GHz processor with 8.00GB RAM and 64-bit operating system, x64-based processor system type.

4. Software, Tools and Libraries Requirements

The software used in this summer internship project is MS EXCEL and PYTHON.

MS EXCEL:

Microsoft Excel is a powerful spreadsheet application developed by Microsoft. It is widely used for data analysis, numerical calculations, financial modeling, and creating visualizations. Excel provides a user-friendly interface with a grid of cells organized in rows and columns, where users can input and manipulate data.

PYTHON:

Python is a high-level programming language that is widely used for various purposes, such as web development, data analysis, machine learning, scientific computing, and more. Python is known for its simplicity and readability, which makes it easier to learn and write code in comparison to other programming languages.

Jupyter Notebook is an open-source web application that allows you to create and share documents that contain live code, equations, visualizations, and narrative text. It is commonly used for data analysis, scientific computing, machine learning, and more.

III. DATA PREPARATION

1.Data Collection Approaches

We conducting a survey to assess the college campus experience using Google Forms by Self-administered Online Survey.

https://docs.google.com/forms/d/e/1FAIpQLSdMVyilhR46y2pOVvbwbzoNA7OuEJM0w5hsrxjQp9KCGk7b8Q/viewform?usp=sf_link

Field Description:

1.Name:

It represents the Name of the survey responder. **2.Gender:**

It describes the gender of the survey responder.

3.How would you rate the overall campus atmosphere?

It represents a measure of participants' subjective perception or evaluation of the general ambiance, environment, and vibe of the college campus.

4. Which aspect of the college environment do you find most appealing?

It aims to capture the specific elements or features of the college environment that respondents find most attractive or appealing to them.

5.How satisfied are you with the availability of campus facilities (e.g., library, laboratories, recreational areas)?

It seeks to gauge how satisfied the respondents are with the availability of essential amenities and resources on campus.

6.How would you rate the accessibility of professors and staff members?

It seeks to assess the level of availability, approachability, and responsiveness of faculty and staff members to student needs and inquiries.

7.How often do you engage in extracurricular activities or student clubs?

It aims to assess how frequently students participate in extracurricular activities or join student clubs.

8. How well do you think the college promotes diversity and inclusivity?

It aims to capture their subjective opinions and attitudes regarding the college's commitment to diversity and inclusivity.

9. What is your perception of campus safety and security?

It aims to gather their perceptions and beliefs about how safe and secure they feel in the campus environment.

10. How satisfied are you with the quality of academic advising and career services?

It aims to capture respondents' perceptions and opinions about the effectiveness, helpfulness, and overall quality of the support they receive in these areas.

11. How would you rate the availability and reliability of technology resources (e.g., Wi-Fi, computer labs)?

It aims to gather subjective feedback regarding the accessibility and dependability of technology-related facilities and services.

12. How often do you interact with students from different cultural or international backgrounds?

It aims to capture the level of engagement and social interaction with individuals from different cultural or national origins.

13.How well do you think the college supports student mental health and well-being?

It represents an inquiry into participants' perceptions and opinions regarding the level of support provided by the college in terms of student mental health and well-being.

14. How satisfied are you with the course structure and material?

It aims to gauge their overall satisfaction with how the courses are structured and the materials provided to support their learning.

15. How satisfied are you with the availability of food and cafeteria services?

It seeks to assess the level of satisfaction that students have with the availability of food options and the dining experience within the campus cafeteria.

16.How satisfied are you with the availability of parking on campus?

It aims to capture the respondents' level of contentment or dissatisfaction with the parking situation at the college.

17. How likely are you to recommend this college to others based on your experience of the overall environment?

It assesses the likelihood of customers or in this case, college students, recommending a product, service, or in this case, a college, to others.

2. Data Method

Exploratory Data Analysis is a method of evaluating or comprehending data in order to derive insights or key characteristics. EDA can be dividedg into two categories: graphical analysis and non-graphical analysis.

EDA is a critical component of any data science or machine learning process. You must explore the data, understand the relationships between

variables, and the underlying structure of the data in order to build a reliable and valuable output based on it.

Types of Exploratory Data Analysis:

Descriptive Statistics: Descriptive statistics summarize and describe the basic features of the data, providing measures such as mean, median, mode, standard deviation, range, and percentiles.

Data Visualization: Data visualization techniques use charts, graphs, and plots to visually represent data patterns and relationships.

Data Cleaning and Preprocessing: EDA involves cleaning and preprocessing the data to handle missing values, outliers, and inconsistencies.

Univariate Analysis: Univariate analysis focuses on exploring individual variables in the dataset.

Bivariate Analysis: Bivariate analysis examines the relationship between two variables.

Multivariate Analysis: Multivariate analysis involves the simultaneous analysis of three or more variables.

Outlier Detection: Outliers are extreme values that deviate significantly from the general patterns in the data.

Feature Engineering: Feature engineering involves creating new variables or transforming existing variables to enhance the predictive power of the data.

3. Purpose of Data

The purpose of data in assessing the college campus experience survey is to gather objective and subjective information from participants to gain insights and understanding about various aspects of their experience on campus. The data collected serves several purposes:

Evaluation and Feedback: The survey data allows for the evaluation of different aspects of the college campus experience. The data provides valuable feedback to the college administration and stakeholders about what is working well and areas that may require improvement.

Identifying Areas for Improvement: By analyzing the survey data, colleges can identify specific areas that may need attention or enhancement. By pinpointing areas of improvement, colleges can take targeted actions to enhance the overall campus experience.

Measure Satisfaction: Data allows you to measure the overall satisfaction of students with various aspects of the college campus experience, such as academic support, campus facilities, extracurricular activities, social environment, and student services.

