SECI2143: Probability & Statistical Data Analysis
2021/2022 – Semester 2

PROJECT 1 (5%): Assessment Rubric

List Group Members:	**TOTAL MARKS (30)**
1. MUHAMMAD SAIFUDDIN BIN ISMAIL (A21EC0093)	
2. NUR SYAFIKA BINTI MOHD SALMIZI (A21EC0115)	
3. MAATHUREE A/P VEERABALAN (A21EC0051)	
4. FARAH NABILAH BINTI NAJMUDIN (A21EC0023)	

-EVALUATIONS-

Part A: Data Type		
Type	**No. of questions**	**Mark**
Nominal	(any)	2
Ordinal/Interval	< 3	3
	>= 3	4
Ratio	< 4	3
	>= 4	4
Total	[____/ 10] * 5 =	

Part B: Data - Graphical Presentation	
Type	**Mark**
Bar Chart/Pie Chart	2
Scatter Plot	2
Stem-and-Leaf / Dot plot	2
Box Plot	2
Frequency Distribution	2
Histogram	2
Total	[_____/12] * 10 =

Part C: Format & Content of Report				
Item	**Mark**			
Introduction	**1**	**2**	**3**	**4**
Focus on topic (Content)	**1**	**2**	**3**	**4**
Support for topic (Content)	**1**	**2**	**3**	**4**
Conclusion (Organization)	**1**	**2**	**3**	**4**
Grammar & Spelling (Conventions)	**1**	**2**	**3**	**4**
Total	[____/20] * 15 =			

UTM UNIVERSITI TEKNOLOGI MALAYSIA

SCHOOL OF COMPUTING
Faculty of Engineering

Semester II 2021/2022

SECI 2143 - 01

(Probability & Statistical Data Analysis)

TITLE : Survey on Internet Learning during Pandemic Covid-19

Group 5

NAME	MATRIC NUMBER
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Submitted to:

Dr Azurah A Samah

1) Introduction

The spread of Covid-19 has impacted many of us to explore and increase the use of the Internet especially for students. Most educational institutes have shifted to online learning platforms to keep the academic activities going. Hereby, we include the matter in our research to find out how important the Internet and the commons are the Internet being used . The title is "Survey on Internet Learning during Pandemic Covid-19" and we choose a sample of the population from people around us that use Internet on any purposes . There were 69 responses collected to make up our analysis. We are interested in this study because we had been a part of students that were included in online learning during the pandemic. We found out and expected to see an increase usage on Internet spending among all of people that need the Internet in their daily life especially during this pandemic Covid-19 . People currently depends on the Internet to do their work , research and so on .So , we decided to study this research specifically to see the results .

2) Data Collection

We created a google form to collect the sample data . Here's the question .

- Name
- Gender
- Age
- Your current location
- Number of Internet user (in a household)
- State your income level
- State your Internet monthly bill (RM) (budget cost)
- In your opinion , what is the highest level of education that need higher demand for internet spent ?
- Types of Internet connections you use
- Purposes using Internet
- Types of devices use
- Time spend on internet per day
- Hours spent of internet during weekend
- Internet upload speed(Mbps)
- Internet download speed(Mbps)
- Internet satisfaction
- Your level of Internet literacy

We export the data into Microsoft Excel and start to analyze the data .

Here's the link :
https://docs.google.com/spreadsheets/d/1iv7p3vNMekUecaYrggfZoUbymQxEWeQPLhu1faUumHg/edit#gid=0

