

## DATA VISUALIZATION FINAL PROJECT

Context About Project Report	
1	Explained About the Dataset in Detail.
2	Data Cleaning and Union.
3	Created Different Types of Charts Using Excel Tool & Given the Brief Description.
4	Created Dashboard Using Excel.
5	Created data bar using conditional formatting tool in excel.
6	Created Slicers Using Excel.
7	Provided different types of analysis using tableau and created story telling.
8	Selected Iris Dataset for Python Coding analysis attached the PDF.

## **1.ABOUT DATASET**

The dataset is about the Weekly data on various web traffic indicators and sales for the Quality Alloys website are included in the dataset that is made available. The data covers a period of 15 weeks, from May 25, 2008, to September 6, 2009. The dataset contains data on the volume of visitors, revenue, number of unique visitors, pageviews per visit, number of pages viewed, average time spent on the site, bounce rate, proportion of new visitors, and profit. The information gives understanding of how well the website performed, how visitors behaved, and how much money was made within the stated time. Making data-driven decisions to improve the functionality and financial success of the website may be possible using this dataset for trend analysis, pinpointing problem areas, and trend identification.

- ✓ The dataset provides a comprehensive picture of the website's performance over time because it spans a period of about 15 months.
- ✓ The dataset's many metrics provide information on several facets of the website's performance. The number of visits and the number of unique visitors, for instance, can be used to track the volume of traffic to a website, while the bounce rate and the proportion of new visits can be used to measure how engaging a website is for users.
- ✓ The revenue and profit data can be used to discover trends and patterns in revenue creation as well as to get important insights into the financial performance of the website.
- ✓ The information contains a variety of time periods, such as weekdays and weekends, which can be used to spot trends in traffic and visitor behavior.
- ✓ The data spans a period of uncertain economic conditions, making it potentially especially helpful for examining how well the website performed at that time.

The offered dataset, which includes numerous traffic metrics and income statistics, provides a thorough overview of the Quality Alloys website's performance over a period of about 15 months. The dataset might be helpful for spotting trends, patterns, and opportunities to boost the effectiveness and profitability of the website. Website owners could improve the performance of their website and increase revenue by studying the data and identifying areas for improvement. Researchers looking to research website traffic and online behavior during difficult economic times may also find the data to be helpful.

## 2. DATA CLEANING AND UNION

HERE IS THE SCREENSHOT OF EXCELSHEET DATASET

The screenshot displays an Excel spreadsheet titled 'Final Project - Excel'. The dataset, named 'Dataset of websites', contains the following columns: Week (2016-2017), Visits, Revenue, Unique Visits, Pageviews, Pages/Visit, Avg. Time on Site (sec.), Bounce Rate, % New Visits, and Profit. The data spans from May 2016 to October 2017, with rows representing weekly intervals. The spreadsheet is shown in the 'Table Tools' ribbon, with the 'Table Design' tab active. The status bar at the bottom indicates the file is 'Ready' and the 'Accessibility' pane is open.

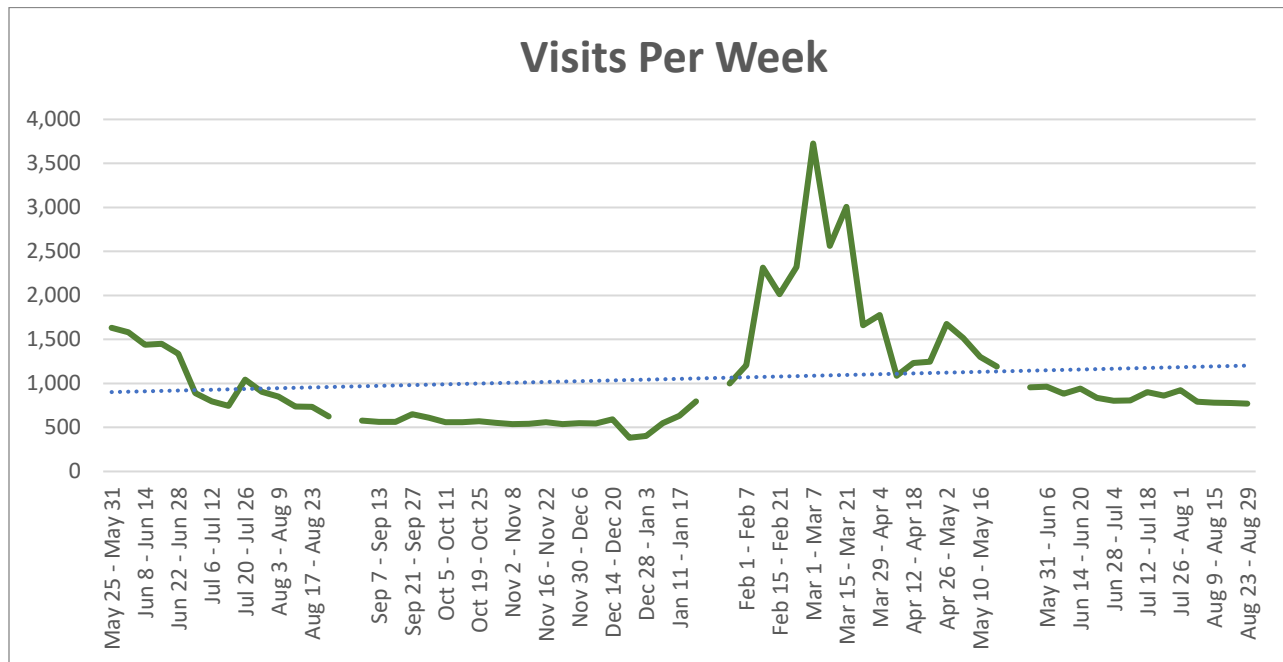
Week (2016-2017)	Visits	Revenue	Unique Visits	Pageviews	Pages/Visit	Avg. Time on Site (sec.)	Bounce Rate	% New Visits	Profit
May 28 - Jun 03	1,442	\$480,726	1,109	2,328	2.04	71	71.47%	88.54%	\$118,644
Jun 4 - Jun 10	1,402	\$841,195	1,092	2,087	1.99	98	75.51%	87.29%	\$285,409
Jun 11 - Jun 17	1,441	\$890,377	1,306	2,302	1.73	79	73.98%	84.32%	\$278,218
Jun 18 - Jun 24	1,452	\$582,474	1,301	2,170	1.67	81	73.42%	84.37%	\$204,153
Jun 25 - Jun 30	1,109	\$760,777	1,154	2,064	1.77	60	76.40%	88.55%	\$164,086
Jul 1 - Jul 7	882	\$555,555	841	1,889	2.09	71	78.69%	87.58%	\$178,115
Jul 8 - Jul 14	797	\$274,555	731	1,885	2.57	80	81.48%	85.70%	\$62,580
Jul 15 - Jul 21	744	\$620,200	706	2,016	2.58	86	59.27%	88.84%	\$248,458
Jul 22 - Jul 28	1,046	\$474,680	976	2,670	2.58	81	80.49%	88.69%	\$228,484
Jul 29 - Aug 4	808	\$782,559	892	2,189	2.42	78	85.58%	87.42%	\$225,218
Aug 5 - Aug 11	849	\$475,004	791	1,947	2.29	91	84.43%	87.04%	\$158,680
Aug 12 - Aug 18	727	\$538,271	680	2,740	3.97	89	82.02%	87.28%	\$184,774
Aug 19 - Aug 25	734	\$840,676	668	1,994	2.69	80	81.40%	84.33%	\$144,489
Aug 26 - Aug 31	828	\$788,208	594	1,540	2.49	91	81.88%	88.58%	\$213,673
Aug 31 - Sep 6	177	\$405,820	157	1,489	2.58	83	82.00%	86.68%	\$138,191
Sep 7 - Sep 13	562	\$388,240	508	1,428	2.54	82	80.90%	81.33%	\$148,861
Sep 14 - Sep 20	543	\$622,887	488	1,547	2.75	112	88.61%	78.51%	\$184,422
Sep 21 - Sep 27	852	\$455,212	585	1,790	2.75	101	88.13%	80.98%	\$158,318
Sep 28 - Oct 4	811	\$551,216	549	1,928	3.16	109	52.32%	81.18%	\$273,175
Oct 5 - Oct 11	561	\$594,542	500	1,784	2.18	112	82.65%	79.56%	\$167,627
Oct 12 - Oct 18	882	\$887,682	818	2,688	2.82	87	81.29%	88.03%	\$238,118
Oct 19 - Oct 25	870	\$655,710	525	1,582	2.74	95	57.87%	86.71%	\$228,047
Oct 26 - Nov 1	811	\$784,898	811	1,580	1.82	109	56.82%	82.89%	\$202,702
Nov 2 - Nov 8	527	\$215,647	507	1,460	2.77	83	54.26%	87.15%	\$118,840
Nov 9 - Nov 15	548	\$602,988	500	1,517	2.81	108	58.88%	88.61%	\$170,024
Nov 16 - Nov 22	550	\$585,578	511	1,489	2.66	80	57.71%	81.18%	\$188,705
Nov 23 - Nov 29	536	\$555,497	510	1,515	2.83	102	57.62%	87.21%	\$123,129
Nov 30 - Dec 6	540	\$432,637	498	1,267	2.49	87	61.20%	81.76%	\$123,400
Dec 7 - Dec 13	548	\$488,888	488	1,484	2.69	108	58.08%	82.19%	\$152,474