IV.METHODOLOGY

3.1 Descriptive Analysis / Model Used

Descriptive analysis refers to the process of summarizing and describing the main characteristics of a dataset. It involves exploring and understanding the data through various statistical measures, visualizations, and summary statistics. Descriptive analysis aims to provide insights into the data, identify patterns, and uncover important features.

Input Process Output(IPO) for Excel:

Input:

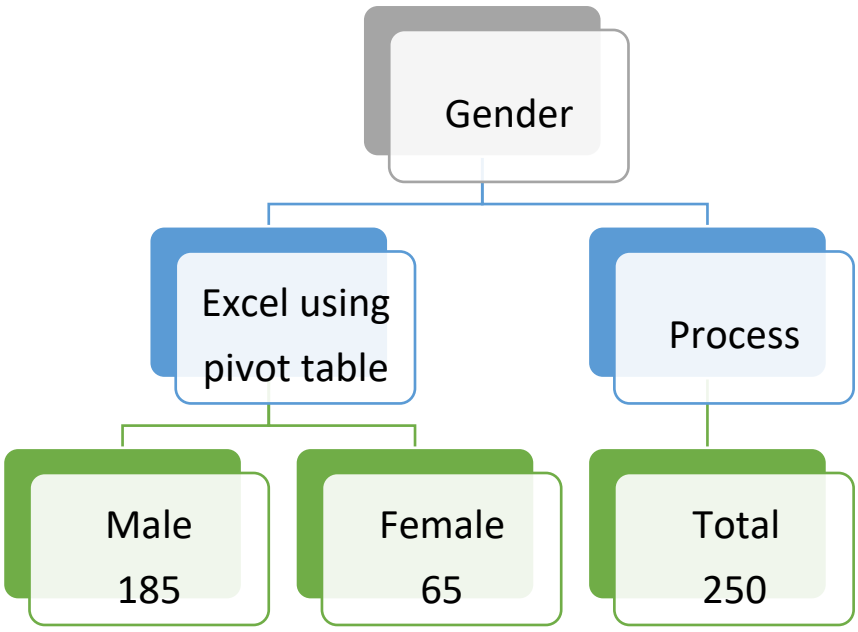
Gender

Process:

In Excel using pivot table to get an output

Output:

Male:185,Female:65,Total:250



Input:

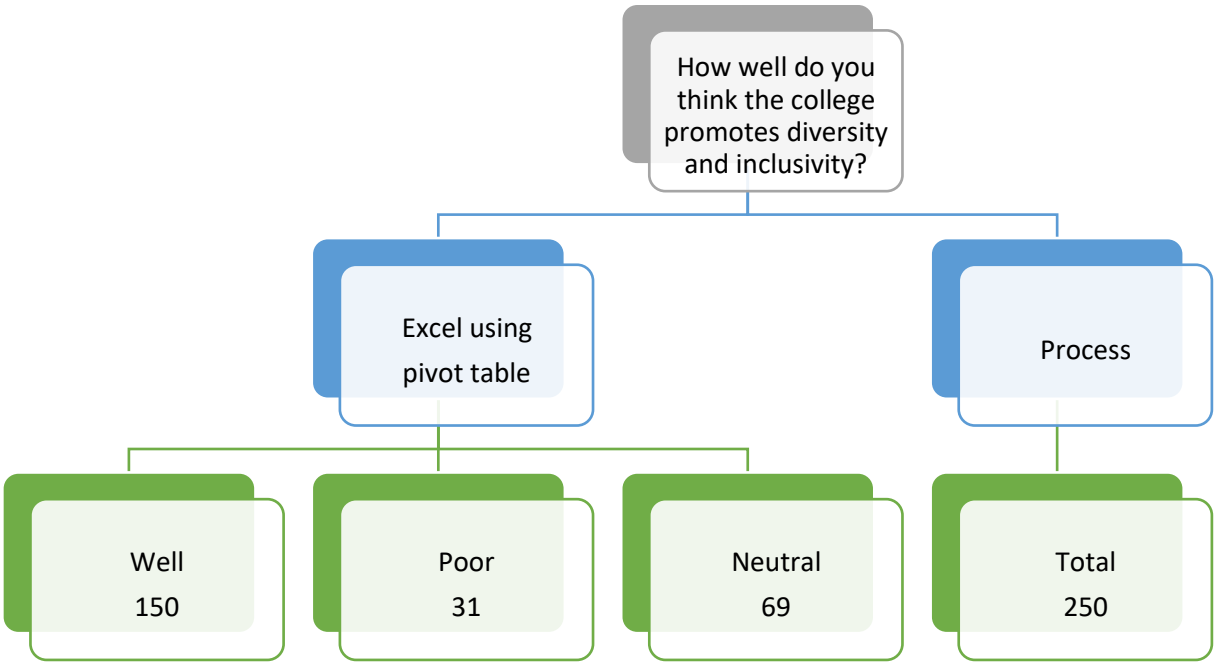
How well do you think the college promotes diversity and inclusivity?

Process:

In Excel using pivot table to get an output.