3) Data Analysis

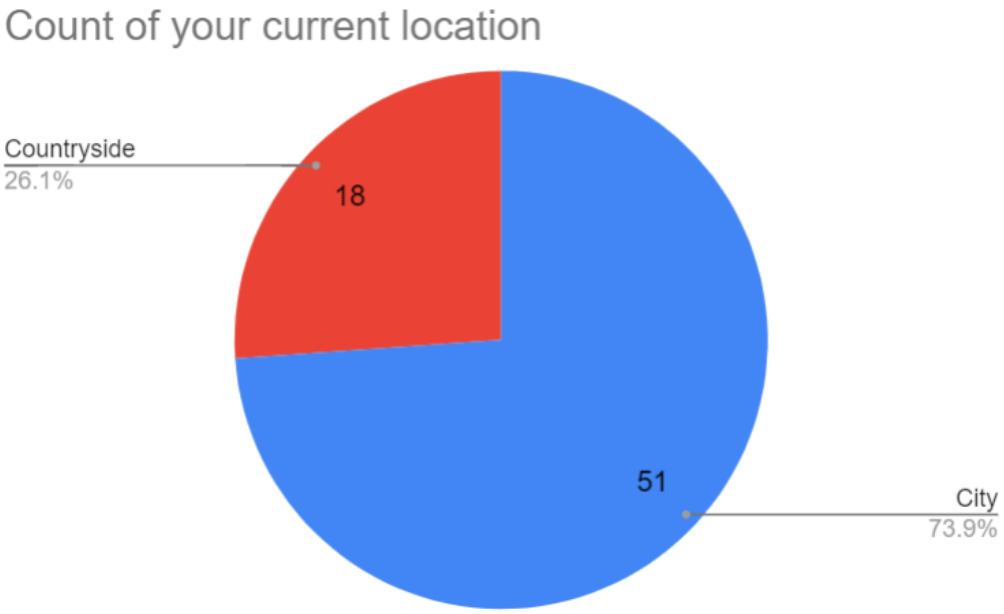


Chart 3.1

Based on the pie chart, the current location can impact the internet speed. From the survey, our sample participants are mostly from the city which is 51 people meanwhile the rest 18 people are from the countryside. The size of the countryside took ¼ of the chart and ¾ the size of the chart majority from the city. We expect a better internet connection in the city than the countryside as the better development of infrastructure and wifi access in the city despite many complaints from rural areas, to provide a better internet service provider.

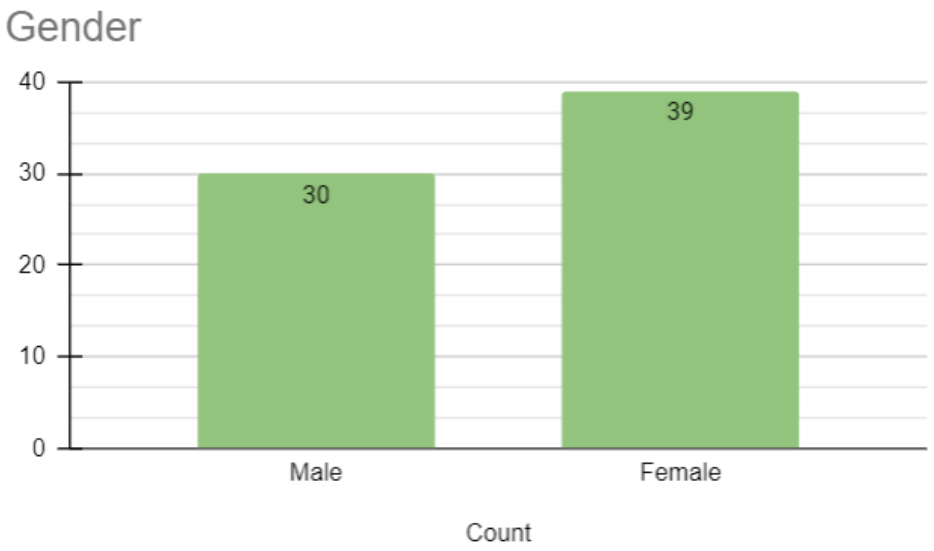


Chart 3.2

Based on the bar chart, the number of males are 30 while the number of females are 39. The majority of gender is conquered by females and followed by the male. This showed that the population of females is higher than males in participation in the survey we did.