The screenshot displays an Excel spreadsheet titled 'Final Project - Excel'. The dataset, named 'Dataset of websites', contains the following columns: Week (2016-2017), Visits, Revenue, Unique Visits, Pageviews, Pages/Visit, Avg. Time on Site (sec.), Bounce Rate, % New Visits, and Profit. The data spans from December 2016 to May 2017, with rows representing weekly intervals. The spreadsheet is shown in the 'Table Tools' ribbon, with the 'Table Design' tab active. The status bar at the bottom indicates the file is 'Ready' and the 'Accessibility' pane is open.

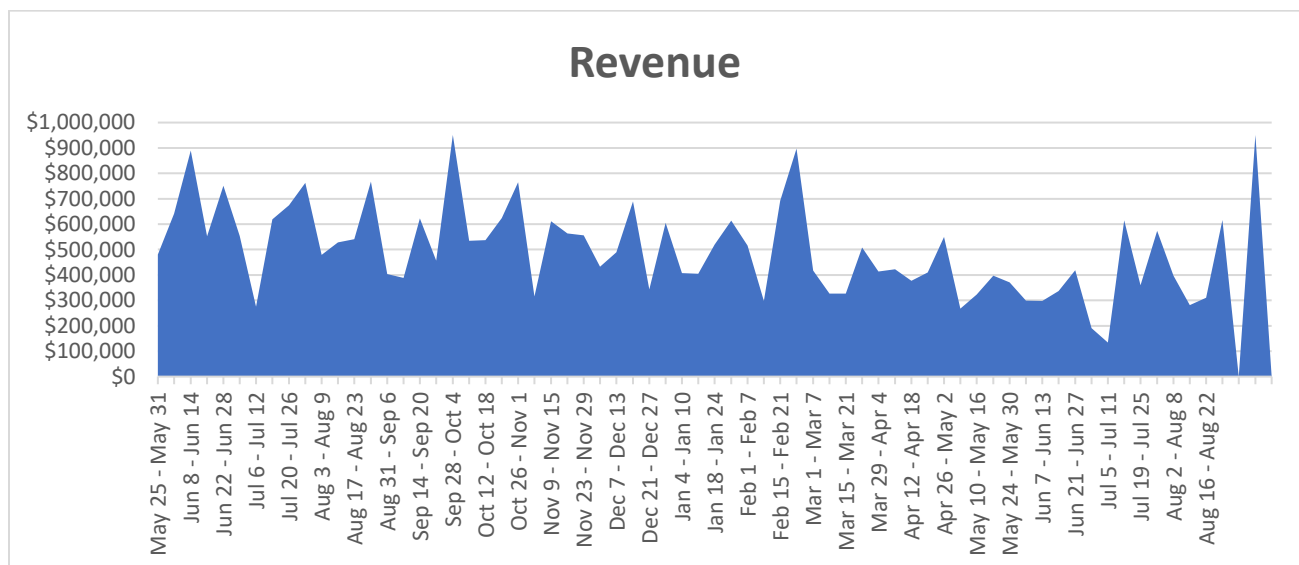
Week (2016-2017)	Visits	Revenue	Unique Visits	Pageviews	Pages/Visit	Avg. Time on Site (sec.)	Bounce Rate	% New Visits	Profit
Dec 14 - Dec 20	529	\$693,428	525	1,493	2.49	91	62.44%	82.74%	\$275,421
Dec 21 - Dec 27	363	\$341,195	369	757	2.07	78	60.15%	80.16%	\$100,366
Dec 28 - Jan 3	407	\$405,985	395	627	1.58	62	70.89%	89.30%	\$170,307
Jan 4 - Jan 10	547	\$417,177	495	1,853	3.07	100	64.80%	81.90%	\$174,894
Jan 11 - Jan 17	671	\$495,484	583	1,149	1.77	103	56.98%	89.42%	\$162,374
Jan 18 - Jan 24	794	\$738,152	734	1,852	2.31	87	65.79%	89.30%	\$170,094
Jan 25 - Jan 31	1,070	\$634,495	930	2,292	2.29	88	69.80%	86.90%	\$170,248
Feb 1 - Feb 7	1,077	\$196,200	1,199	2,330	1.97	88	73.07%	89.30%	\$193,469
Feb 8 - Feb 14	2,271	\$247,810	2,278	3,854	1.69	38	82.26%	85.09%	\$193,875
Feb 15 - Feb 21	2,070	\$191,477	1,849	1,393	1.84	42	81.72%	91.92%	\$184,366
Feb 22 - Feb 28	2,024	\$897,962	2,228	3,838	1.89	49	80.72%	90.71%	\$268,071
Mar 1 - Mar 7	3,128	\$417,527	3,817	9,291	1.42	126	85.76%	84.78%	\$170,038
Mar 8 - Mar 14	2,783	\$108,869	2,451	3,723	1.45	71	84.76%	89.78%	\$152,887
Mar 15 - Mar 21	3,188	\$128,410	2,899	4,140	1.31	86	88.39%	91.70%	\$178,316
Mar 22 - Mar 28	1,680	\$168,827	1,685	3,017	1.89	52	76.95%	88.92%	\$169,848
Mar 29 - Apr 4	1,779	\$413,817	1,688	2,881	1.62	37	76.86%	91.29%	\$163,044
Apr 5 - Apr 11	1,088	\$421,488	1,053	2,313	2.10	63	69.34%	88.48%	\$101,041
Apr 12 - Apr 18	1,278	\$178,767	1,166	3,192	2.51	69	70.56%	88.03%	\$117,244
Apr 19 - Apr 25	1,248	\$893,047	1,178	2,493	1.99	59	73.90%	88.92%	\$160,176
Apr 26 - May 2	1,614	\$149,760	1,618	2,869	1.77	49	79.60%	90.77%	\$188,568
May 3 - May 9	1,578	\$289,863	1,492	2,470	1.77	49	77.67%	88.03%	\$188,680
May 10 - May 16	1,342	\$127,700	1,288	2,194	1.51	49	77.97%	88.62%	\$184,044
May 17 - May 23	1,599	\$237,940	1,107	2,490	2.10	59	73.47%	89.76%	\$170,044
May 24 - May 30	367	\$170,346	310	1,364	1.99	54	70.80%	89.45%	\$162,374
May 31 - Jun 6	363	\$239,420	303	2,160	2.24	78	68.12%	88.92%	\$169,024
Jun 7 - Jun 13	802	\$217,520	849	1,817	2.07	68	69.80%	88.88%	\$168,040
Jun 14 - Jun 20	542	\$330,767	590	2,283	2.27	73	60.59%	88.42%	\$160,176
Jun 21 - Jun 27	628	\$493,802	708	1,729	2.68	71	66.30%	87.68%	\$160,208
Jun 28 - Jul 4	862	\$581,722	762	1,764	2.21	73	65.76%	89.65%	\$146,366
Jul 5 - Jul 11	864	\$113,867	795	1,741	2.01	69	65.26%	84.62%	\$162,024
Jul 12 - Jul 18	900	\$675,712	828	2,874	2.39	69	64.95%	85.56%	\$166,568
Jul 19 - Jul 25	884	\$380,233	876	1,827	2.03	75	64.65%	88.06%	\$167,244
Jul 26 - Aug 1	1,156	\$493,444	1,101	2,101	1.81	88	64.45%	81.67%	\$167,044

### 3. CREATED DIFFERENT TYPES OF CHARTS TO ANALYZE THE DATASET ALONG WITH THE DESCRIPTION.

By using the dataset, I have created different types of charts in excel sheet and given the description below.