Output:

Well:150,Poor:31,Neutral:69,Total:250



Input Process Output(IPO) for Python:

Input:

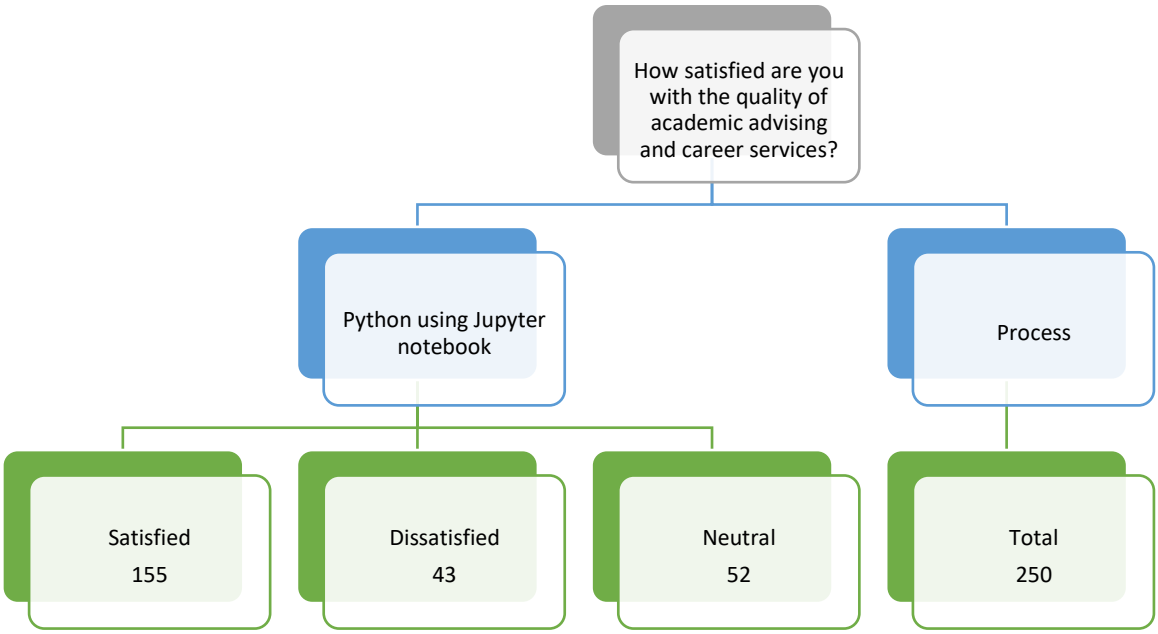
How satisfied are you with the quality of academic advising and career services?

Process:

In Python using Jupyter notebook to get an output.

Output:

Satisfied:155,Dissatisfied:43,Neutral:52,Total:250



Input:

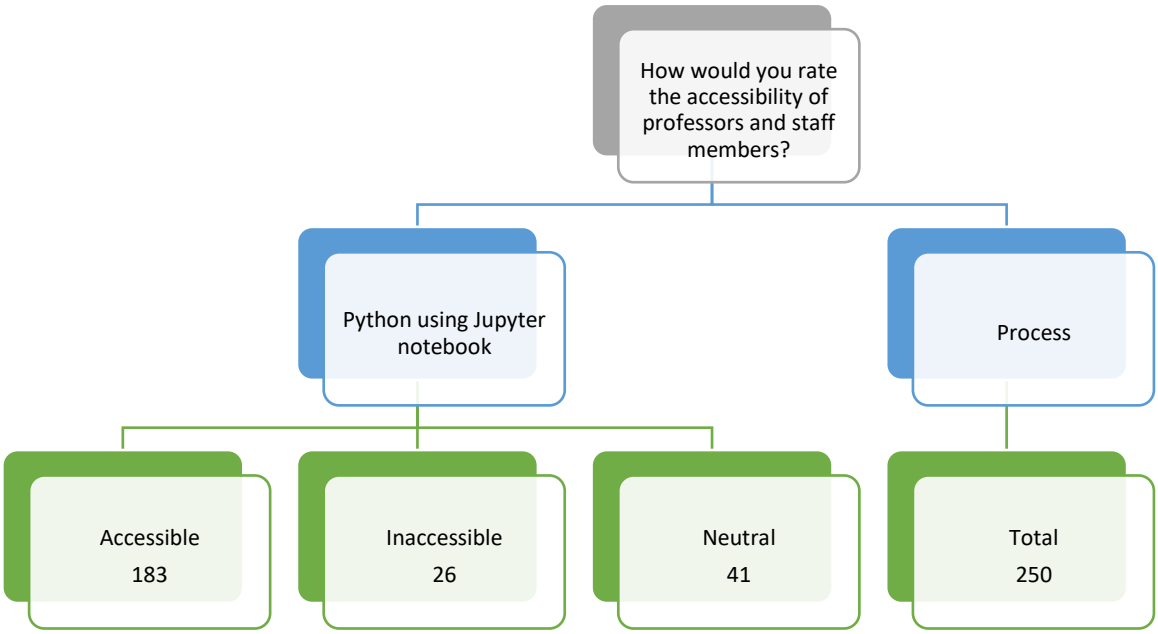
How would you rate the accessibility of professors and staff members?

Process:

In Python using Jupyter notebook to get an output.

Output:

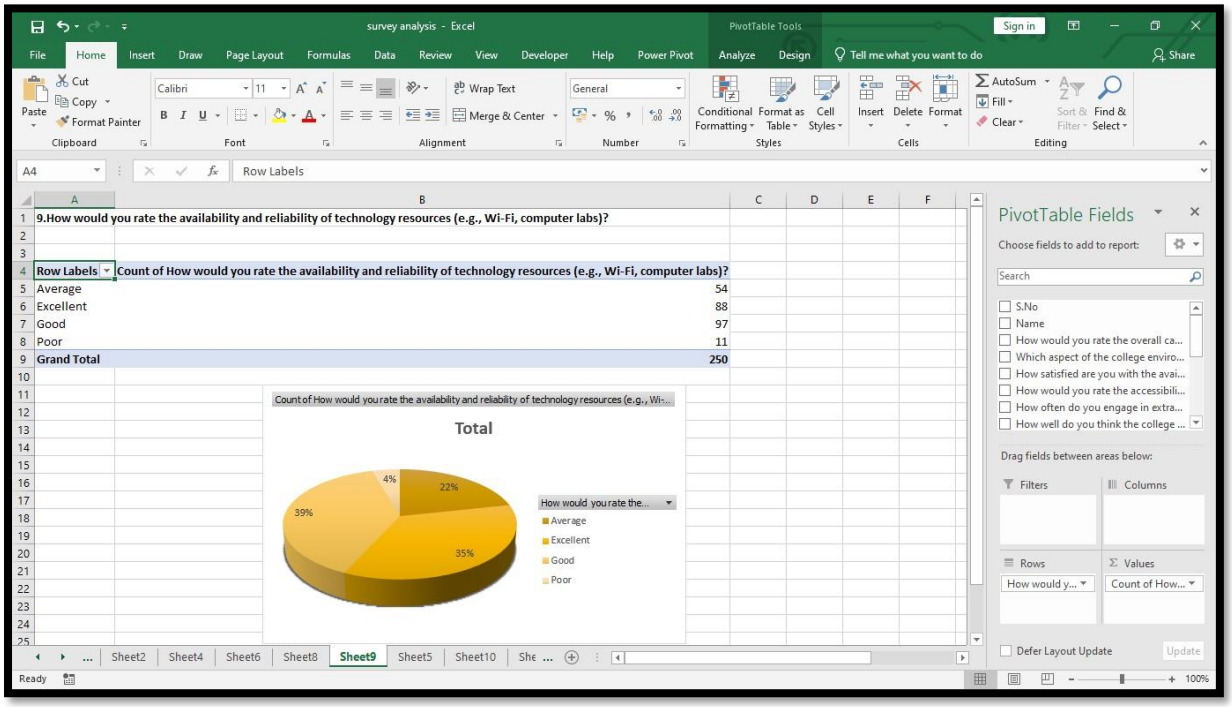
Accessible: 183 , Inaccessible:26 ,Neutral:41,Total:150



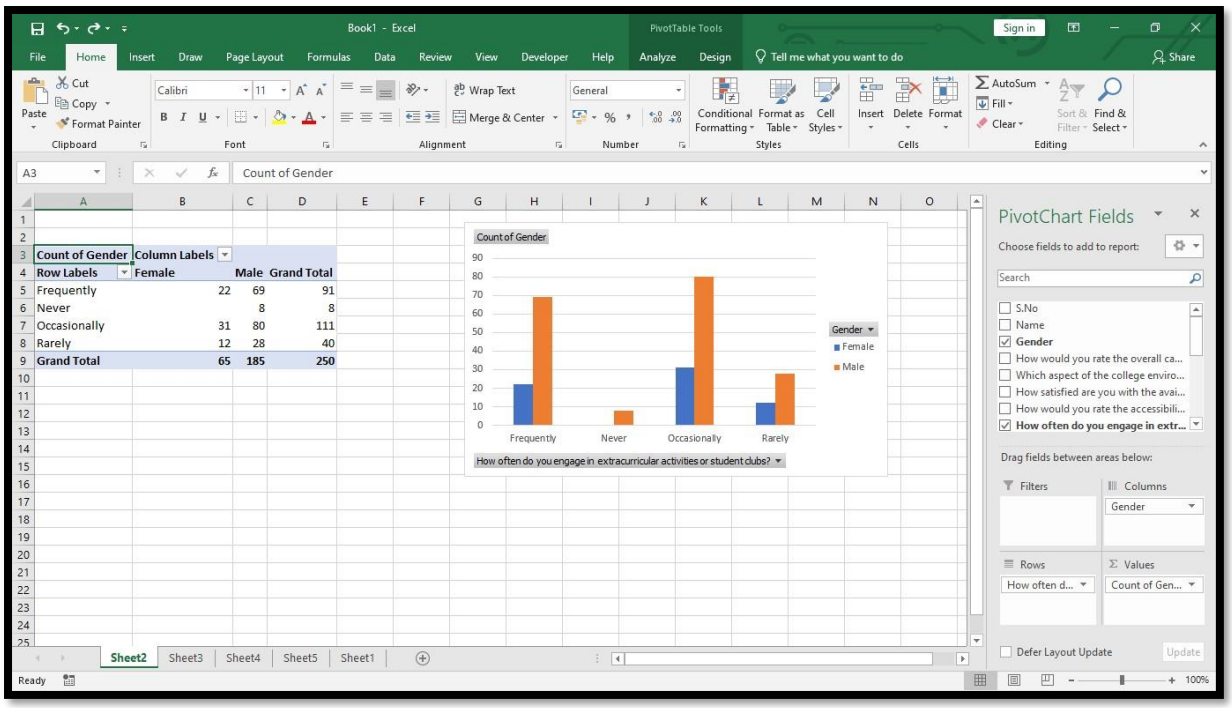
V.RESULTS, FINDING INSIGHTS & DISCUSSION

RESULT-EXCEL:

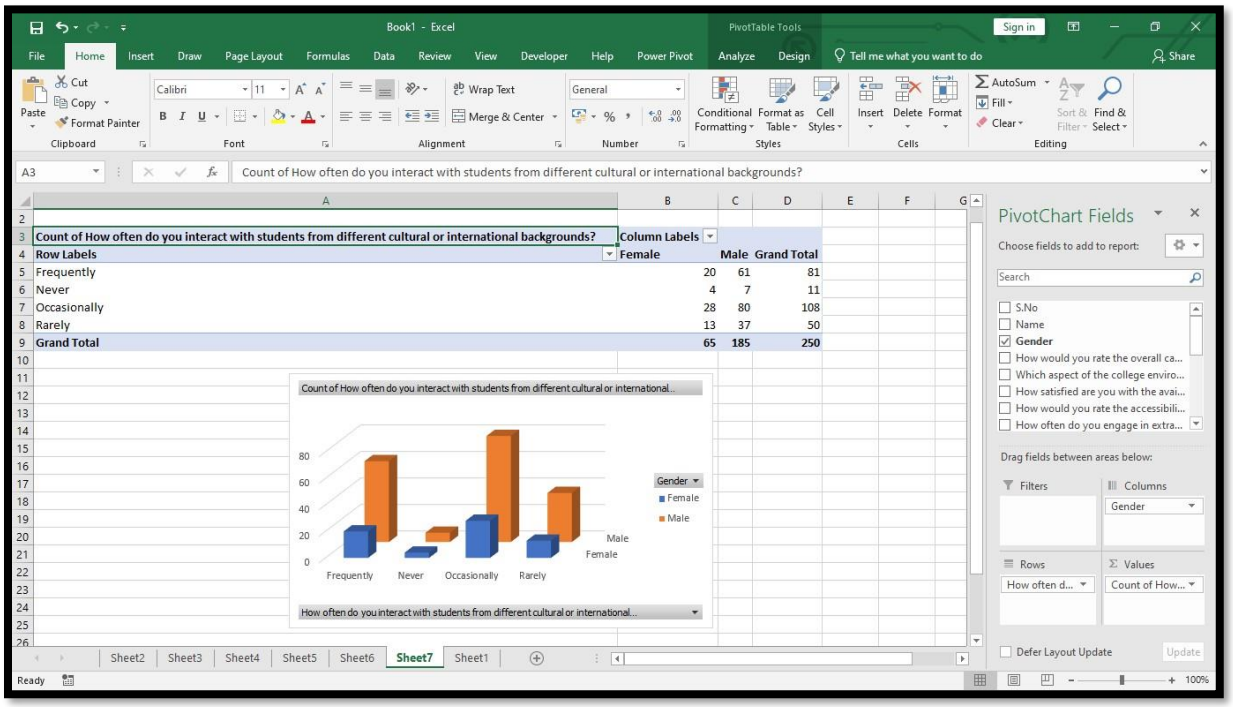
1.How would you rate the availability and reliability of technology resources (e.g., Wi-Fi, computer labs)?



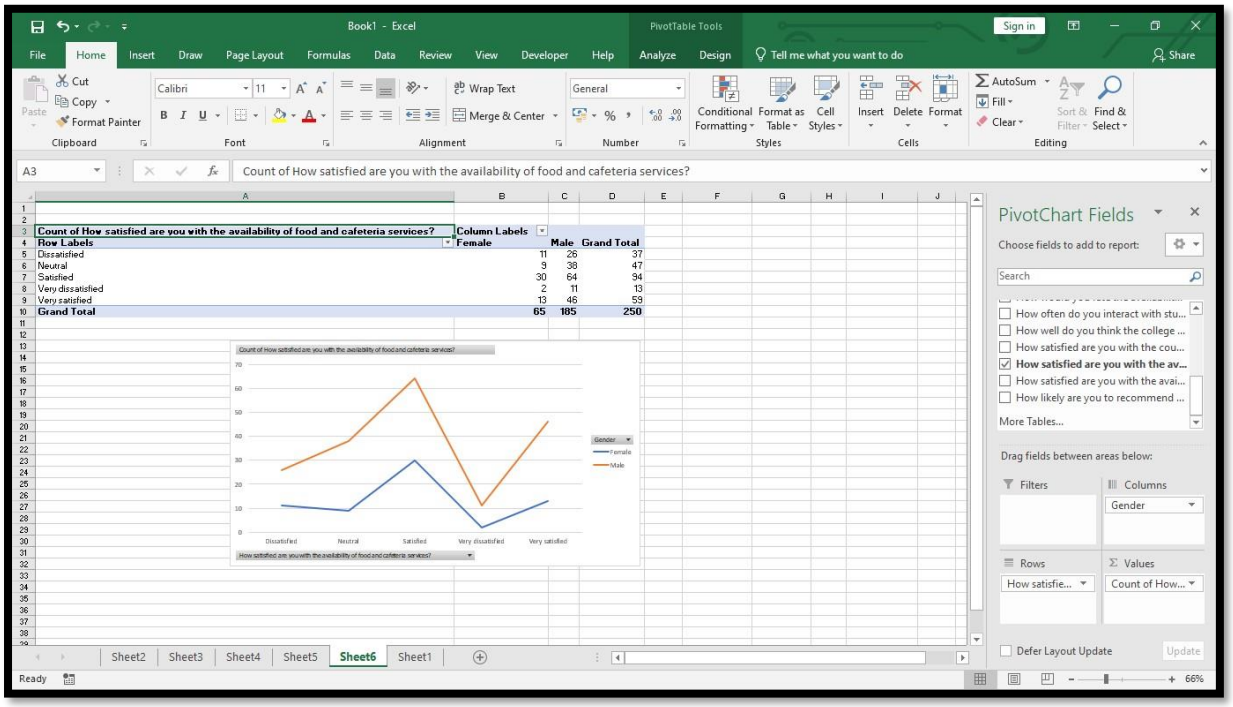
2. How often do you engage in extracurricular activities or student clubs?



3.How often do you interact with students from different cultural or international backgrounds?

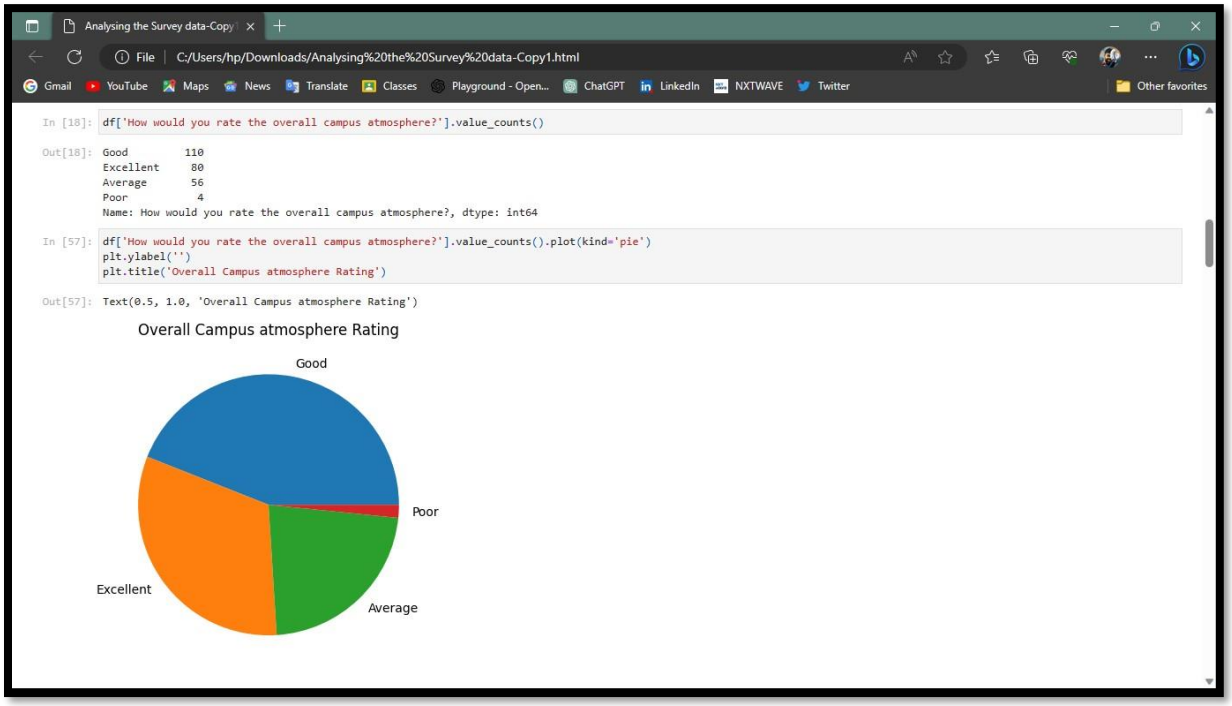


4. How satisfied are you with the availability of food and cafeteria services?

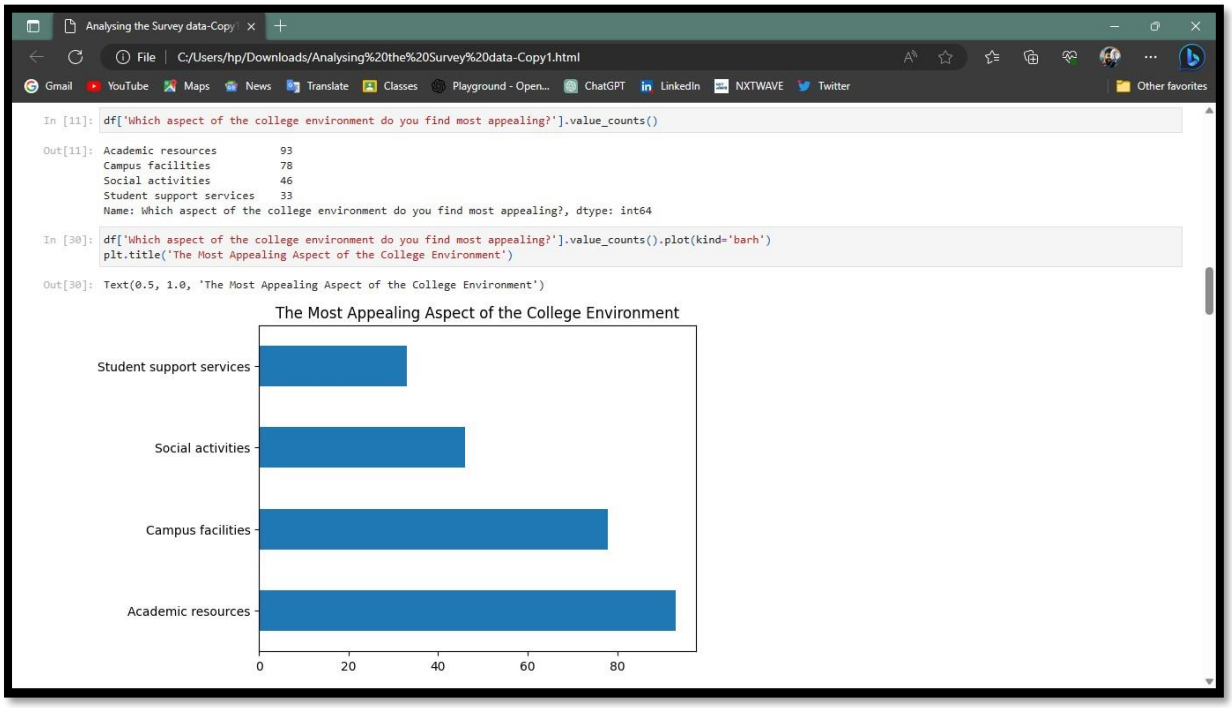


RESULT-JUPYTER NOTEBOOK:

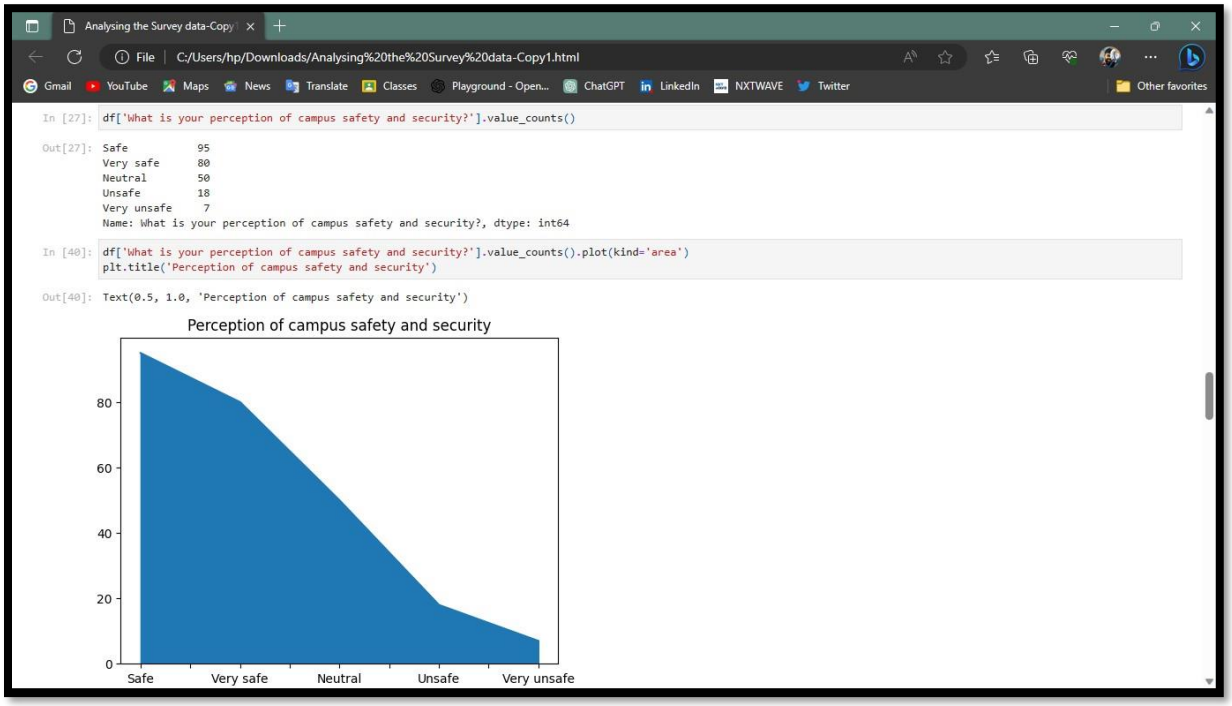
1.How would you rate the overall campus atmosphere?



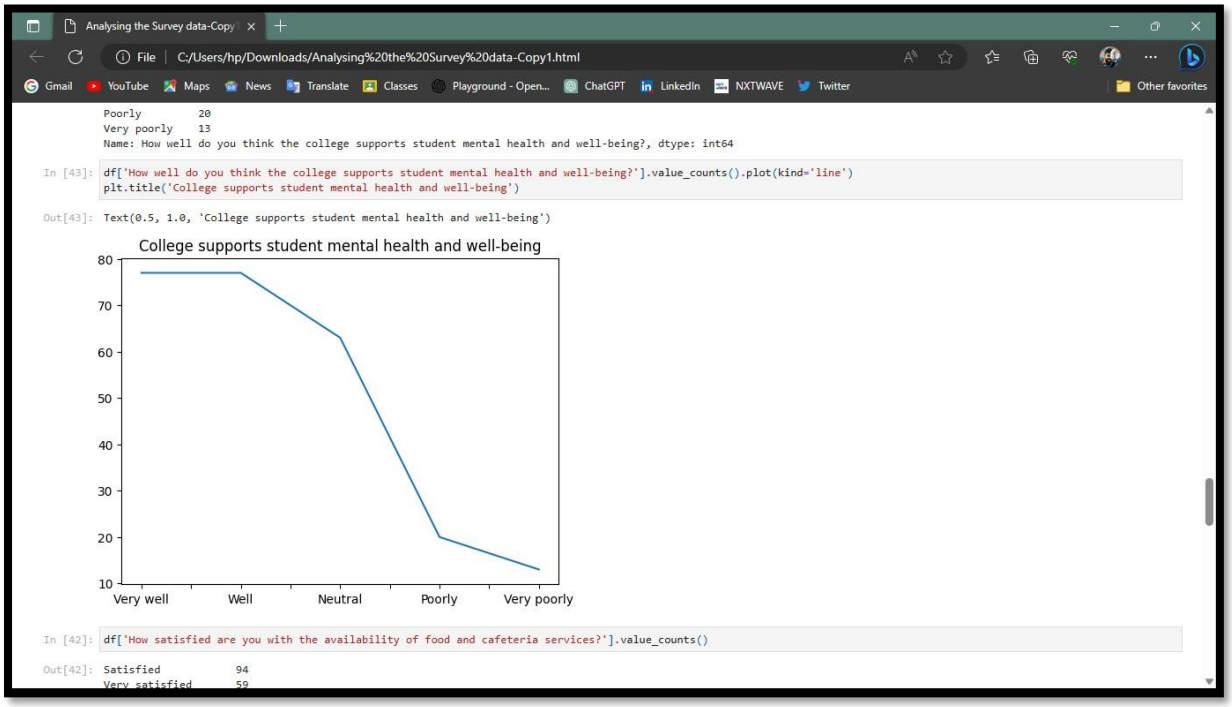
2.Which aspect of the college environment do you find most appealing?



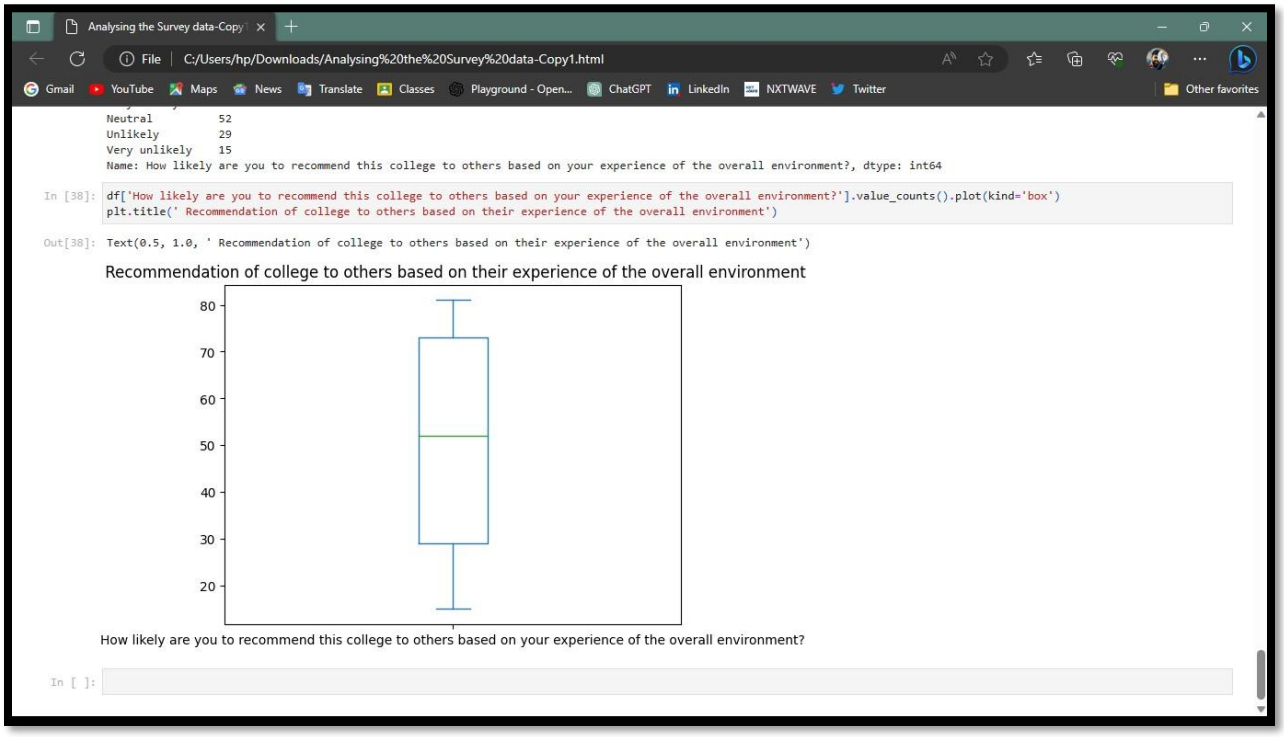
3.What is your perception of campus safety and security?



4. How well do you think the college supports student mental health and well-being?



5.How likely are you to recommend this college to others based on your experience of the overall environment?



VI.SUMMARY & CONCLUSION:

Summary:

The "Assessing the College Campus Experience" survey aimed to gather information and insights about the overall college campus experience from students. The survey covered various aspects such as academic support, social life, campus facilities, and overall satisfaction.

The survey was conducted among a diverse group of college students from different institutions. A total of 250 students participated in the survey, representing a wide range of academic disciplines, class years, and demographic backgrounds.

Key Findings:

Academic Support: The majority of students had positive experiences with academic support services, but some expressed a need for additional resources and personalized support.

Social Life: Many students were satisfied with the social opportunities on campus, citing extracurricular activities, clubs, and events as important factors. Some desired more diverse social activities and better integration among student groups.

Campus Facilities: Students were generally satisfied with the quality of campus facilities, but a few reported maintenance issues, indicating a need for ongoing improvements.

Overall Satisfaction: Most students reported being satisfied with their college campus experience, appreciating the educational opportunities, personal growth, and sense of community.

Conclusion:

The "Assessing the College Campus Experience" survey provides valuable insights into the opinions and experiences of college students regarding their campus life. It highlights the importance of academic support, social engagement, and well-maintained campus facilities in creating a positive college experience. The findings can guide institutions in identifying areas for improvement and making informed decisions to enhance the campus experience.

By understanding the perspectives of students, colleges and universities can create an environment that supports academic achievement, personal growth, and a strong sense of belonging, ultimately providing a transformative college experience for their students.

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VIII.APPENDIX:

EXCEL:

1.How would you rate the availability and reliability of technology resources (e.g., Wi-Fi, computer labs)?

2. How often do you engage in extracurricular activities or student clubs?

3.How often do you interact with students from different cultural or international backgrounds?

4. How satisfied are you with the availability of food and cafeteria services?

5.How well do you think the college promotes diversity and inclusivity?

By using pivot table in excel we analysed the above queries.

PYTHON:

```
import numpy as np import pandas as pd import seaborn as sns import matplotlib.pyplot as plt

df = pd.read_csv('survey.csv')
df

df['How would you rate the overall campus atmosphere?'].value_counts().plot(kind='pie')

df['Which aspect of the college environment do you find most appealing?'].value_counts().plot(kind='barh')

df['What is your perception of campus safety and security?'].value_counts().plot(kind='area')

df['How satisfied are you with the quality of academic advising and career services?'].value_counts().plot(kind='line')

df['How likely are you to recommend this college to others based on your experience of the overall environment?'].value_counts().plot(kind='box')
```

By using Jupyter notebook in python we analysed the above queries.