

## Experiment-1

**Prepare a questionnaire (closed end) containing 25 questions for a specified problem statement:**

**For example, experience of an individual in a restaurant.**

**Problem statement:** Closed end 25 Restaurant survey questions to gather customer feedback and improve menu, service, and overall guest experience.

### Steps:

1. Since it's a closed end questionnaire, we will use google docs to enter these questions.
2. Go to google.com → sign in to your goggle account go to google apps, open google drive, create a new google new folder as SA
3. Lab, create one more folder as experiment NO.01  
Create a new google doc, rename it as experiment No.01 start typing the following question:

### **Ask These Restaurant survey questions to collect customer feedback**

1. What age group do you belong to?
2. How did you discover our restaurant?
3. How often do you dine with us?
4. Did you use any of our discounts or special offers?
5. How would you rate the quality of our food?
6. What did you like best about our menu?
7. Did you feel that the restaurant accommodated your dietary restrictions?
8. In your experiment, is our menu varied enough to satisfy every preference
9. Were you satisfied with our drink menu?
10. Was there anything missing from the menu?
11. Were the staff friendly and welcoming?
12. How was the speed of service?
13. Did the waiter ask whether you'd like to see the dessert menu/or have a cup of coffee at the end of your meal?
14. Did your waiter recommend any of our menu specials?
15. Was your order correct?
16. How quickly did your food arrive?
17. was your order correct?
18. Was the safety seal intact when you opened the delivery bag?

19. How did you find the ambiance in our restaurant?

20. How likely is it that you will visit our restaurant again?

**a) Collects honest feedback:** you will get your customer' unfiltered opinions on your food, service, and ambiance.

**b) Improves quality of service:** Based on the feedback you get, you can identify issues with your menu and service and solve them for better customer experience.

**c) Maps out improvements:** Asking some restaurant service survey questions regularly will help you keep you track of how the changes you've made have impacted customer satisfaction.

**d) gathers customer data:** asking questions that help you learn more about your customers, like their age group and how often they visit your restaurant, will be a life-saver when you want to come out with targeted promotions and offers.

**e) Avoids negative reviews left on third-party platforms:** dissatisfied people tend to post negative review online to complain about a bad restaurant experience. But if you anticipate their move with a restaurant feedback survey they will tell you directly what they don't like instead of posting about it publicity.

#### **Task to be completed by the students:**

Create a Google account

Create a folder and file in Google derive

Typing and editing in Google docs

Taking printout of the document from Google derive

Share the documents using link

Using Gmail for communication

Adding the create new Google account to smart phone or add multiple Google account to smear phone.

**Concussion:25 questionnaires were entered in Google docs.**

## Experiment-2

**Prepare a Google form for a specific problem state to collect the dataset. (for example questionnaire to conduct online quiz)**

**Problem statement: To prepare a quiz on project management through Google form.**

**Prepare a Google form for a specific problem state to collect the dataset. (for example questionnaire to conduct online quiz)**

### Steps:

1. Go to google.com and login in you google account.
2. click on Google apps (9dots) →select drive →click on my drive.
3. Click on new (+symbol) click on folders untitled folder will be created →rename the folder as SA LAB folder will be created (ignore this step if previously this folder is created.)
4. Double click on SA LAB folder to open it→click on new (+symbol) here →and create a new folder and then rename it as Experiment No.02
5. Double click to open Experiment No. 02 folder→click on new (+symbol) here →click on google forms→untitled form will be created (questions tab by default) →change the file name as Experiment No.02 (from top left) →rename the heading a quiz on project management.
6. click on untitled question (will appear by default +) rename the question as→Enter your full name →select the answer type as short answer using drop down next to question →make this question as required.
7. Now click on add question →type the question as→Enter your student register number →Select the answer type as short answer→make this question as required.
8. Click on add question →type the question as →Enter your Email address →select the answer type as short answer → make this question as required →click on 3 vertical dots next to required button →select response validation →select text Email from drop down option.
9. Click on add question →Type the first quiz question→select the answer type as multiple choice →rename the option 1to answer →click on add "other" →click on add option →rename the option 2 to answer →and so to give a choice →now close

the other.... using cross mark→mark this question as required →similarly create 4 questions.

**10.**Click on settings →make this a quiz ON.

**11.**Go back to questions →click on answer key for quiz question only choose the correct answer key and the points value →click on done.

**12.**Click on send (top right) →click on link→shorten URL if required →copy the URL and share this link to other students (any branch) though Gmail or whatsapp → collect minimum 50 responses → analysis the data collected.