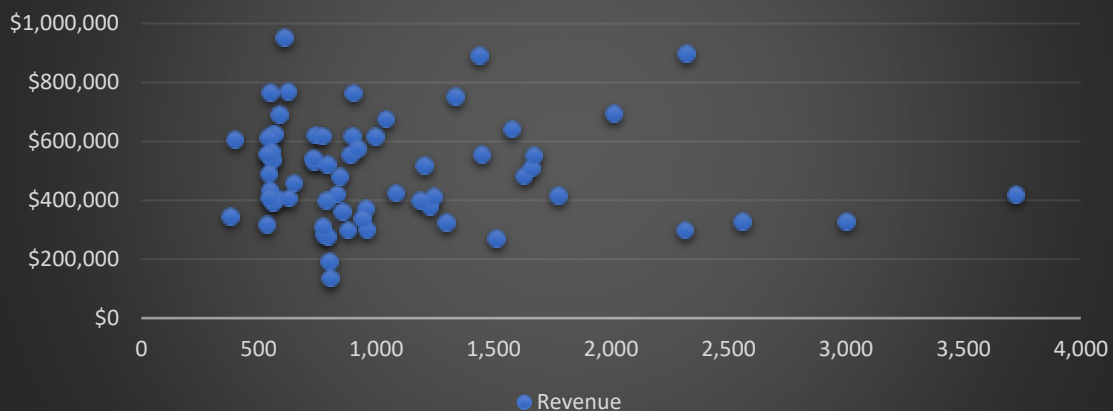


The dataset provides information on the total number of visits to a website on a weekly basis from May 2008 to August 2009, which varies from week to week.



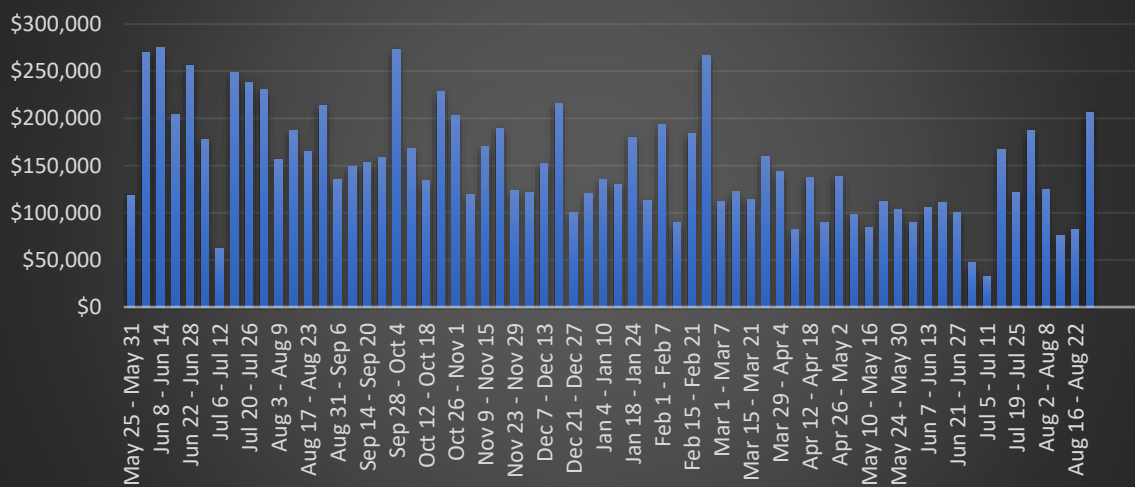
The dataset shows that the company's revenue varies over the course of the year, with the highest revenue recorded during the week of June 8 to June 14 and the lowest revenue recorded during the week of July 5 to July 11. The company's annual revenue peaks and valleys are represented by these two weeks.

## Visits v/s Revenue



Even when visit levels are similar, it is likely that other factors also contribute to the diversity in income. This is evident by looking at the scatter plot of revenue and visits per week. It appears that there may be a relationship between visits per week and revenue.

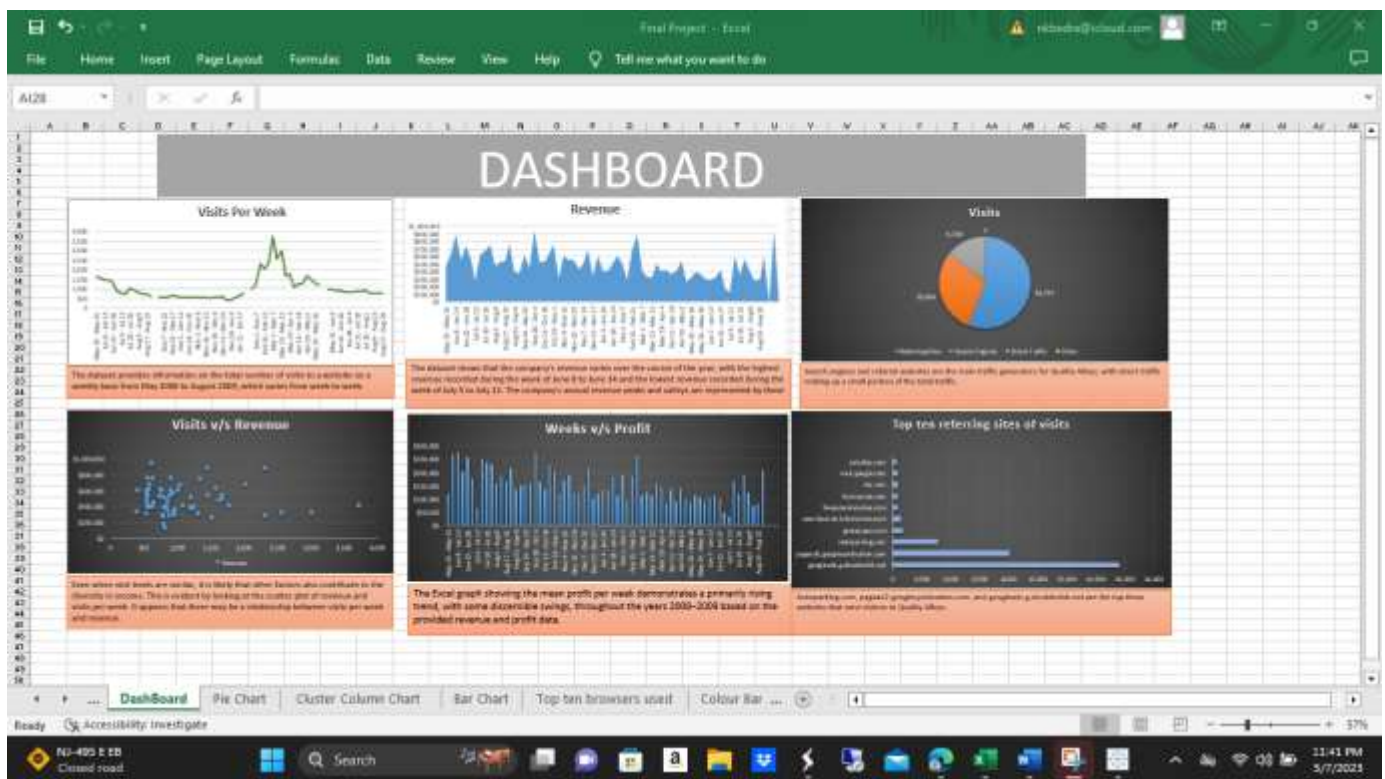
## Weeks v/s Profit



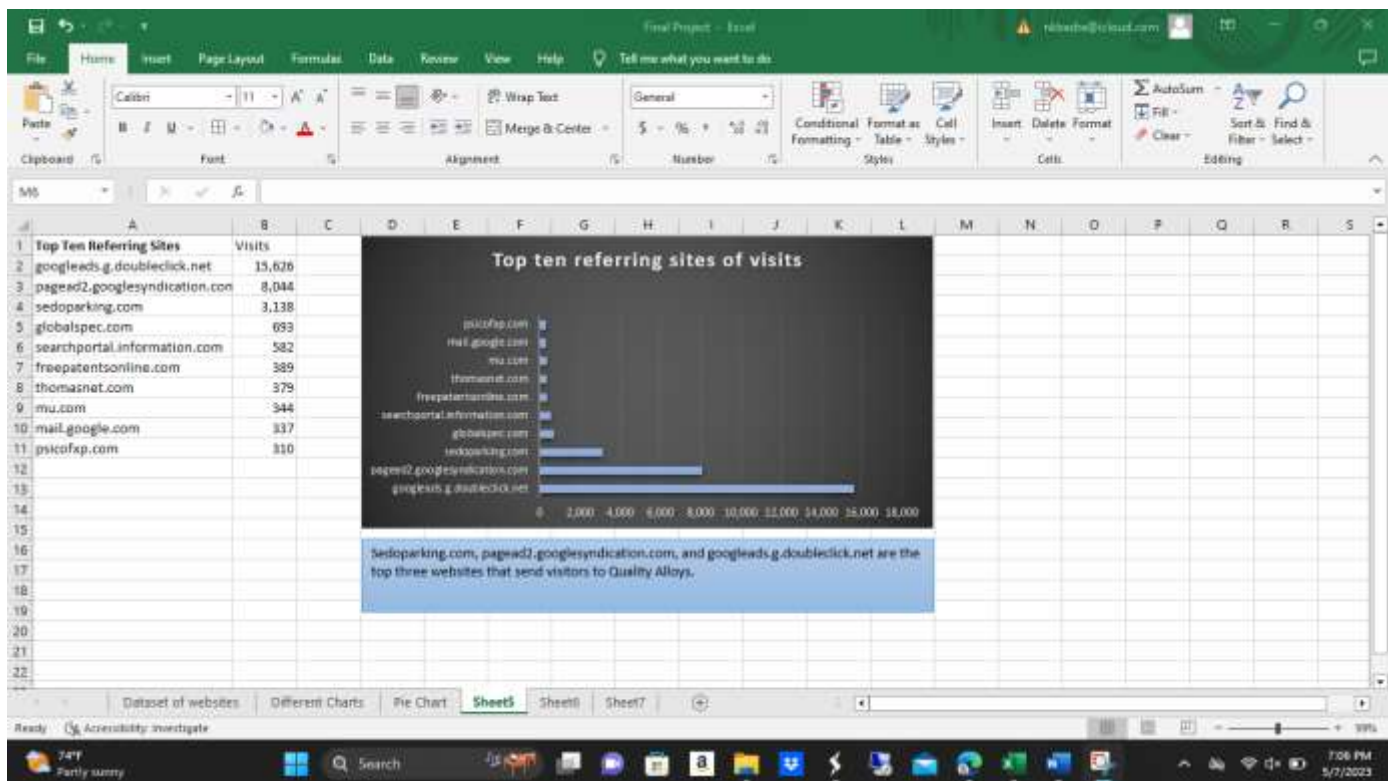
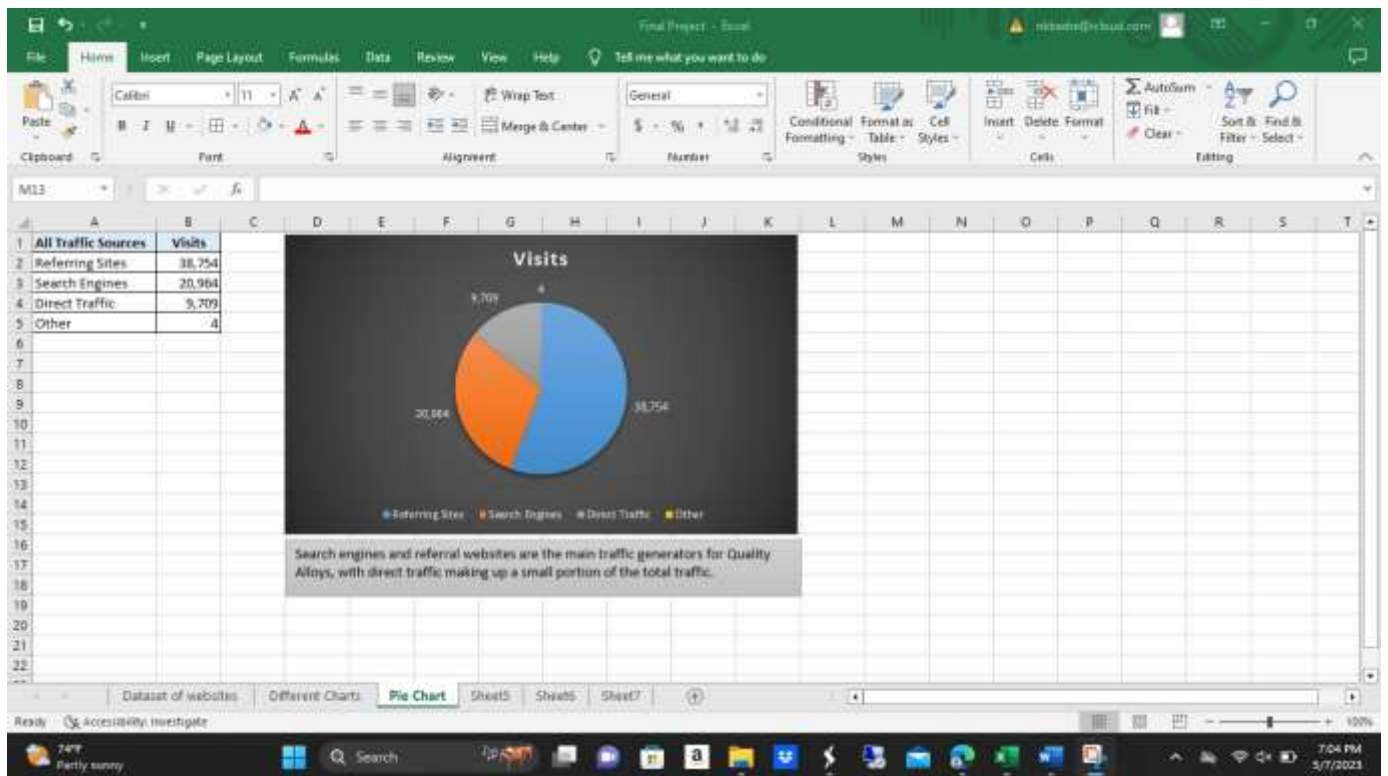
The Excel graph showing the mean profit per week demonstrates a primarily rising trend, with some discernible swings, throughout the years 2008–2009 based on the provided revenue and profit data.