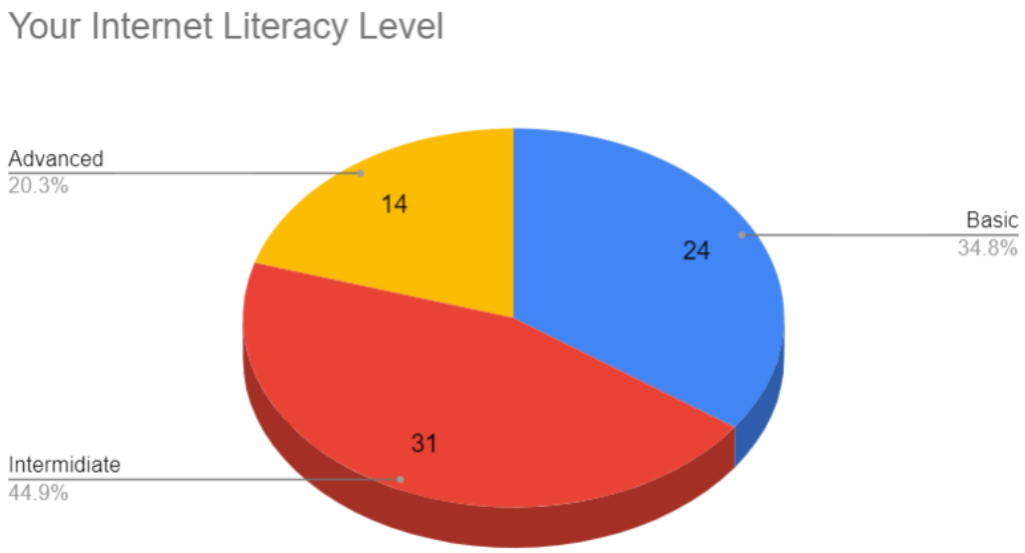


Chart 3.3

The pie chart shows the level of Internet literacy from the basic, intermediate to the most skillful, the advanced. The basic, which is 24 people stated that they know the basic knowledge of the Internet for example they are new to cloud computing or specific service and computing experience. Next, the highest count,which is 31 people with intermediate level of Internet literacy, shows that their skills improve in Internet knowledge that shows that they had better experience and exploration in the area. Lastly, the least count of 14 people claim that the advanced level of Internet literacy. This shows that they can do better and understand the complex concepts of the Internet world.