**Conclusion:** Quiz on project management was created though google form and it was shared though Gmail, 50 responses were collect and analysed.

### Experiment-03

Send out a survey on your problems statement to number of 50 (By google forms) and collect the data.

**Problem statement: To conduct Individual Student Daily Routine and Academic Performance Survey through Google forms.**

#### Steps:

1. Go to Google. Com and login to your Google account.
2. Click on the Google app (9dots) → select Drive→ click on My Drive
3. Click on New (+symbol) → click on Folder→ Untitled folder will be created→ Rename the folder as SA LAB → click on the create→ SA LAB folder will be created (ignore this step if previously this folder is created)
4. Double click on SA LAB folder to open it → click on New (+symbol) here → and create a new folder and then rename it as Experiment No. 03
5. Double click to open Experiment No. 03 folder→ click on new (+symbol) here → click on Google forms→ Untitled forms will be created (Question tab by default) → change the file name as Experiment No. 03 (forms top left) → Rename the heading as Individual Student Daily Routine and Academic performance survey
6. Click on Untitled Question (will appear y default) → Rename the question as→ Enter your full Name→ Select the answer type as short answer using drop down next to question→ make this question as required
7. Now click on Add question→ Type the question as→ Enter your student Register number→ Select the answer type as short answer→ make this question as required
8. Click on Add question→ Type the question as→ enter your Email address→ select the answer type as short answer→ make this question as required→ click on 3 Email from drop down option
9. Click on the Add question→ Type quiz question→ select the answer type as multiple choice→ Rename the Option 1 to answer→ and so on to give 4 choices→ now close the Other.... Using cross mark- make this question as required→ click on Add question→ similarly create all survey question→ wherever required select the answer type checkboxes to answer more than one option.

**Results:** Survey on a problem statement was done through Google forms and the outcome was analysed

## Experiment -04

### Remove duplicate or irrelevant observation.

**Problem Statement:** To remove unwanted observation from the dataset provides, including duplicate observation or irrelevant observations from the response sheet.

#### Steps:

1. Go to Google. Com and login to your Google account.
2. Click on Google apps(9dots) select drive Click on my drive
3. Open the previous experiments folder, say for example Open experiment no.03 open the experiment open the experimentno.03 Google for->Click responses click on create spared sheet the responses of experiment no.03 will be displayed.
4. To identify the duplicates in the Google sheet tack the below data is example->to identify the duplicates in the Calum B, i.e. B4:B13
5. Click on format conditional formatting
6. Conditional format rules Apply to range B4:B13 format rules select select custom formula is types the formula as=count if (B4:B13, B4)>1 formatting style any custom fill colour (yellow) click on done
7. The duplicates will be identified with identified colour (yellow) as shown below
8. To remove duplicates select the entire range as shown below
9. Go to data select data clean-up remove duplicates
10. Remove duplicates tick only the column B click on remove duplicates
11. The duplicate will be removed from the sheet click on ok
12. Duplicate are removed from the range

#### OUTPUT

Duplicates and irrelevant data are identified and removed from responses sheet of Google form

## Experiment -5

In Microsoft Excel spread sheet draw that follow frequency distribution table for that given data

(Data set should contain minimum 50 data)

**Aim:** To prepare Microsoft Excel spread sheet and to draw frequency distribution table for the data.

**Purpose:** A data in excel spread sheet will be helpful for collecting data set and analysis in charts.

### Steps involved:

**Step 1)** Enter your data into a worksheet.

**Step 2)** Find the class interval and upper limit of data set.

**Step 3)** In the data menu class data analysis to open the data analysis dialog box.

**Step 4)** In the data analysis box select histogram and click ok button.

**Step 5)** In histogram enter that data array into the input rang box bin range (upper limit data) output range chart output and click ok to display the frequency distribution in charts.

**Step 6)** On Bar charts right click to find formats series option then go to series option to make gap width 0% and wary colours by pointing fill button.