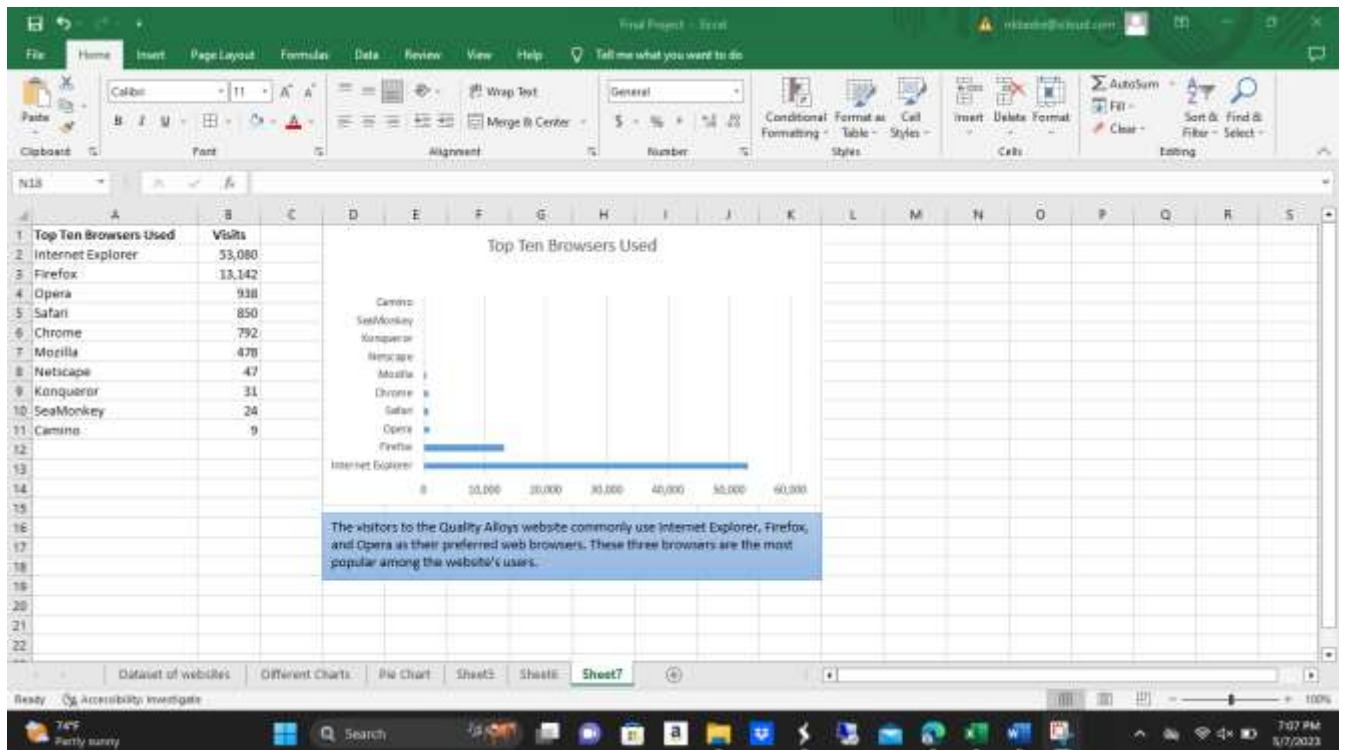
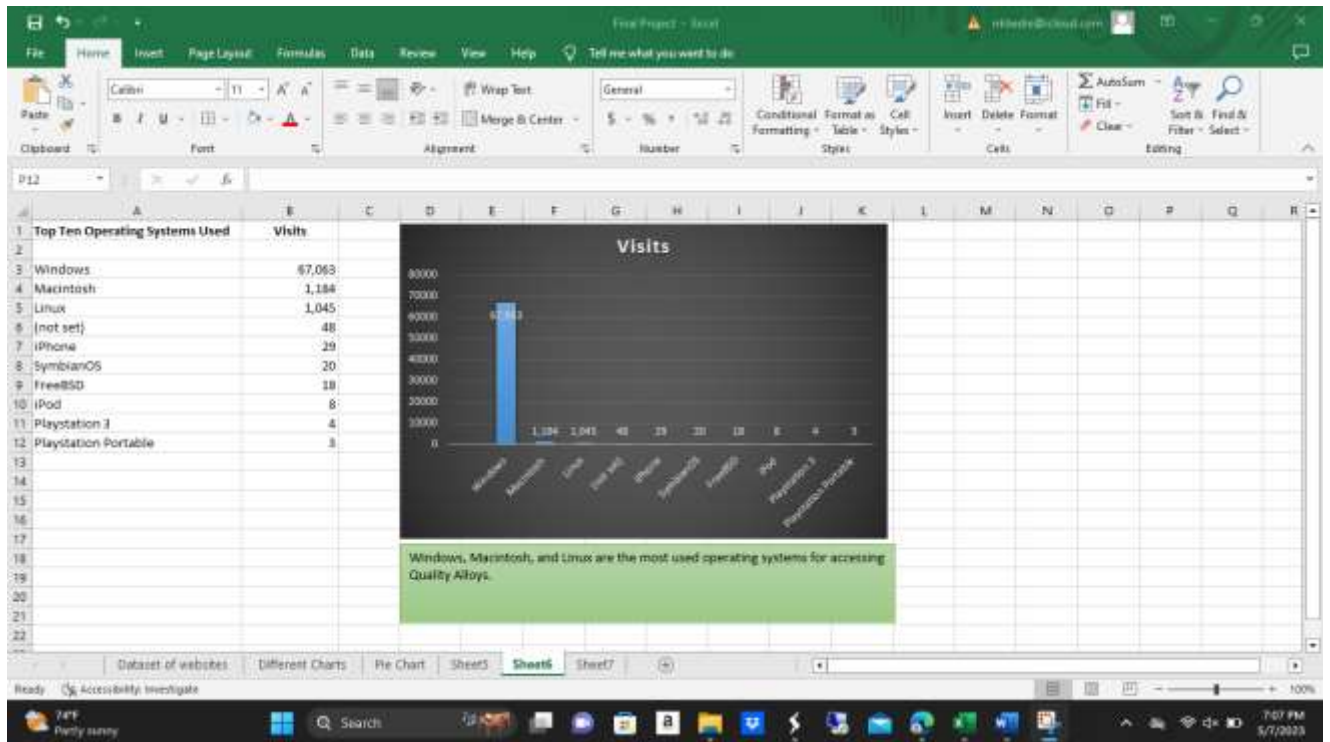
## 4. CREATED DASHBOARD USING ALL CHARTS

All the above charts provided are created in the excel. Using all the charts I have created the dashboard in the excel.





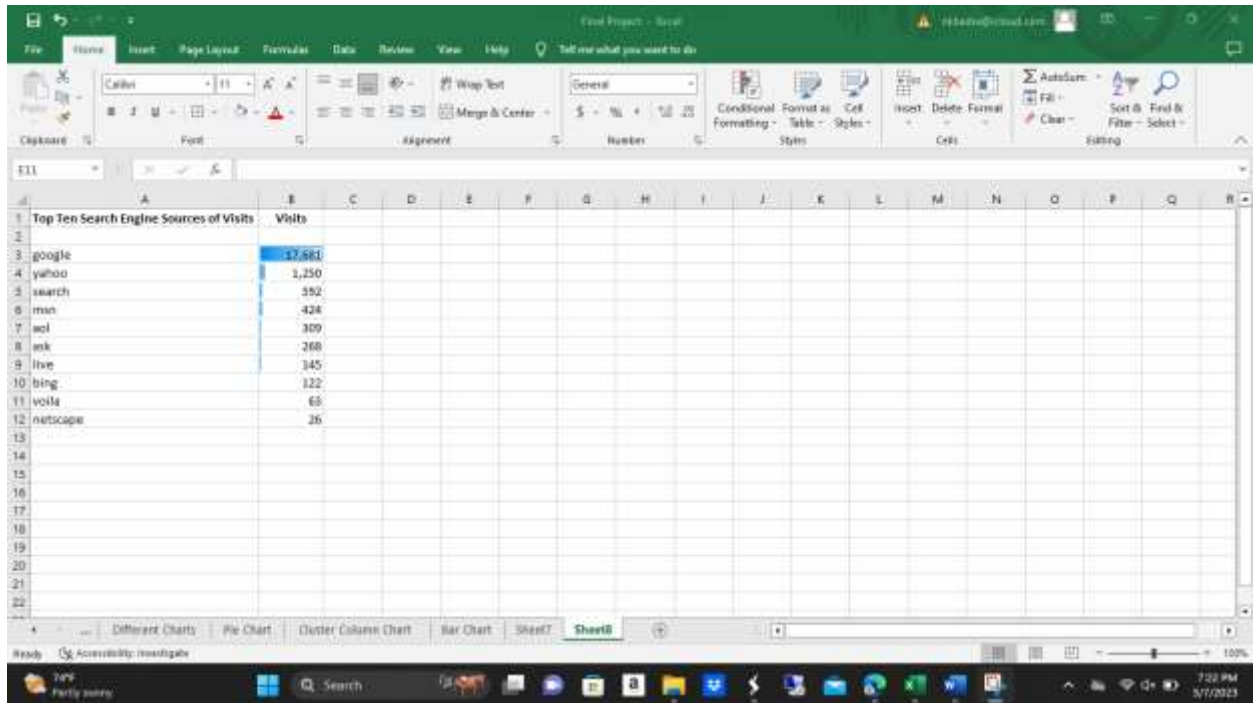






## 5. DATA BARS USING EXCEL

Created data bars using conditional formatting tool in excel.



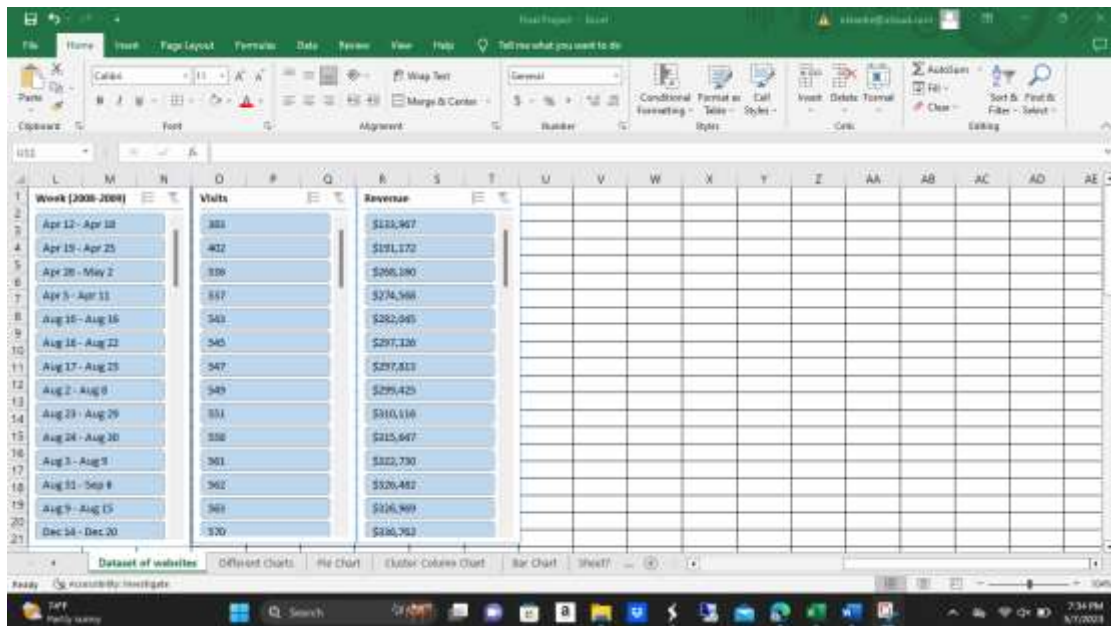
I have taken the small dataset of the top ten search engine sources of visits and created the data bars by using conditional formatting in excel.

## 6. SLICERS TECHNIQUE USING EXCEL

### Chart 1

How did I create the chart 1 Slicers?

- To choose a chart, click on it.
- Click "Insert Slicer" on the "Design" tab of the Excel ribbon.
- Select "Week (2008 – 2009)", "Visits" and "Revenue" in the "Insert Slicers" dialog box.
- select "OK"
- On the worksheet, place the slicers where you want them.

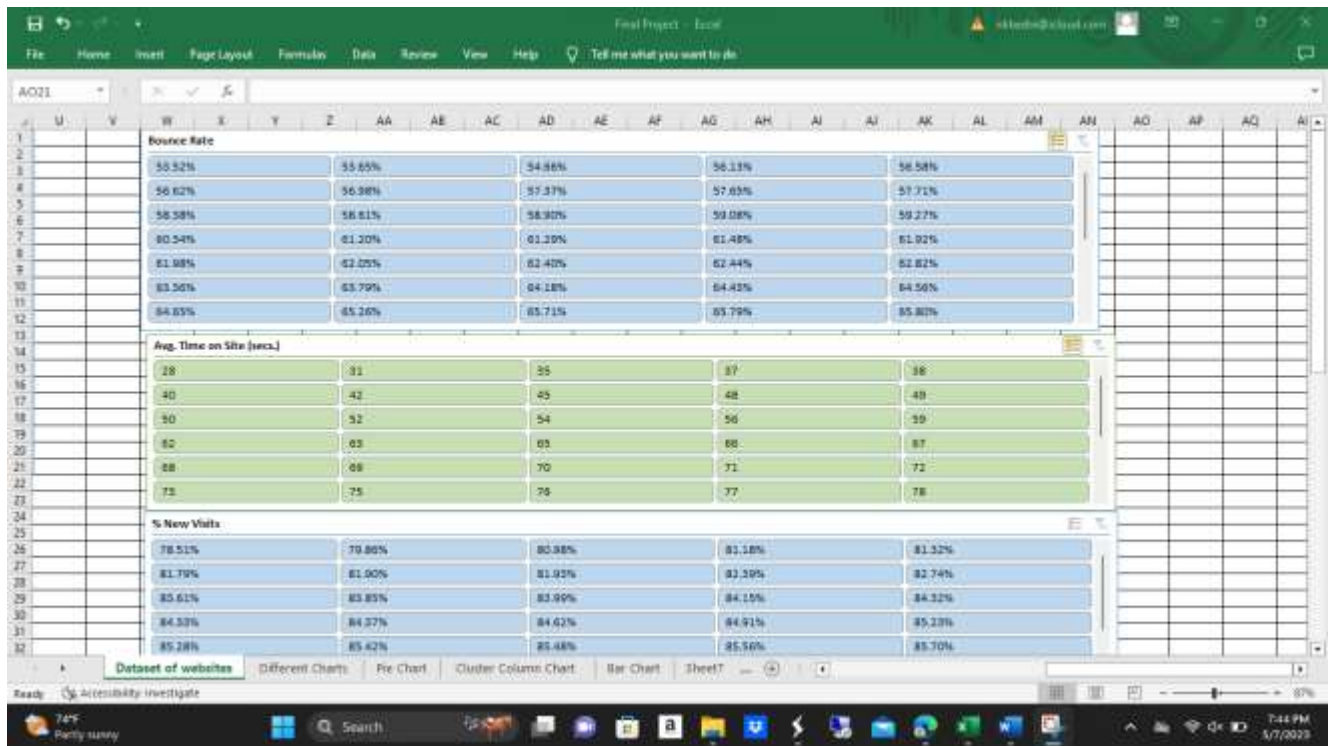


Week (2008-2009)	Visits	Revenue
Apr 12 - Apr 18	383	\$123,967
Apr 19 - Apr 25	412	\$191,172
Apr 26 - May 2	338	\$206,180
Apr 3 - Apr 11	517	\$274,968
Aug 18 - Aug 16	543	\$282,045
Aug 16 - Aug 22	545	\$297,126
Aug 17 - Aug 23	547	\$297,513
Aug 2 - Aug 8	549	\$299,425
Aug 23 - Aug 29	531	\$310,116
Aug 24 - Aug 30	538	\$315,647
Aug 3 - Aug 9	561	\$323,730
Aug 31 - Sep 6	562	\$326,482
Aug 9 - Aug 15	563	\$326,999
Dec 14 - Dec 20	370	\$186,793

## Chart 2

How did I create the chart 2 Slicers?

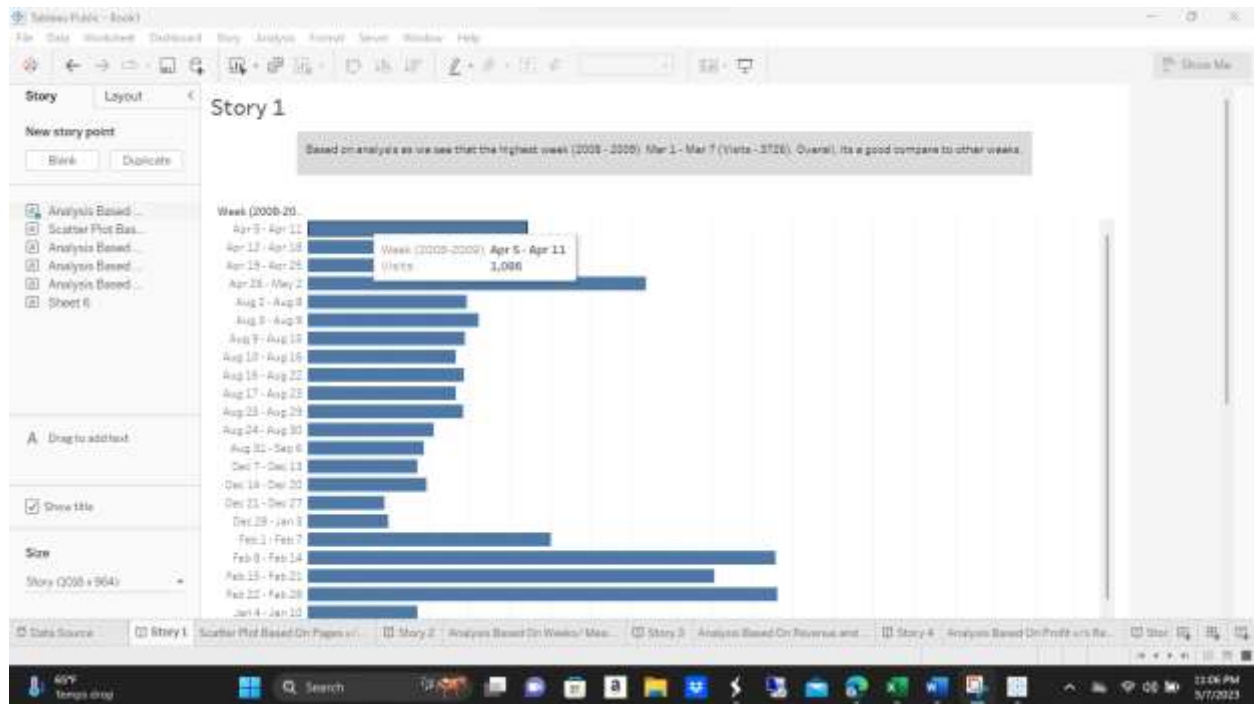
- To choose a chart, click on it.
- Click "Insert Slicer" on the "Design" tab of the Excel ribbon.
- Select "Bounce Rate", "Average time on site" and "% New Visits" in the "Insert Slicers" dialog box.
- select "OK"
- On the worksheet, place the slicers where you want them.



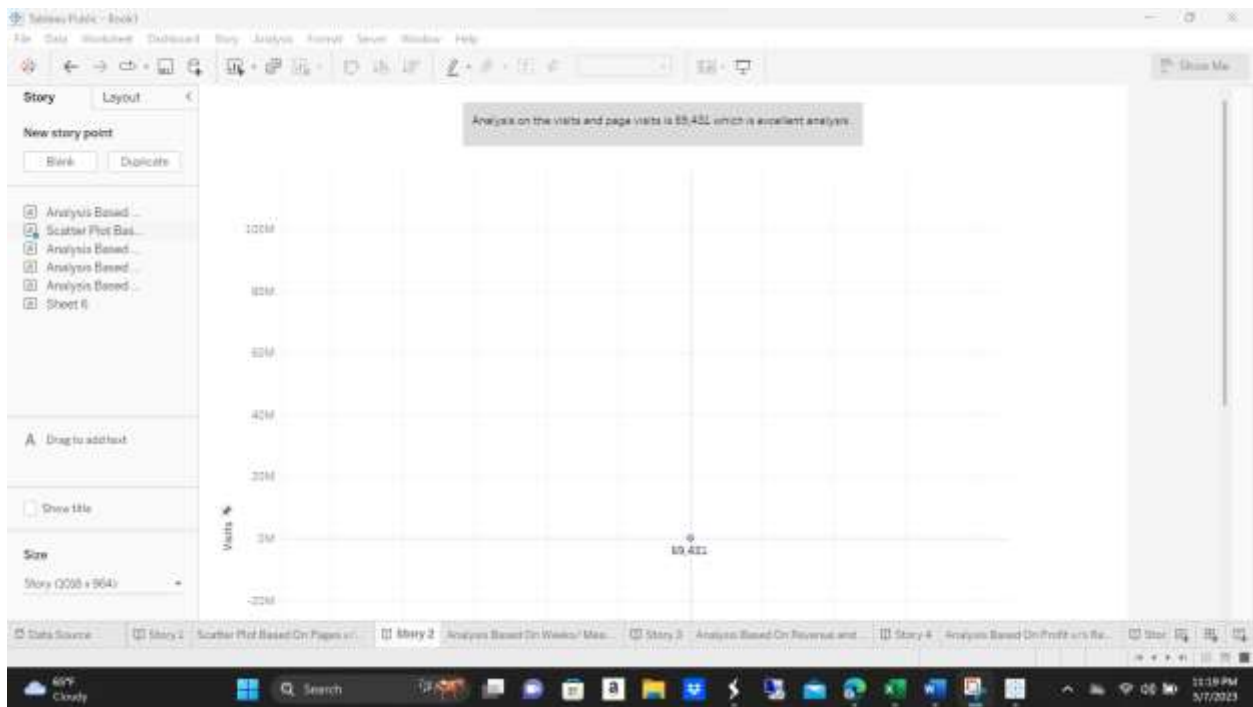
## 7.TABLEAU ANALYSIS

### CREATED DIFFERENT TYPES OF CHARTS TO ANALYZE THE DATASET USING TABLEAU AND CREATED STORY TELLING BASED ON THE ANALYSIS.

Story 1 - When we look at how different weeks categories and have grown, we can see that visits in the weeks have increased significantly in the month of Mar 1 – Mar 7. Overall, they were 3726.

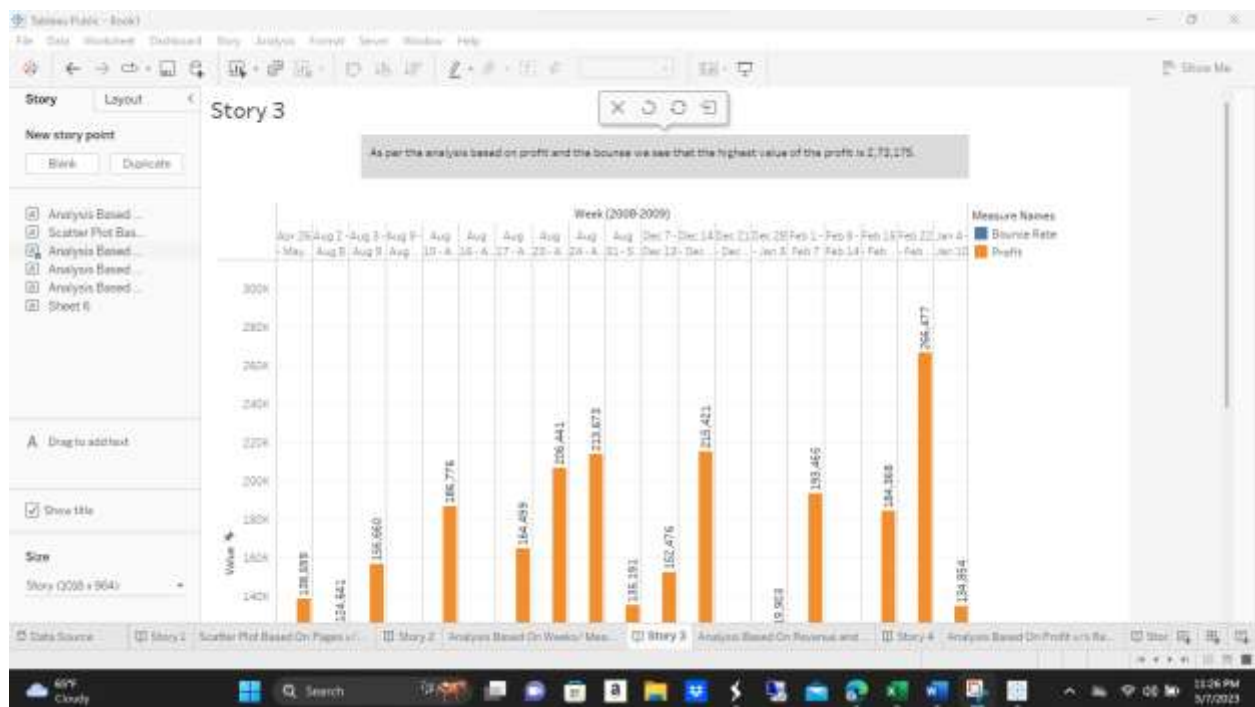
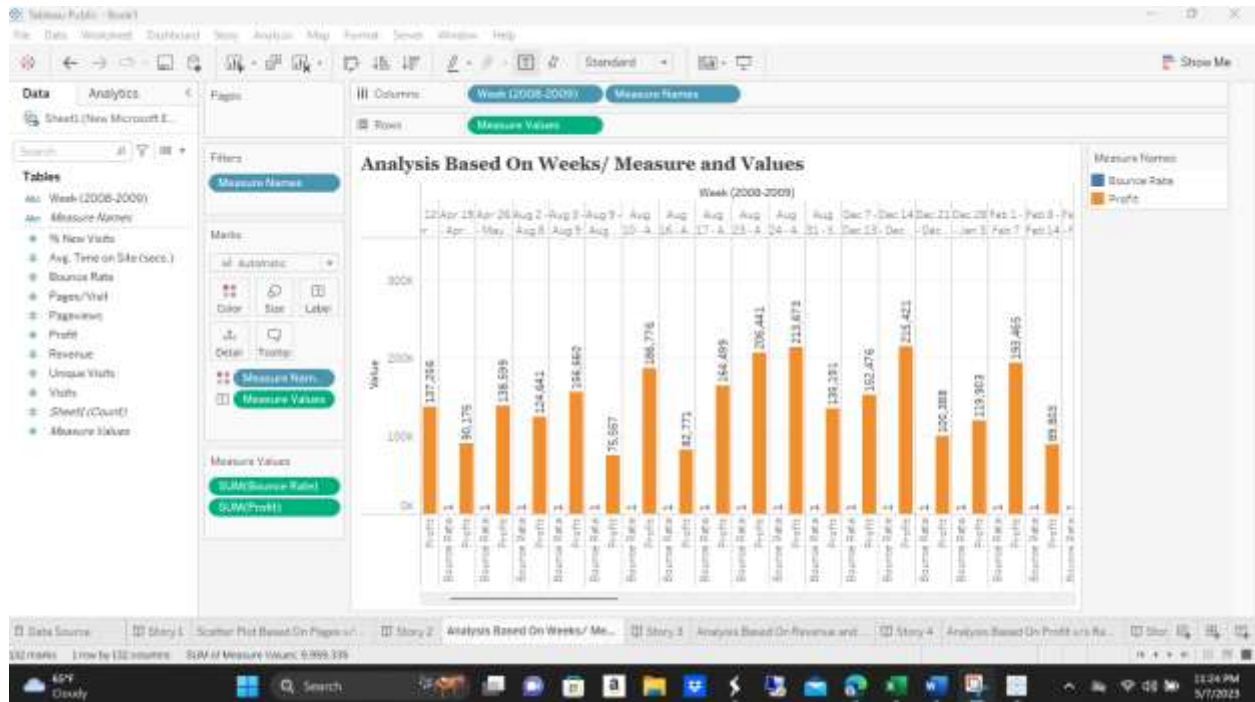


Story 2 – In this visualization we can see that the visits v/s weeks was the excellent improvement was to the peak which is 69,431.

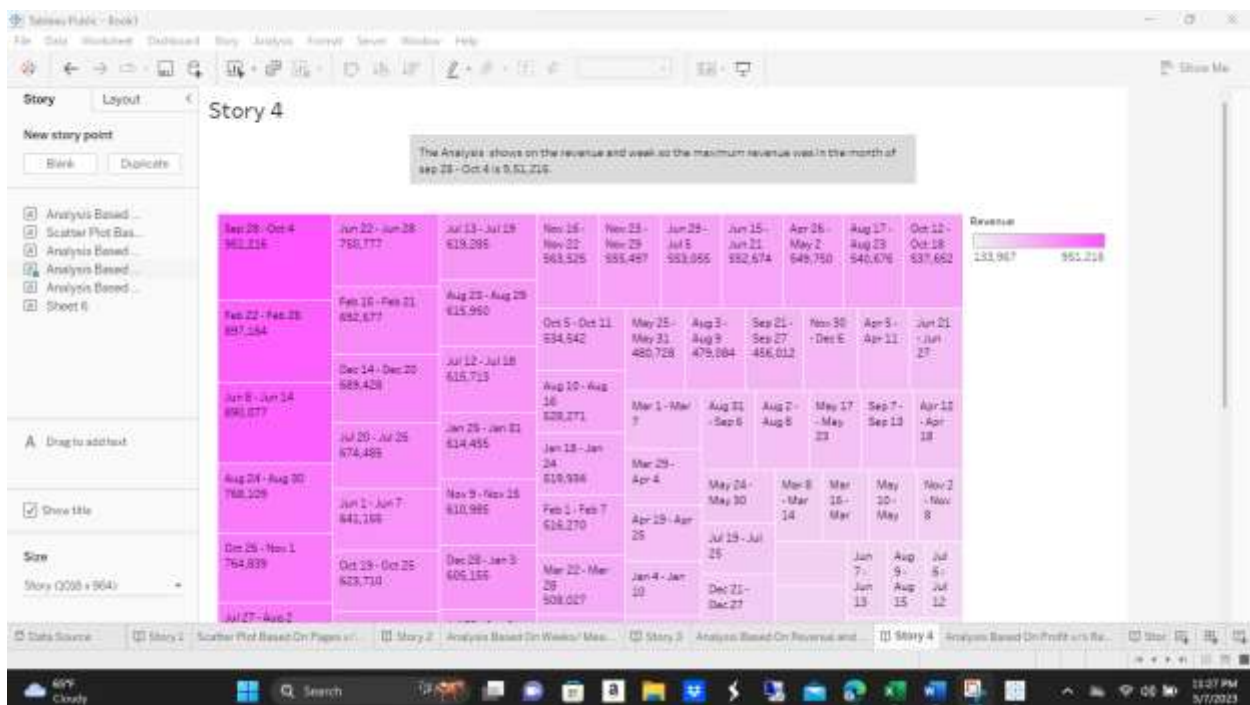
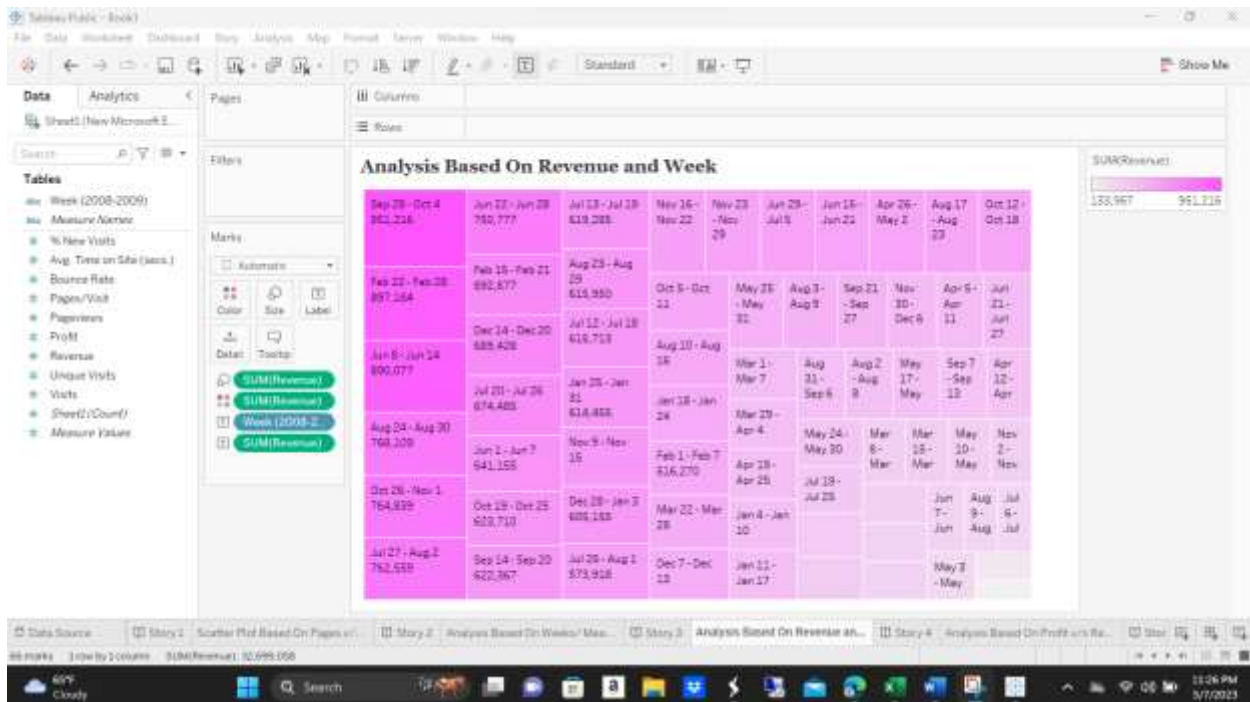




Story 3 – This bar chart shows the visualization was done based on the week and Measure and value to know the maximum profit we got to know that it was 2,73,175.



Story 4 – This visualization it was done on the Revenue v/s Week. By using the tree maps in this we can see that the in the month of sep 28 – oct 4. It was really good revenue that is 9,51,216 compares to other weeks.



Story 5 – In this visualization we can see that the comparison was done based on the profit and revenue. The overall revenue was high compare to the profit.