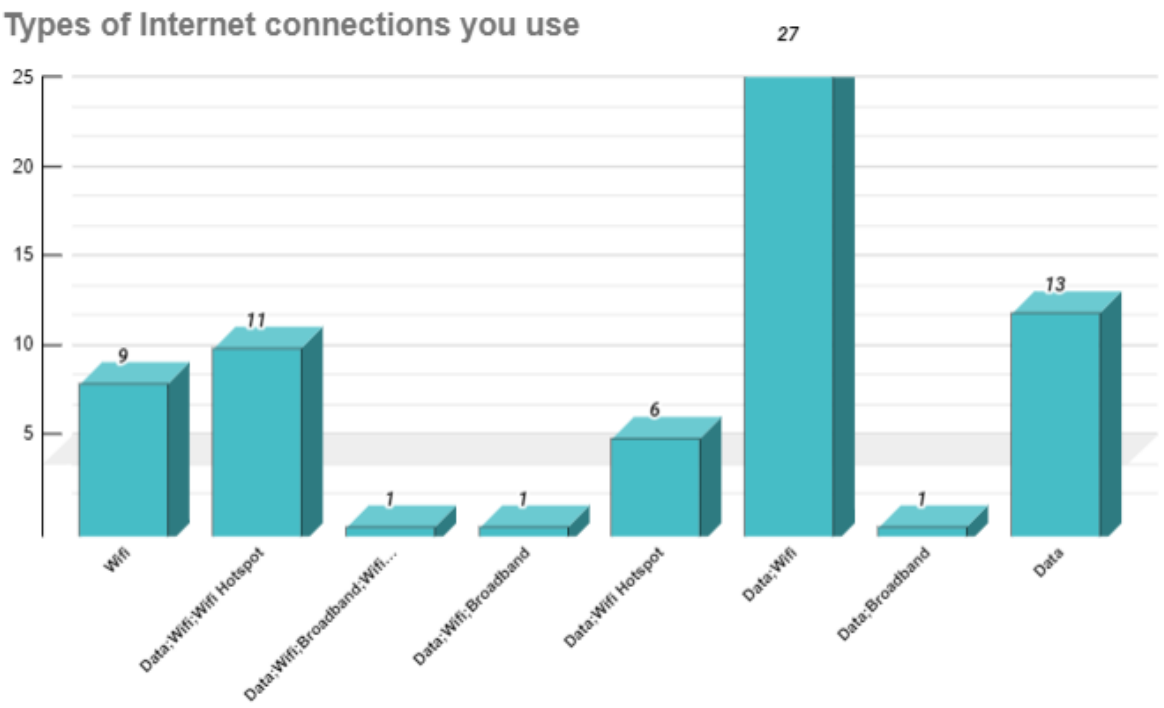


Chart 3.4

Based on the graph titled "Count of Types of Internet connection you use", the survey includes the multiple choices of Data, Wifi, Broadband and Wifi Hotspot. The highest demand Internet connection that the user's choices is Data and Wifi with 27 counts. Next with 13 counts, the user chooses Data only followed by users that choose Data, Wifi, Broadband and Wifi Hotspot at the same time. 9 counts from single Wifi choice and 6 counts from users that choose Data and Wifi Hotspot. Lastly, the remaining user with 1 count from each had using all Internet connections, then Data,Wifi and Broadband user, and Data, Broadband user. Overall statement, conclude that the popular choice of using data and wifi in a household and the least popular choice is broadband.

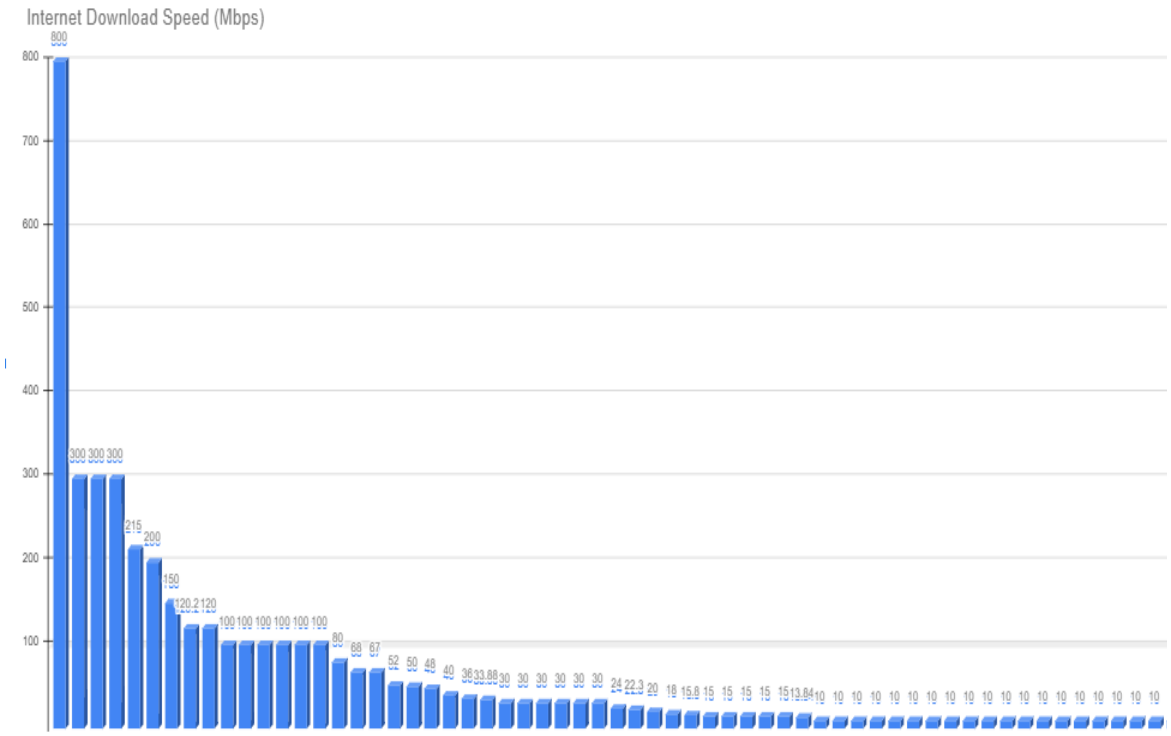


Chart 3.5

From the bar chart, the Internet download speed is included based on wifi, mobile data, broadband and other Internet connections that are available. We conclude that the highest speed from the survey is 800 Mbps while the lowest speed is mostly 10 Mbps. The most common internet speed is 10 Mbps, 100 Mbps and 300 Mbps. However, a good range for Internet speed is 25Mbps and above, the higher the connection, the greater the speed of the Internet. Based on the purposes using the Internet chart provided below, mostly our survey participant's use the Internet for studies, of which 57 people should have at least 25 Mbps for a great learning experience. Next, for work and business purposes, that 3 and 4 counts for each they also should have 25 Mbps for great dealing during working and business. However, for entertainment purposes with 5 people, they only need 1 to 10 Mbps for smooth gaming experience, streaming and socializing.

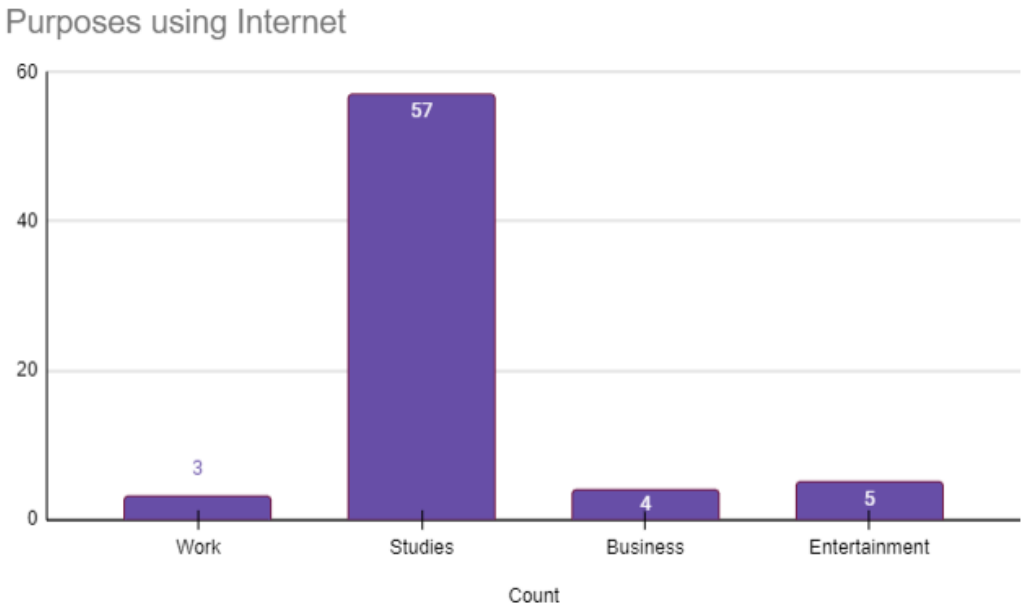


Chart 3.6

Based on the bar chart above , there are 4 types of purposes people use Internet connection nowadays . Usually , people work , study , do their business and look for entertainment on the internet . From the plot, we can conclude that most people in the pandemic era study using the Internet .We can see that only studies got the highest number of respondents, which is 57 respondents . The lowest count of respondents were 3 people and the other chose work using the Internet followed by business and entertainment .

Quantitative data:

Ages of 70 respondants	
Stem	Leaf
1	3 7 8 9 9 9
2	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 1 1 1 1 1 1 1 1 1 1 2 2 2 2 2 3 3 3 3 3 5 5 6
3	2 6 6 8
4	1 3 3
5	6
	Leaves are 1 Digits

From this stem and leaf chart,we can see the minimum values of ages from the 70 respondents is 13 and the maximum values out of 70 respondents is 56.The mode and median of this chart can also conclude that is both respectfully have the same values that is 20,while the mean of this chart is 22.93.From the stem and leaf chart,we can also calculate the standard deviation which is 7.03 and the variance 49.43.

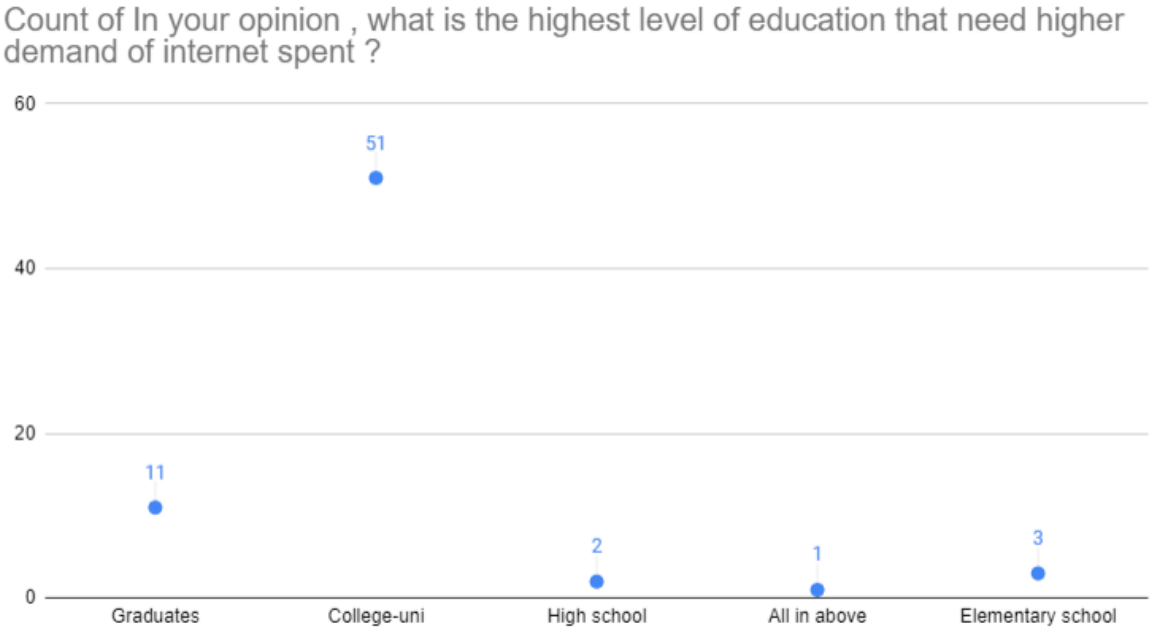


Chart 3.7

The dots are fairly evenly spread out with the most in the middle and the plot shows that most of the survey participants chose that college-uni students need a higher demand for Internet spend which means the Internet use is really important during this period. Followed by the graduates that show graduates also need a high demand of the Internet for job survey, research and studies purposes.Lastly , there's no outlier in this graph .

Frequency Distribution Table

	Frequency Distribution Table		
	class limit	*Frequency*	
	0-50	19	
	51-100	15	
	101-150	14	
	151-200	13	
	201-250	0	
	251-300	3	

	301-350	0	
	351-400	4	
	401-450	0	
	451-500	1	

MEAN	134.4203
MEDIAN	105
MODE	50
STANDARD DEVIATION	104.1079

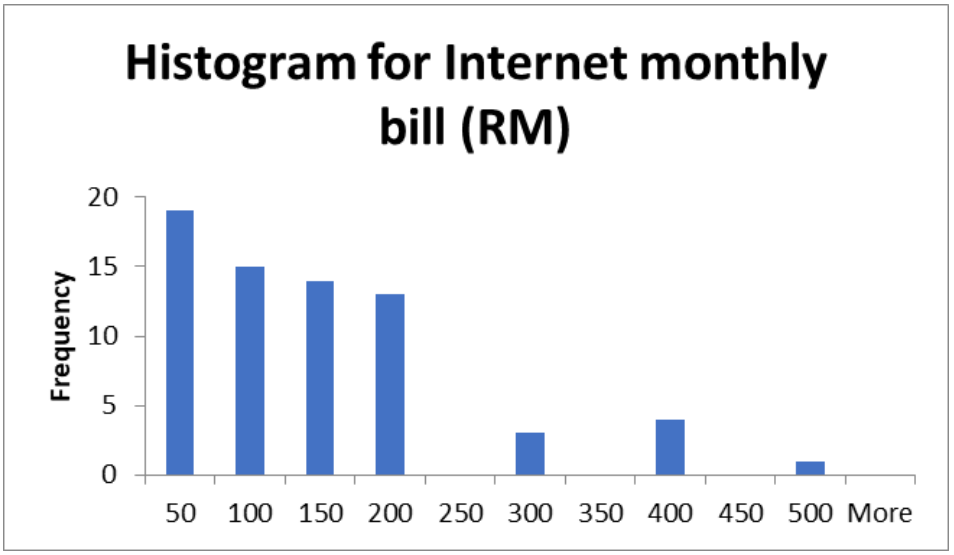
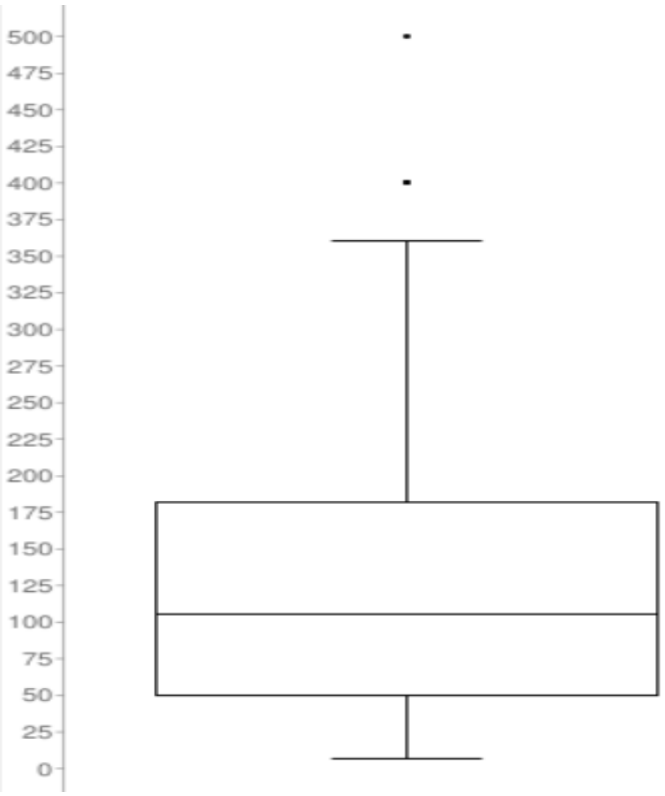


Chart 3.8

From what we can observe in the histogram chart for Internet monthly bill (RM) , the data performed a positively-skewness shape of graph .As the results we get here , the median value will be lower than the mean value because the mean is more sensitive to the higher values and is drawn towards the tail of the histogram . The vertical axis represents the frequency of the user . The mode of this data is RM50 then it shows that the usual budget spending for the internet is under RM 100 .Plus only one of our respondents is spending more than RM500 for the Internet bills and some of them are spending around RM210 to RM490 . The average bill is 134.4203 throughout the sample that we collected . Lastly after we analyze the data and we count the value of standard deviation is 104.1079 .

Internet Monthly bills of 70 Respondents(RM)



The median of this boxplot is 105 ,the whiskers in this boxplot is from 7 to 500 which means the minimum value of Internet monthly bill out of 70 respondents is RM 7 and the max values of internet monthly bills that out of 70 respondents paid are RM500.From this boxplot ,we can see that it ‘s first quartile is 50 and it third quartile is 182.5.By substation those two value we will the interquartile range that is 132.5. The outline of this box plot is 500,400,400 and 400.

4) Conclusion

To summarize, we learned that we can easily collect information about a population. We can conclude that due to pandemic Covid-19, online learning education has increased the population of Internet users and skills in students. At the same time,we can see that online based manner as a whole has skyrocketed after the pandemic as many users integrate to the online platform. Based on charts included, we can summarize and conclude the data from our survey easily as each data can display a lot of information from the survey. This included by showing the majority, minority, the trend and summed up visually. This study also has helped us to conduct graphs and calculations via the application such as Google sheet, R program and Microsoft Excel. Not only that, we also learnt mathematics formulas to understand, conduct and extract data from the graph. In the nutshell,this project has fully improved ourselves with knowledge about the population and data extraction. It also helps us to strengthen our bonds as we cover each other's weakness to complete this project in hope for the best outcome.We truly gain a lot of new knowledge intellectually and socially from this project and as a team it brought us a new type of wisdom and bond that cannot be learnt in books.