## Experiment-6

**In micro excel spread sheet draw the relative frequency distribution table for the given data (data set should contain minimum 50 data)**

**Aim:** To prepare Microsoft excel spread sheet to draw the relative frequency distribution table for the data.

**Purpose:** The data in excel spread sheet will be help full for collecting data set and finding relative frequency distribution in charts

Steps involved

**Step1:** Enter your data into a worksheet

**Step2:** Find the class interval and upper limit of data set

**Step3:** In the data menu choose data analysis to open the data analysis dialog box

**Step4:** In the data analysis box, select Histogram and click ok button

**Step5:** In histogram enter the data array into the input range box, in range (upper limit data) Output range and click ok button

**Step6:** To find relative frequency use the relation each frequency value by total frequency then frequency and relative frequency values to display in chart (on bar charts right click to find format series option then go to series option to gap width 0% and vary colours by paint using fill button



## Experiment -7

**Using Microsoft Excel spreadsheet plot bar graph for the data collected from 100 people (for example. Conduct a survey on the favourite of a person in your locality restricting to 5 to 6 fruits) Explain the bar graph with minimum 30 works.**

**Aim:** To conduct a survey on the favourite fruit of 100 people using an excel spreadsheet and to plot bar graph charts.

**Purpose:** the data in excel spread sheet is helpful collecting data set and analyse in bar graph chart

Steps involved: -

**Step 1:** Enter your data into a worksheet.

**Step 2:** Count number of fruit with respect to their name to individual person using count if relation and find total response.

**Step 3:** Select the data that is 20 into the chart (data cell having name of fruits and count of fruits.)

**Step 4:** Select the data that go into the chart (data cell having name of fruits and count of fruits.)

**Step 5:** Modify the chart by adding title name axis titles and format data labels.

## EXPERIMENT-8

Using Microsoft Excel spread sheet plot pie chart for the data collected from 50 people (for example Conduct a survey on the smokers with respect to their ages in your locality). Explain the pie chart with minimum 30 words.

**Aim:** To conduct survey on favorite fruit of 100 persons using excel spread sheet and to plot bar graph for the collected data.

**Purpose:** The data in excel spread sheet is helpful for collecting set and analyze in bar graph charts.

Steps involved:

**Step 1:** Enter your data into a worksheet.

**Step 2:** Find count of age of smokers with respect to their range.

**Step 3:** select inside menu to find pivot table and click on pivot to enter table data and select existing worksheet to display in excel cell.

**Step 4:** on right side of screen, in pivot table fields, drag more table value between areas row and value.

**Step 5:** Right click on any row label value for grouping, define starting at and ending value with common different then press Ok button

**Step 6:** Right click on age of smoker value for summary value and click count.

**Step 7:** select the data that go into the pie chart. (data cell having row labels and count of age smokers)

**Step 8:** select insert menu, recommended pie chart and choose the chart you like

**Step 9:** modify the chart by edding tittle name.

## Experiment-9

**Using Microsoft excel spread sheet draw a line graph for the given dataset [ The daily pocket expenses of 206 students in a school]**

**Aim:** To draw line graph for the given data set.

**Purpose:** The data in excel spread sheet is helpful for collecting data set and analyse in line graph chart.

Steps involved:

**Step 1:** Enter your data into worksheet

**Step 2:** Select the data that go into the chart data cell having student name and pocket expenses.

**Step 3:** select insert menu, recommended line chart and choose the chart you like.

**Step 4:** Modify the chart by adding title name, axis titles and format data labels.

## Experiment -10

**Using Microsoft Excel Spread Sheet draw frequency polygon and frequency curve for the data collected from 50 people (For example, Marks obtained by the students in your class in 5 subjects in previous examination). Explain your observations from the graph in minimum 30 words.**

**Aim:** To prepare Microsoft excel spread sheet and to draw frequency polygon and frequency curve for the data.

**Purpose:** A data in excel spread sheet will be helpful for collecting data set and analyses in charts.

Steps involved:

**Step1:** Enter your data into a worksheet.

**Step2:** Find the class interval and upper limit of data set.

**Step3:** In the data menu, choose data analysis to open the data analysis dialog box.

**Step4:** In the data analysis box, select Histogram and click OK button.

**Step5:** In histogram, enter the data array into the input range box, Bin range (upper limit data), output range, cumulative percentage & click OK to display the frequency distribution in charts. (Individual for each subject follow the same steps)

**Step6:** Add the first row value by `0` in all subjects.

**Step7:** Select the data that go into the polygon line chart (data cell having Frequency column of all Subjects).

**Step8:** Select insert menu, go to inserted line chart & choose the chart you like.

**Step8:** Select insert menu, go to inserted line chart & choose the chart you like.

**Step9:** Modify the line chart by adding tittle name, axis tittles and format data labels.

**Step10:** To draw frequency polygon curve, select data of cumulative frequency of all subjects then select insert menu, go to scatter then select scatter with smooth lines.

**Step11:** Modify the Curve by adding title name, axis titles and format data labels.

## Experiment-11

**Using Microsoft Excel Spread Sheet construct a box plot for the given dataset. (For example dataset can be the number of passengers in a flat form at different time in a day).**

**Aim:** To draw box plot for the given dataset.

**Purpose:** The data in excel spread sheet is helpful for collecting data set and analyse in line box plot charts.

Steps involved:

**Step1:** Enter your data into a worksheet.

**Step2:** Select the data which is in passenger's column to find minimum, quartile1, median, quartile3 and maximum values using the following relations

For Minimum value: =MIN (B8:B29)

Quartile value: =QUARTILE (B8:B29,1)

Median value: =MEDIAN (B8:B29)

Quartile value: =QUARTILE (B8:B29,3)

Maximum value: =MAX (B8:B29)

**Step3:** Find the difference above values by keeping minimum value as constant.

**Step4:** Select the data that go into the box plot chart (data cell having functions and difference column)

**Step5:** Select insert menu, recommended box plot chart & choose the chart you like.

**Step6:** Modify the chart by adding title name, axis titles and format data labels.

## Experiment 12

**Using Microsoft excel spread sheet construct a leaf plot for the given dataset. explain the graph with minimum 30 words**

**Aim:** to construct a leaf plot for the given dataset.

**Purpose:** the data in Excel spread sheet is helpful for finding leaf of data values.

Steps involved:

**Step 1:** enter your data into a worksheet.

**Step 2:** find maximum and minimum value of data values, using the relation

Min = AVERAGE (data range)

Max = MAX (data range)

**Step 3:** enter stem value from 1 to 9

**Step 4:** to find leaf of data values use relation

**OUTPUT**

## Experiment-13

**Using Microsoft Excel Spread sheet to find Mean, Mode and Median for the data given and also represent them in Histogram.**

**Aim:** To find the Mean, Mode and Median for the given data and also represent them in Histogram.

**Purpose:** The data in excel spread sheet will be helpful for collecting data set and finding mean, mode and median in charts.

Steps involved:

**Step1:** Enter your data into a worksheet.

**Step2:** Find mean, mode and median using the default functions.

**Mean:** =AVERAGE (Data range)

**Mode:** =MODE (Data range)

**Median:** =MEDIAN (Data range)

**Step3:** Select insert menu to find pivot table & click on pivot table to enter table data & select existing worksheet to display in excel cell.

**Step4:** On right side of screen i.e., in pivot table fields, drag more table values between areas rows and values.

**Step5:** Right click on any row label values for grouping, i.e., define starting at and ending value with common difference then press ok button.

**Step6:** Right click on age of Height values for summarizing data into count, i.e., go to summarize values & click count.

**Step7:** Select the data that go into the Histogram chart (data cell having row labels & Height of count).



**Step8:** Select insert menu, recommended bar plot chart & choose the chart you like.

**Step9:** Modify the chart by adding title name, axis titles and format data labels. (Right click on any one of bar chart then go to data series & make gap width 0%, vary colours by point using fill button).

## Experiment-14

**Generate a 50 random data sample (even and odd number dataset) using Microsoft Excel spread sheet and determine the range and Quartiles.**

**Aim:** To generate 50 random data containing even and odd dataset and to determine range and quartile.

**Purpose:** The data in excel spread sheet will be helpful for collecting data set and finding mean, mode and median in charts.

Steps involved:

**Step1:** Enter your even and odd data set into a worksheet.

**Step2:** To find Quartile (Q) i.e., Q1, Q2 and Q3 for even dataset use the following relations.

Q1: QUARTILE(Datarange,1)

Q2: QUARTILE(datarange,2)

Q3: QUARTILE(datarange,3)

**Step3:** To find Quartile range use the relation

**Step4:** Similarly, we can find for odd data set using the same dataset

### Output

	Even data		Add data set	
	Q1	23	Q1	23
	Q2	34	Q2	33
	Q3	37	Q3	34
	IQR	14	IQR	11

## Experiment-16

Collect data of any 2 livestock population from 50 different houses in your locality (problem statement can be changed according to priorities of the tutor) and determine the standard deviation of the data in Microsoft Excel spreadsheet and brief your inference with less than 30 words.

**Aim:** to collect two livestock populations from different houses and to determine the standard deviation of the data in Excel.

**Purpose:** the data in Excel spreadsheet will be helpful for collection of a data set and to find the standard deviation of the data in Excel.

Steps involved

**Step 1:** Enter your data into a worksheet having livestock populations of cattle and buffalo from different houses.

**Step 2:** to find the standard deviation of cattle and buffalo use the following formulas.

Cattle: =STDEV.P(data range)

Buffalo: =STDEV.P(data range)

**Output:**

Standard deviation	
Cattle	buffalos
22.59948	20.58178807

## Experiment-17

**Collect the data of two wheelers (with a ride and a pillion) crossing a busy junction in your locality in the peak hours (problem statement can be changed according to priorities of the tutor) and determine the variance of the data in Microsoft excel spread sheet and brief your inference with less than 30 words.**

**Aim:** To collect two livestock population from different houses and to determine the variance of the data in excel.

**Purpose:** the data in excel spread sheet will be helpful for collecting dataset and to find variance of the data in excel.

Steps involved:

**Step1:** Enter your data into a worksheet having number of two wheeler crossing junction.

**Step2:** To find variance use the default relation

Variance: =VAR.P(data range)

**Output:**

Variance
10062.5536

## Experiment-18

**Using Microsoft excel spreadsheet draw a skewness graph and kurtosis graph for randomly generated detest.**

**Aim:** To determine skewness and kurtosis for randomly generated detest.

**Purpose:** The data in excel spread sheet will be helpful for collecting data set and to find skewness and kurtosis.

**Step involved:**

**Step 1)** Enter your data value into O. Worksheet

**Step 2)** Generated the random values using the detdoults relation

=RANDOMBETWEEN (1, 100)

**Step 3)** To find skewness and kurtosis go to data then data analysis. Select descriptive statistics and click ok button.

## Experiment\_19

**Write a python program to convert decimal to binary, octal and hexadecimal**

```
dec=15
b=bin (Dec)
o=oct(Dec)
h=hex(Dec)
print ("decimal number is:,"dec")
print ("binary value is:,"b")
print ("octal value is:,"o")
print ("hexadecimal value is:,"h")
```

### **OUTPUT**

```
decimal number is:15
binary value is: 0b1111
octal value us:0017
hexadecimal value is:0xf
```

## Experiment-20

Write a python program to add 2 integers and 2 strings and print the result.

```
num 1=100
num 2=500
sum=num 1+num 2
print = ("the addition of two integers is sum)
str1 1="Govt polytechnic "
str1 2="Bagepalli":
print ("The addition of two strings is"sum 2)
```

### Output:

The addition of two integers is:600

The addition of two strings is govt polytechnic Bagepalli

## Experiment-21

Write a python program to find the sum of first 10 natural number.

```
num = 1
sum = 0
while (num <=10):
    sum = sum + num
    num = num+1
print ("the sum of first 10 natural numbers is: ", sum)
```

### OUTPUT:

The sum of first 10 natural number is : 55



## Experiment-22

Write a python program to find whether the number is odd or even

```
num=101
if num%2==0:
    Print ("the number is EVEN")
else:
    Print ("the number is ODD")
```

### OUTPUT:

the number is ODD

## Experiment-23

Write a python program to find the variance and standard deviation for the given data.

```
Import statistics
Sample =[130,137,136,142,135]
Var=statistics.variance (sample)
Print ("The variance is:"var)
Sd=statistics pstev (sample)

Print ("the standar deviation is:",Sd)
```

### Output

The variance is:148

The standar deviation is 3,47070812334209

## Experiment-24

**Write a python program to display student marks from the record.**

```
file = open ("student1","r")  
line = file. read lines ()
```

```
for x in lines  
print(x)
```

```
file. Close ()
```

### **Output:**

student.txt

student name: Student marks

Ramesh: 99

Mruthunjaya: 90

Manjunath: 90

Suresh: 100

Santhosh: 100

kiran: 100

## Experiment-25

Write a python program to create a labelled bar grap using matplotlib pyplot

```
import matplotlib.pyplot as plt
x=("Ramesh","priya","Suresh","Kasha","roopa")
y=(74,23,80,34,99)
plt.xlabel("Student Name")
plt.bar(x,y)
for(i,j) in zip(x,y):
    plt.annotate(i,j)
plt.show()
```

## Experiment-26

Write a python program to create a labeled pie chart using matplotlib .pylot.

```
Import matplotlib.pyplot as plt
```

```
X= ["Ramesh","Priya","Suresh","Akshay","Roopa"]
```

```
Y= [74,23,80,34,99]
```

```
Plt.title("student marks pie chart")
```

```
Plt.pie(y, labels=x,autopct='%d')
```

```
Plt.show()
```

OUTPUT: