

Food Nutrition Data Analysis using MS Excel



Project Report

*Submitted in partial fulfillment of the requirements for
the award of the degree of
B.tech in Computer Science Engineering*

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UNIVERSITY WITH A PURPOSE

CANDIDATES DECLARATION

We hereby certify that the project work entitled "***Food Nutrition Data Analysis using MS Excel***" in partial fulfillment of the requirements for the award of the Degree of **Bachelor of Technology in Computer Science And Engineering** and submitted to School of Computer Science, University of Petroleum And Energy Studies, Dehradun, is an authentic record of our work carried out during a period from January, 2021 to May, 2021 (Semester 2) under the supervision of **Dr. Hitesh Kumar Sharma**, Assistant Professor(SG), Department of Cybernetics .

The matter presented in this project has not been submitted by us for the award of any other degree of this or any other University.

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This is to certify that the above statement made by the candidate is correct to the best of my knowledge.

(Date: 15 May, 2021)

(Dr. Hitesh Kumar Sharma)

Project Guide

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ACKNOWLEDGEMENT

We wish to express our deep gratitude to our guide **Dr. Hitesh Kumar Sharma**, for all the advice, encouragement and constant support he has given us throughout our project work. This work would not have been possible without his support and valuable suggestions.

We are also grateful to **Dr. Priyadarsan Patra**, Dean School of Computer Science, UPES for giving us the necessary facilities to carry out our project work successfully.

We would like to thank all our friends for their help and constructive criticism during our project work. Finally we have no words to express our sincere gratitude to our parents who have shown us this world and for every support they have given us.

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	(Contain Solution to the Problem in the form of Pivot Table & Graphly Representation with different Graph Type)	
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Introduction

- Microsoft Excel is a spreadsheet developed by Microsoft for Windows, macOS, Android and iOS. It features calculation, graphing tools, pivot tables, and a macro programming language called Visual Basic for Applications (VBA).
- It has been a very widely applied spreadsheet for these platforms, especially since version 5 in 1993, and it has replaced Lotus 1-2-3 as the industry standard for spreadsheets. Excel forms part of the Microsoft Office suite of software.
- Main Purpose of the MS Excel in everyday life is :-
 1. Data entry and storage
 2. Collection and Verification of Business Data
 3. Administrative and managerial duties
 4. Accounting and budgeting
 5. Data Analysis
 6. Reporting
 7. Visualizations
 8. Forecasting
 9. Help produce any kind of Graph such as Bar Graph, Pie Chart, Line Graph etc.
- MS Excel has some popular functions such as MAX, MIN, COUNT, AVG, and some other functions.

Background Study

We have download the data for the Project from

<https://tools.myfooddata.com/nutrition-facts-database-spreadsheet.php>

The nutrition facts on this website are driven by the USDA Food Data Central. You can find the raw files here, along with the documentation.

Download Data look like this

ID	Name	Food Group	Calories	Fat (g)	Protein (g)	Carbohydrate (g)	Sugars (g)	Fiber (g)	Cholesterol (mg)	Saturated Fats (mg)	Calcium (mg)	Iron, Fe (mg)	Potassium, K (mg)	Magnesium (mg)	Vitamin A, IU	Vitamin A, RAE (mcg)	Vitamin C (mg)	Vitamin B-12 (mcg)	Vitamin D (mcg)	Vitamin E (Alpha-Tocopherol (mg))	Added Sugars (g)	Net-Carbs (g)	Water (g)	Omega-3 (mg)	
<small>Data Provided By MyFoodData.com Click here to get the raw files. Select "All and Copy Paste" to get the data. If you have a google account click "File" then "Make a Copy" to edit your own copy of the data. All serving sizes are 100g.</small>																									
167516	Waffles Buttermilk Frozen Ready-To-Heat	Baked Foods	273	9.22	6.58	41.05	4.3	2.2	15	1.98	279	6.04	2.11	0	0	0	0	0	0.62 NULL	0	38.95	40.34			
167517	Waffles Buttermilk Frozen Ready-To-Heat Toasted	Baked Foods	309	9.49	7.42	48.39	4.41	2.6	13	2.75	299	6.59	1.38	22	1463	438	0	0	0.68 NULL	0	45.79	31.57			
167518	Waffle, Buttermilk, Frozen Ready-To-Heat Microwave Baked Foods	Baked Foods	269	9.4	6.82	44.16	4.5	2.4	16	2.07	125	6.5	110	20	1450	429	0	0	2.44 NULL	0.81 NULL	41.76	38.48			
167519	Waffle, Buttermilk, Frozen Ready-To-Heat Microwave Baked Foods	Baked Foods	258	9.81	6.1	49.41	5.04	2.4	16	1.98	197	5.81	149	24	1450	429	0	0	2.44 NULL	0.95 NULL	43.52	34.69			
167520	Pie Crust Cookie-Type Graham Cracker Ready Crust	Baked Foods	501	24.83	5.1	64.3	18.13	1.9	0	4.999	29	2.6	113	23	1	0	0	0	1.95 NULL	0	62.4	4.37			
167521	Pie Crust Cookie-Type Graham Cracker Ready Crust	Baked Foods	484	22.42	6.08	64.48	26.31	2.7	0	4.725	32	4.3	187	40	0	0	0	0	1.79 NULL	0	61.78	4.99			
167522	Pie Crust Cookie-Type Graham Cracker Ready Crust	Baked Foods	260	21.1	5.7	64.54	22.02	1.6	0	3.133	14	0.38	78	8	27	18	5.7	0	0.98 NULL	0	47.84	4.19			
167523	Pie Crust Diet Dish Unbaked Made With Baked Foods	Baked Foods	468	28.74	5.52	46.79	NULL	0	8.129	20	2.26	91	15	NULL	0	0	0	1.24 NULL	0	45.39	17.78				
167524	Waffles Chocolate Chip Frozen Ready-To-Heat	Baked Foods	297	10.1	5.8	49.08	13.1	1.2	NULL	21	3.967	307	6.4	74	16	1429	429	0	0	0	0	0	0		
167525	Waffles Chocolate Chip Frozen Ready-To-Heat	Baked Foods	474	23.06	6.1	64.34	14.1	1.2	NULL	17.51	1.7	237	70	20	70	NULL	0	0	0	0	0	44.18	35.62		
167526	Bread Salvadorean Sweet Cheese (Quesadilla) Sliced Baked Foods	Baked Foods	374	17.12	7.12	47.84	24.9	0.7	59	4.12	73	0.98	350	11	584	141	0	0.35	0.96 NULL	0	47.14	25.48			
167527	Bread Round Cake Type Pan De Torta Salvadorean	Baked Foods	390	17.45	7.05	51.29	18.1	1.7	NULL	3.042	46	2.2	210	10	NULL	0	0	0	1.42 NULL	0	48.59	22.38			
167528	Bread Round Cake Type Pan De Torta Salvadorean	Baked Foods	379	18.3	5.8	47.76	17	2.2	NULL	10	0.939	15	2.2	103	10	NULL	0	0	0	0.96 NULL	0	48.36	22.78		
167529	Croissants Snacks Goya Crackers	Baked Foods	433	13.35	14.25	64.35	2.35	3.8	NULL	0.323	16	5.66	124	39	NULL	0	0	0	0	0	60.95	3.93			
167530	Croissants Snacks Goya Crackers	Baked Foods	484	20.37	7.01	64.55	9.37	2.4	NULL	5.362	26	7.38	129	25	NULL	0	0	0	0.46 NULL	0	62.15	4.46			
167531	Croissants Crema La Moderna Risks Cream Croissant	Baked Foods	464	19.15	7.01	64.88	9.41	2.4	NULL	2.048	734	6.84	117	20	NULL	0	0	0	0.58 NULL	0	62.49	4.46			
167532	Croissants Crema La Moderna Risks Cream Croissant	Baked Foods	238	2.10	10.66	43.31	5.2	0	0.63	4.68	4.59	127	20	1	0	0	0	0	0.38 NULL	0	34.71	39.6			
167533	Bags Wheat	Baked Foods	250	1.53	10.2	48.89	5.12	4.1	0	0	20	2.76	165	51	0	0	0	0	0.32 NULL	0	44.79	37.05			
167534	Cream Puff Eclair Custard Or Cream Filled	Baked Foods	334	18.82	4.41	37.43	23.26	0.9	68	7.058	30	0.95	68	10	68	23	0	0.17	0.95 NULL	0	36.53	38.84			
167535	Cream Puff Eclair Custard Or Cream Filled	Baked Foods	261	7.85	4.8	49.27	19.96	2.4	0	1.228	163	3.12	133	21	0	0	0	0	0.86 NULL	0	46.81	37.14			
167536	Snacks Beef Jerky Chopped And Formed	Snacks	410	25.98	33.2	11	9	1.4	48	19.85	20	5.42	597	51	0	0	0	0.58	0.3	0.49 NULL	0	9.2	23.36		
167537	Snacks Corn-Based Extruded Chips Plain	Snacks	539	33.36	6.17	57.27	0.27	4	0	4.331	138	1.2	144	72	89	3	0	0	0	0	0	47.23 NULL	53.27		
167538	Snacks Corn-Based Extruded Chips Barbecue	Snacks	523	33.7	7.1	58.2	NULL	5.2	0	4.468	134	1.4	128	77	81	31	1.7	0	0	0	0	0	47.51	3.2	
167539	Snacks Corn-Based Extruded Corn Puffs	Snacks	510	26.9	5.8	62.9	NULL	1.1	0	2.75	3	2.54	81	11	318	16	0	0	0	0	0	61.8	2		
167540	Snacks Corn-Based Extruded Corn Puffs	Snacks	359	2.88	1	62.82	57.08	0	0	0.65	18	0.75	164	14	58	3	56	0	0	0.58 NULL	0	82.82	12.3		
167541	Snacks Corn-Based Extruded Corn Puffs	Snacks	271	2	0.3	62.85	57.08	0	0	0.672	32	1.5	249	29	57	0	0	0	0	0	3.98 NULL	12.2			
167542	Snacks Granola Bars Hard Plain	Snacks	471	19.8	64.4	28.57	5.3	0	2.37	61	2.95	336	97	33	2	0.9	0	0	0	2.09 NULL	59.1	3.9			
167543	Snacks Granola Bars Hard Almond	Snacks	496	25.5	7.7	64.2	NULL	4.8	0	12.51	32	1.74	273	81	37	2	0	0	0	0	0	87.2	3.1		
167544	Snacks Granola Bars Hard Almond Peanut Butter	Snacks	448	17.3	7.6	64.4	NULL	4.2	0	12.57	103	2.95	267	92	0	0	0	0	0	0	87.2	4.4			
167545	Snacks Granola Bars Soft Coated Milk Chocolate	Snacks	466	24.9	5.8	63.8	NULL	3.4	0	14.22	103	2.33	313	66	29	7	0	0.57	0.51	0	0	60.4	3.8		
167546	Snacks Granola Bars Soft Coated Milk Chocolate	Snacks	473	20.18	6.72	67.41	62.68	1.9	0	0.735	21	0.71	220	66	0	0	0	0	0	0	3.57 NULL	66.51	2.54		
167547	Snacks Granola Bars Soft Coated Milk Chocolate	Snacks	508	31.1	10.72	53.7	23.74	2.8	0	1.701	106	1.45	349	67	25	5	0	0	0	0	0	56.56	3.2		
167548	Snacks Granola Bars Soft Coated Milk Chocolate	Snacks	452	20	9.8	62.2	NULL	4.2	1	0.59	80	1.53	277	98	32	2	0	0	0.45 NULL	0	54.54	3.8			
167549	Snacks Popcorn Crispy Popped Microwave Regular Flavored	Snacks	583	43.55	7.29	45.06	0.46	8.1	0	0.82	4	1.98	182	79	154	8	0.3	0	0	2.43 NULL	36.96	1.2			
167550	Snacks Popcorn Cakes	Snacks	364	3.1	80.1	2.9	0.72	0	1.46	9	1.67	327	159	72	4	0	0	0	0.29 NULL	77.2	5				
167551	Snacks Popcorn Cakes	Snacks	400	7.3	61.9	45.77	45.39	3.8	0	1.24	66	3.15	255	95	79	4	0	0	0	0.85 NULL	73.53	3.3			
167552	Snacks Potato Chips Made From Dried Potatoes	Snacks	431	12.8	3.8	79.1	53.19	5.2	0	3.81	43	1.74	109	35	8	2	0	0.01	0	1.2 NULL	73.9	2.8			
167553	Snacks Potato Chips Made From Dried Potatoes	Snacks	502	26.14	4.66	64.76	0.63	3.2	0	0.769	29	1.1	760	45	0	0	0	0	0	2.18 NULL	61.96	2.22			
167554	Snacks Pretzels Made From Dried Potatoes	Snacks	547	37	6.1	61.3	NULL	1.2	3	0.47	64	1.4	496	95	756	323	8.1	0	0	0	0	0	50.1	2	
167555	Snacks Pretzels Hard Salted	Snacks	584	2.93	10.04	80.39	2.21	3.4	0	0.937	27	4.98	223	29	0	0	2.1	0	0	0.47 NULL	76.99	3.13			

About Data Set :-

- Data set consists of the Nutrition Value present in Foods.
- Data Sheets have 14K + Rows and 51 Columns.
- Foods Nutrition Value is calculated in the serving size of 100g. (or 3.5274 oz)
- This data is sourced from the USDA Food Data Central through My Food Data (<https://www.myfooddata.com>)

Problem Statement

We have to find solution for the following questions :-

- How many food groups are there in the Table with total food in each group. (in Graphs)
- Compare
 - a) Maximum and,
 - b) Minimum

Nutrition value for each group with graph representation of Fat, Protein, Sugar, Carbohydrates, Fiber. (in Table and Graphs)

- Compare the Average Nutrition value for each group with graph representation of Fat, Protein, Sugar, Carbohydrates, Fiber. (in Table and Graphs)
- Compare the Average any 10 Vitamins and Minerals present in the Vegetable and Spice and Herbs. (in Table and Graphs)
- To Make Search Bar for searching food information using their Food ID (using VLOOKUP)
- Compare the Average Minerals presents in Meat and Fish (in Table and Graphs)
- Compare the Nutrition Value in Restaurant Food and Prepared Foods (in Tables and Graph)

Data Snapshot

- Download Spreadsheet is changed for easy understanding and good Visualizations in the data.

About Table

- Spreadsheet is given the name of “**Database**.”
- Color Code is given in the tables as follows on the basic groups of the columns. They are as follows :-

Basic Information	
Food Nutrition	
Minerals	
Minerals	
Biomolecules	

- After this modification, spreadsheet changed like this :-

Snapshot

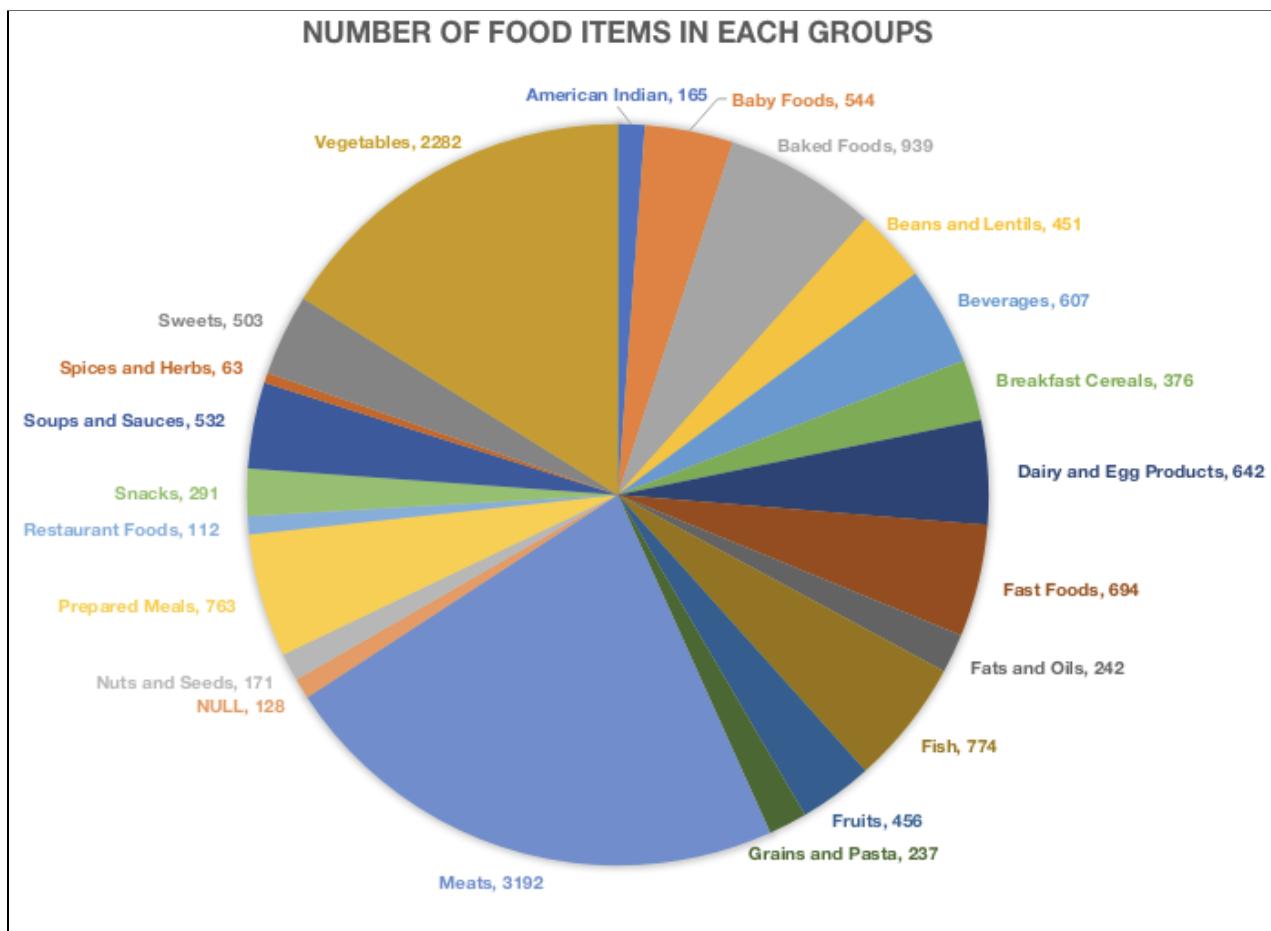
ID	Name	200 Calorie Weight (g)	Food Group
167607	Moose Meat Raw (Alaska Native)	194.175	American Indian
Calories	Fat (g)	Protein (g)	Carbohydrate (g)
103	1.5	22.3	0
Sugars (g)	Fiber (g)	Cholesterol (mg)	Added Sugar (g)
0	0	54	NULL
Saturated Fats (g)	Net-Carbs (g)	Water (g)	Omega 3s (mg)
0.22	0	74.79	800
Omega 6s (mg)	PRAL Score	Trans Fatty Acids (g)	Soluble Fiber (g)
400	9.673	NULL	NULL
Insoluble Fiber (g)	Calcium, Ca (mg)	Iron, Fe (mg)	Potassium, K (mg)
NULL	5	3.28	317
Magnesium, Mg (mg)	Phosphorus, P (mg)	Sodium, Na (mg)	Zinc, Zn (mg)
23	165	65	2.8
Copper, Cu (mg)	Selenium, Se (mcg)	Fluoride, F (mcg)	Molybdenum, Mo (mcg)
0.067	NULL	NULL	NULL
Chlorine (mg)	Vitamin A, IU (IU)	Vitamin A, RAE (mcg)	Retinol (mcg)
NULL	0	0	0
Thiamin (B1) (mg)	Riboflavin (B2) (mg)	Niacin (B3) (mg)	Pantothenic Acid (B5) (mg)
0.07	0.24	5	NULL
Vitamin B6 (mg)	Biotin (B7) (mcg)	Folate (B9) (mcg)	Vitamin B-12 (mcg)
NULL	NULL	NULL	NULL
Vitamin C (mg)	Vitamin D (mcg)	Vitamin D (IU) (IU)	Vitamin D2 (ergocalciferol) (mcg)
4	NULL	NULL	NULL
Vitamin D3 (cholecalciferol) (mcg)	Vitamin E (Alpha-Tocopherol) (mg)	Vitamin K (mcg)	
NULL	NULL	NULL	

VISUAL REPRESENTATION

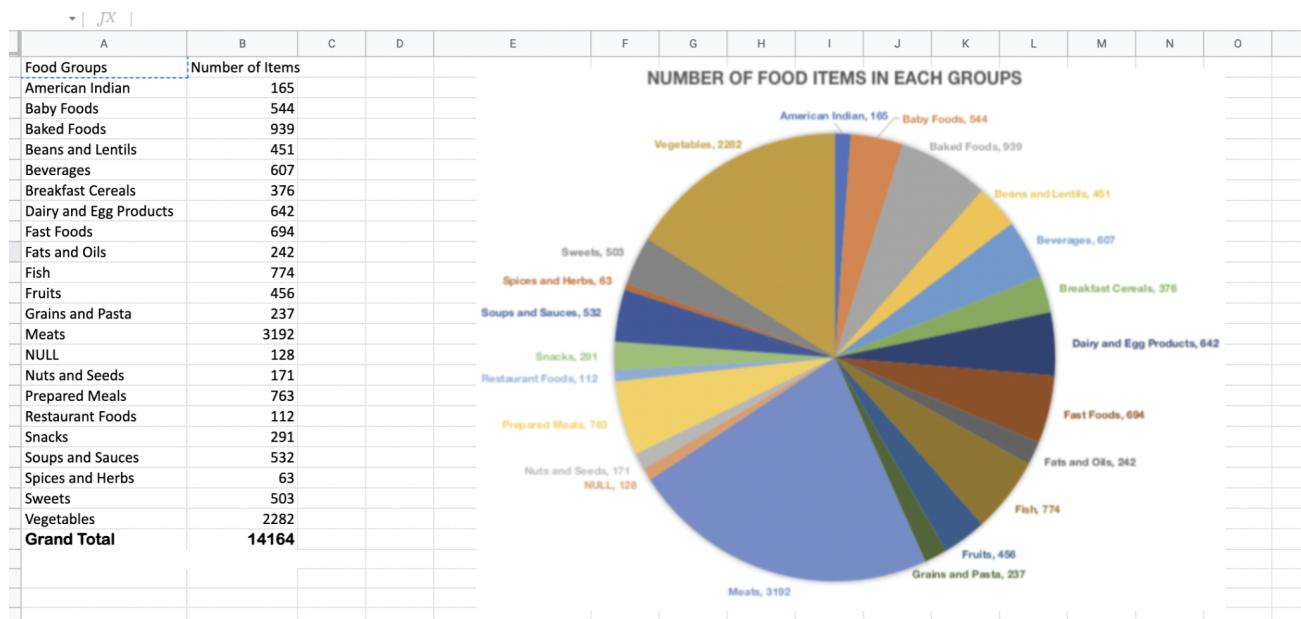
- **Question 1 :** How many food groups are there in the Table with total food in each group. (in Graphs)

Solution :

- ❖ From this Graph, we can conclude that, there are 22 different Food Groups, with average food items as 644.(approx.).
- ❖ The Maximum Food Items is present in the **Meats**, i.e. 3192.
- ❖ The Minimum Food Items is presented in **Spices and Herb**, that is 63.
- ❖ There is a Food Group called **NULL**, with 128 Food Items. This Group contains the food which does not fall under any other Food Group.



Screenshot



- **Question 2 : Compare**

- Maximum and,
- Minimum

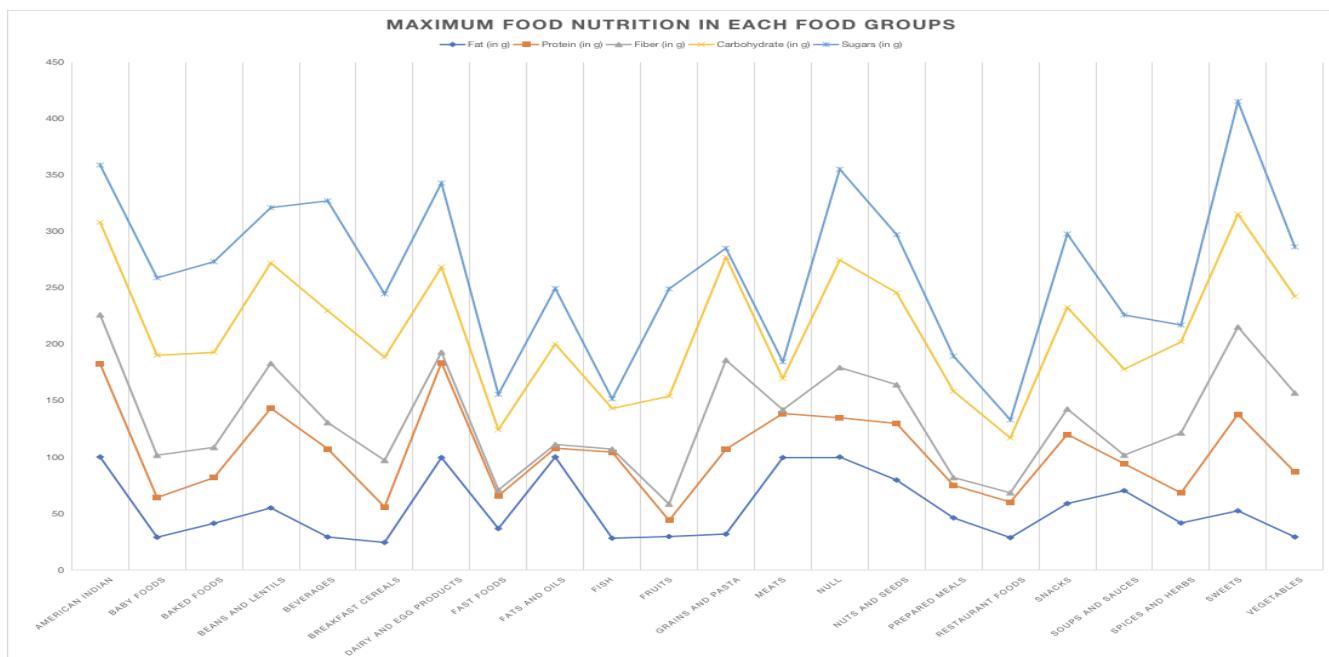
Nutrition value for each group with graph representation of Fat, Protein, Sugar, Carbohydrates, Fiber. (in Table and Graphs)

Solution :

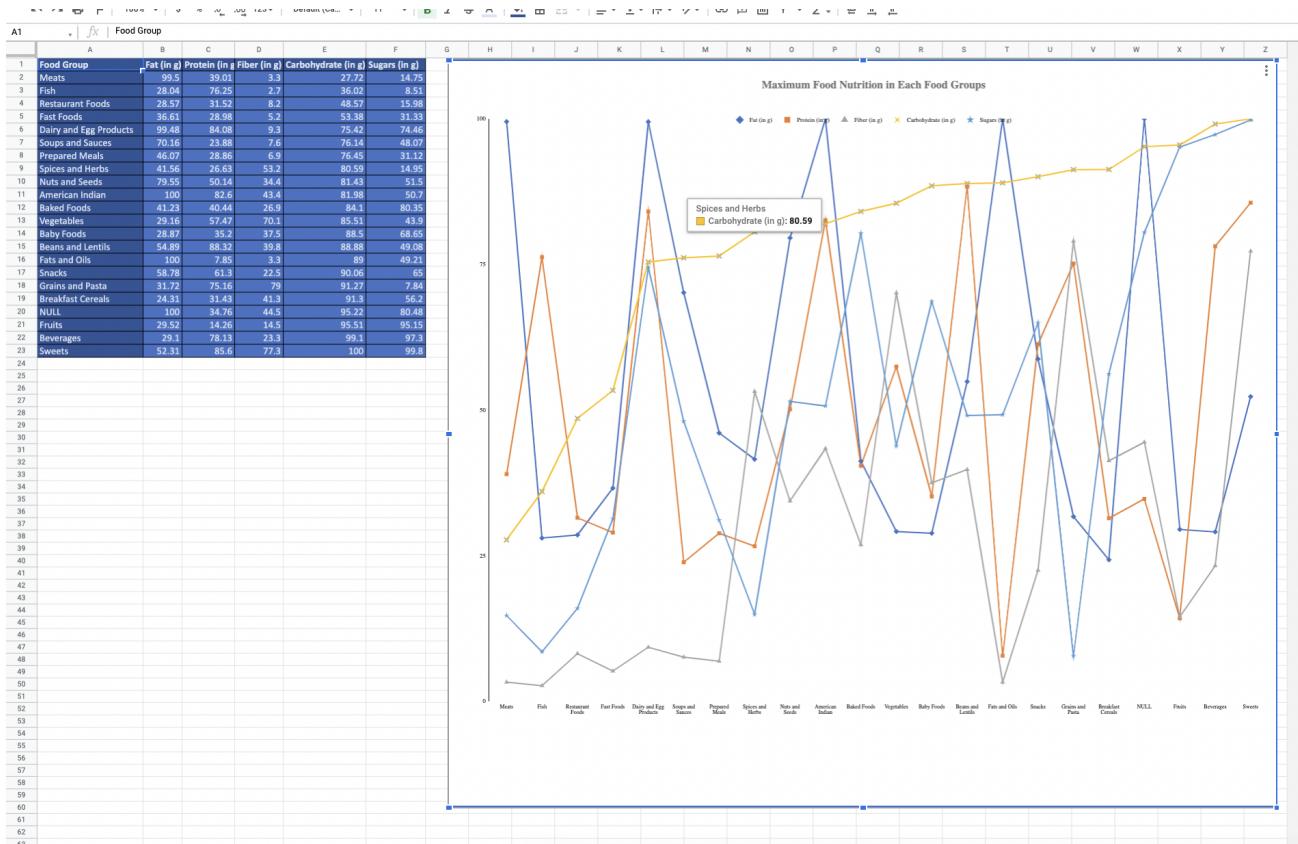
a) Maximum Nutrition Value Presents in Food Groups

Food Group	Fat (in g)	Protein (in g)	Fiber (in g)	Carbohydrate (in g)	Sugars (in g)
American Indian	100	82.6	43.4	81.98	50.7
Baby Foods	28.87	35.2	37.5	88.5	68.65
Baked Foods	41.23	40.44	26.9	84.1	80.35
Beans and Lentils	54.89	88.32	39.8	88.88	49.08
Beverages	29.1	78.13	23.3	99.1	97.3
Breakfast Cereals	24.31	31.43	41.3	91.3	56.2
Dairy and Egg Products	99.48	84.08	9.3	75.42	74.46
Fast Foods	36.61	28.98	5.2	53.38	31.33
Fats and Oils	100	7.85	3.3	89	49.21

Fish	28.04	76.25	2.7	36.02	8.51
Fruits	29.52	14.26	14.5	95.51	95.15
Grains and Pasta	31.72	75.16	79	91.27	7.84
Meats	99.5	39.01	3.3	27.72	14.75
NULL	100	34.76	44.5	95.22	80.48
Nuts and Seeds	79.55	50.14	34.4	81.43	51.5
Prepared Meals	46.07	28.86	6.9	76.45	31.12
Restaurant Foods	28.57	31.52	8.2	48.57	15.98
Snacks	58.78	61.3	22.5	90.06	65
Soups and Sauces	70.16	23.88	7.6	76.14	48.07
Spices and Herbs	41.56	26.63	53.2	80.59	14.95
Sweets	52.31	85.6	77.3	100	99.8
Vegetables	29.16	57.47	70.1	85.51	43.9



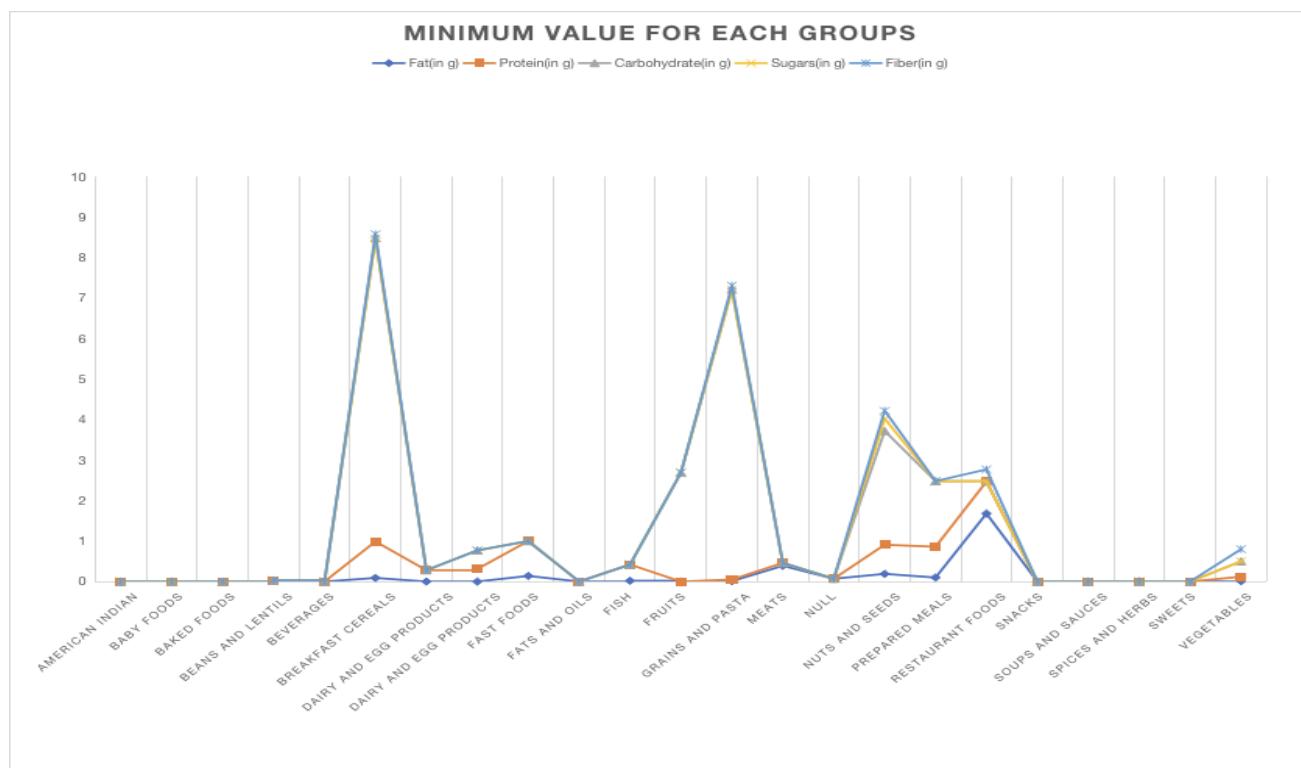
Screenshot



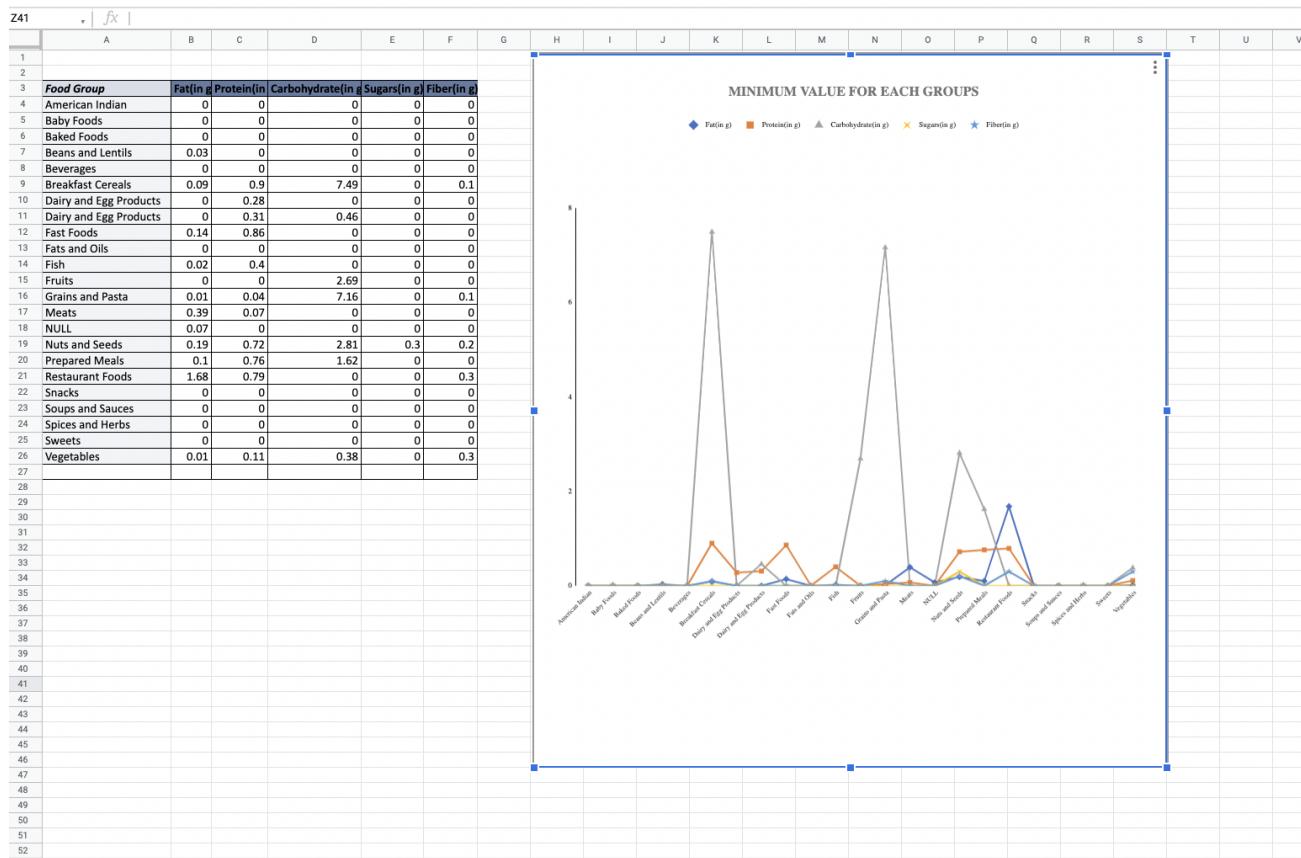
b) Minimum Nutrition Value Presents in Food Groups

Food Group	Fat(in g)	Protein(in g)	Carbohydrate(in g)	Sugars(in g)	Fiber(in g)
American Indian	0	0	0	0	0
Baby Foods	0	0	0	0	0
Baked Foods	0	0	0	0	0
Beans and Lentils	0.03	0	0	0	0
Beverages	0	0	0	0	0
Breakfast Cereals	0.09	0.9	7.49	0	0.1
Dairy and Egg Products	0	0.28	0	0	0
Dairy and Egg Products	0	0.31	0.46	0	0
Fast Foods	0.14	0.86	0	0	0
Fats and Oils	0	0	0	0	0

Fish	0.02	0.4	0	0	0
Fruits	0	0	2.69	0	0
Grains and Pasta	0.01	0.04	7.16	0	0.1
Meats	0.39	0.07	0	0	0
NULL	0.07	0	0	0	0
Nuts and Seeds	0.19	0.72	2.81	0.3	0.2
Prepared Meals	0.1	0.76	1.62	0	0
Restaurant Foods	1.68	0.79	0	0	0.3
Snacks	0	0	0	0	0
Soups and Sauces	0	0	0	0	0
Spices and Herbs	0	0	0	0	0
Sweets	0	0	0	0	0
Vegetables	0.01	0.11	0.38	0	0.3



Screenshot



c) Conclusion

Maximum Nutrition Value Chart Conclusion

- Maximum Fat is present in the **American Indian, Fats & Oils, and Null Food Groups**. (i.e. 100 each)
- Maximum Protein is present in the **Beans and Lentils, Sweets and Dairy and Egg Products**. (i.e. 88.32, 85.6, 84.08 respectively)
- Maximum Sugar is present in the **Sweet, Beverage and Fruits**. (i.e 99.8, 97.3, 95.15 respectively)
- Maximum Carbohydrate is present in the **Sweet, Beverage and Fruits**. (i.e 100, 99.1, 95.51 respectively)
- Maximum Fiber is present in the **Grain and Pasta, Sweets and Vegetables**. (i.e 79, 77.3, 70.1 respectively)

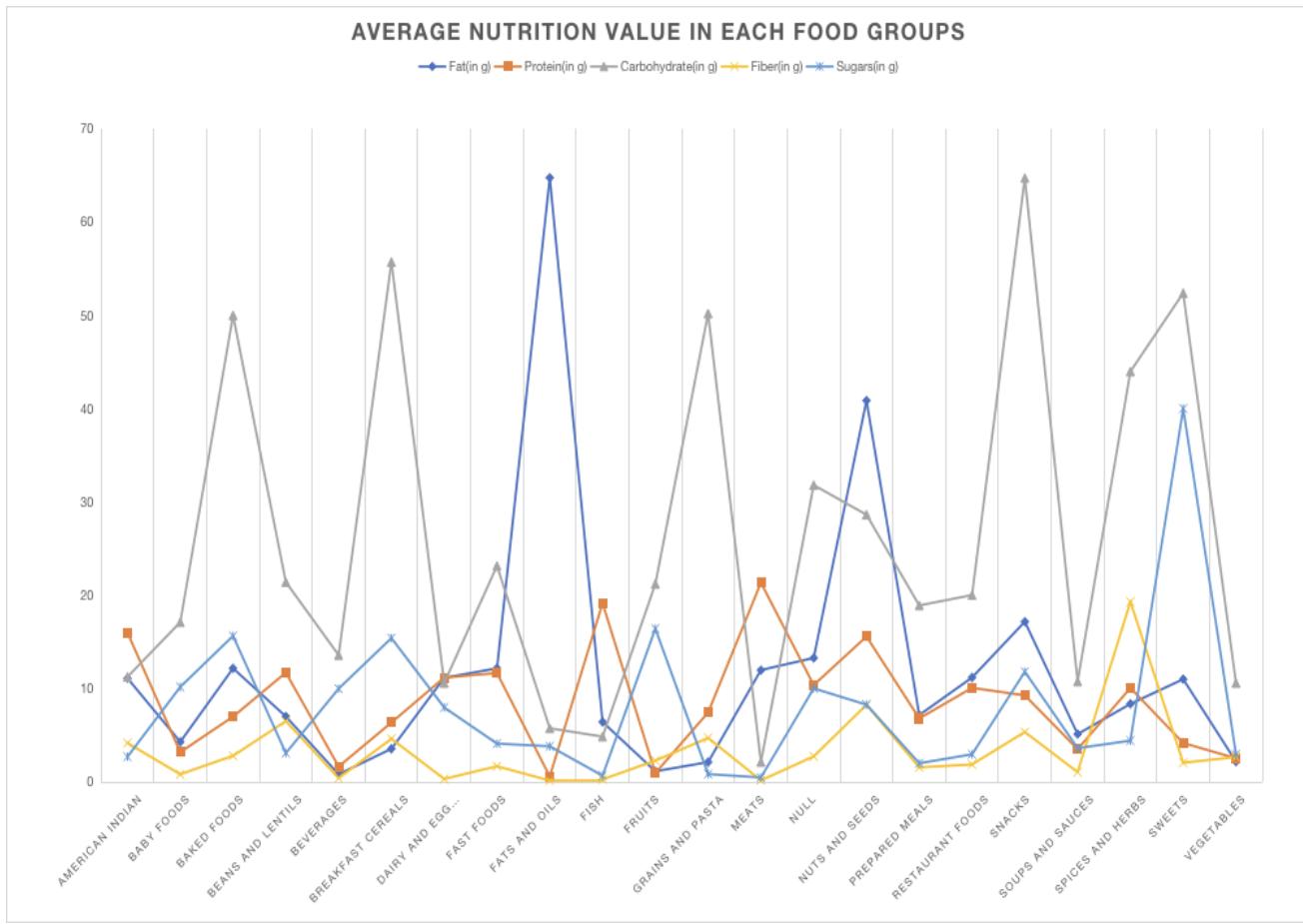
Minimum Nutrition Value Chart Conclusion

- Minimum Nutrition Value is almost zero is every food group

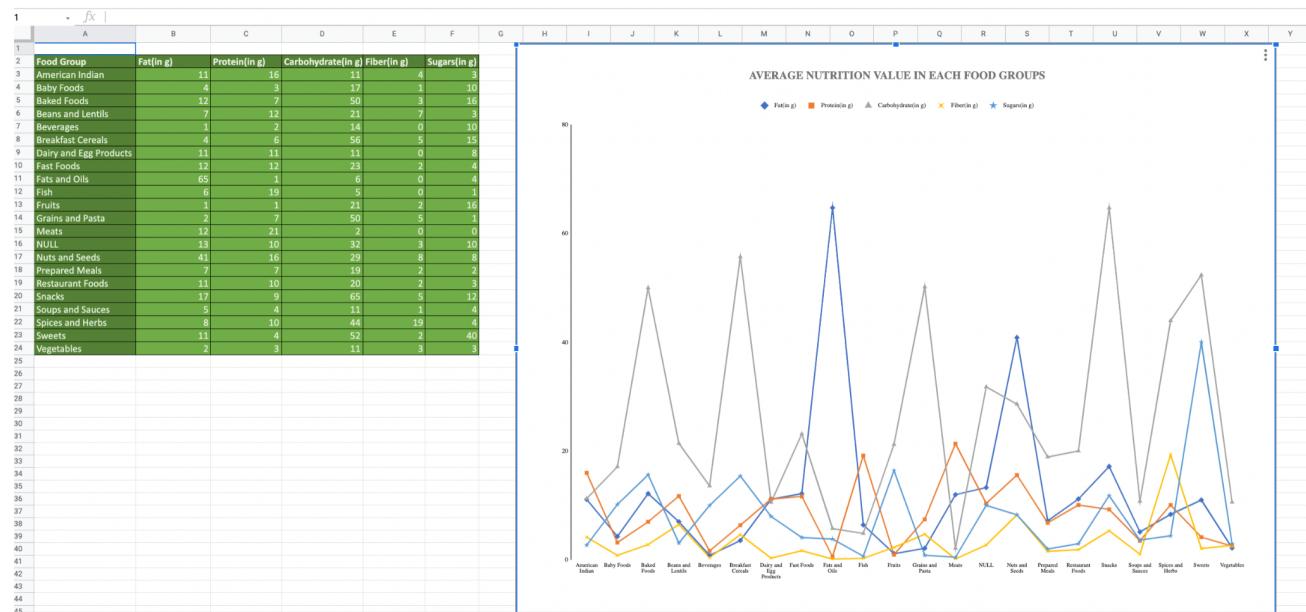
- **Question 3 :** Compare the Average Nutrition value for each group with graph representation of Fat, Protein, Sugar, Carbohydrates, Fiber. (in Table and Graphs)

Solution :

Food Group	Fat(in g)	Protein(in g)	Carbohydrate(in g)	Fiber(in g)	Sugars(in g)
American Indian	11	16	11	4	3
Baby Foods	4	3	17	1	10
Baked Foods	12	7	50	3	16
Beans and Lentils	7	12	21	7	3
Beverages	1	2	14	0	10
Breakfast Cereals	4	6	56	5	15
Dairy and Egg Products	11	11	11	0	8
Fast Foods	12	12	23	2	4
Fats and Oils	65	1	6	0	4
Fish	6	19	5	0	1
Fruits	1	1	21	2	16
Grains and Pasta	2	7	50	5	1
Meats	12	21	2	0	0
NULL	13	10	32	3	10
Nuts and Seeds	41	16	29	8	8
Prepared Meals	7	7	19	2	2
Restaurant Foods	11	10	20	2	3
Snacks	17	9	65	5	12
Soups and Sauces	5	4	11	1	4
Spices and Herbs	8	10	44	19	4
Sweets	11	4	52	2	40
Vegetables	2	3	11	3	3



Screenshot



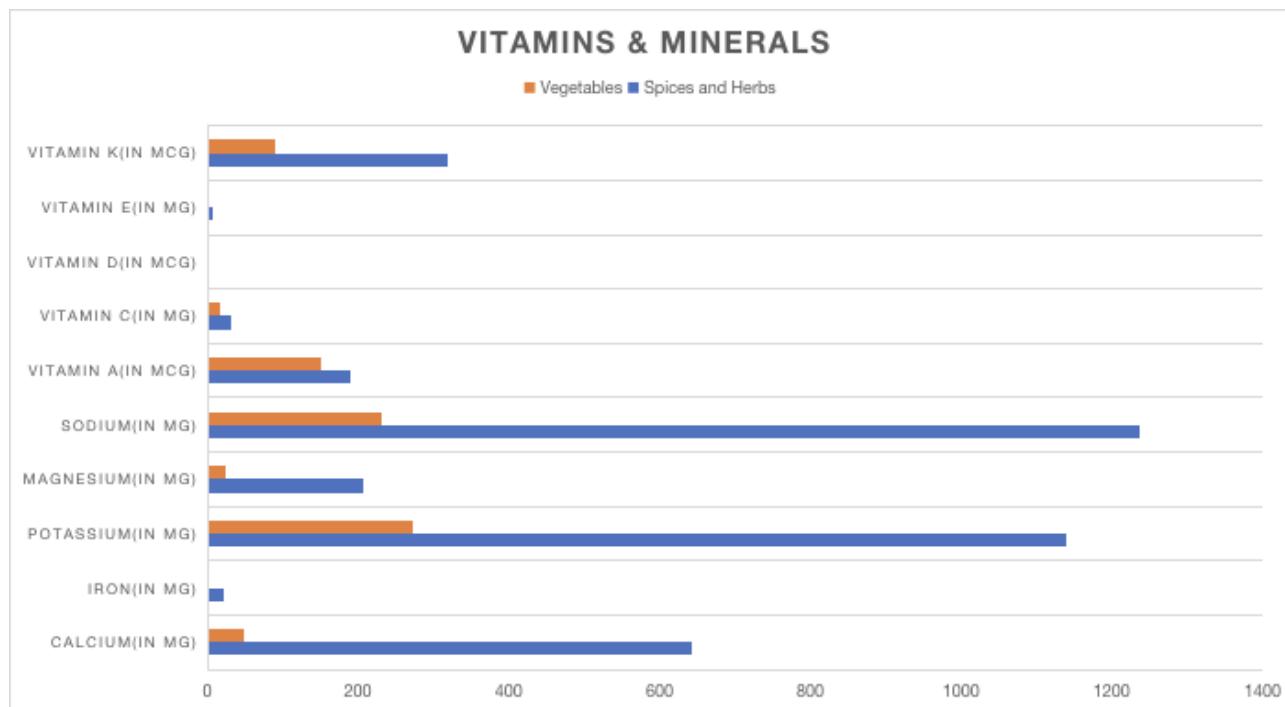
Conclusion

- Food Group with the highest average of Fat's is **Fats & Oil**, with value 65.
- Best Food Group for Proteins is **Meat** (i.e.21)
- Food Group rich in Carbohydrates is **Snacks**. (i.e 65)
- The Food Group best in Fibers is **Spice and Herbs**. (i.e 19)
- The Food Group rich in Sugar is **Sugar**. (i.e 40)
- The Food Group with Minimum Nutrition Value is **Vegetables**.

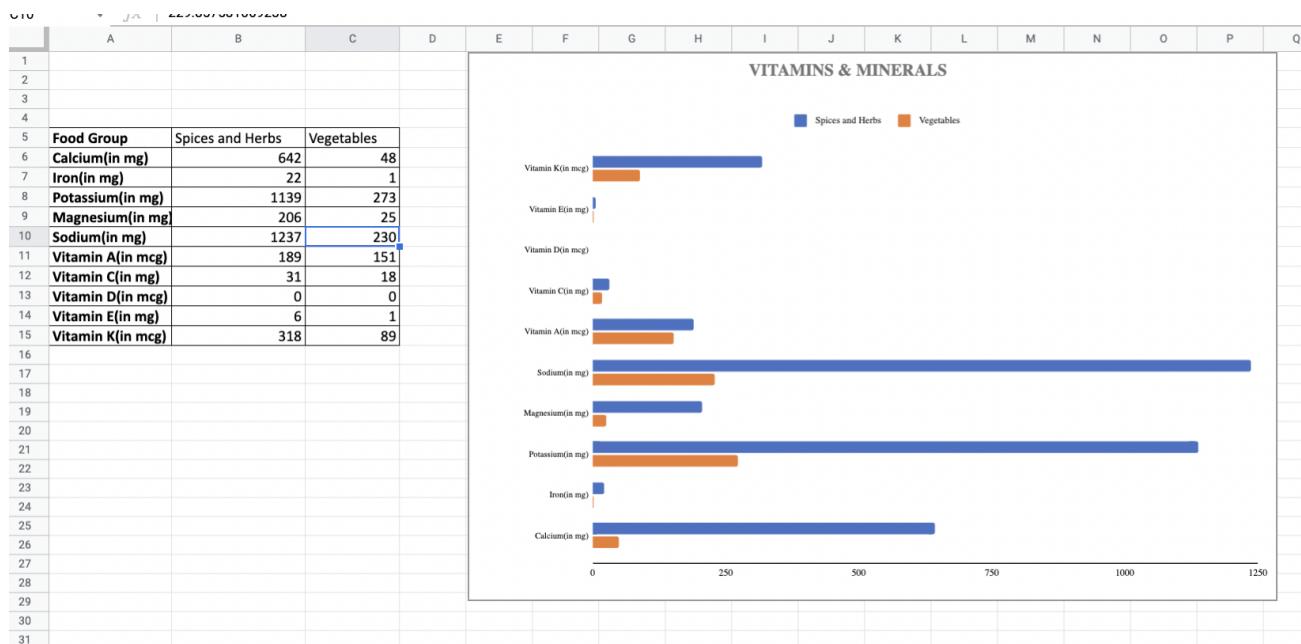
- **Question 4 :** Compare the Average any 10 Vitamins and Minerals present in the Vegetable and Spice and Herbs. (in Table and Graphs)

Solution :

Food Group	Spices and Herbs	Vegetables
Calcium(in mg)	642	48
Iron(in mg)	22	1
Potassium(in mg)	1139	273
Magnesium(in mg)	206	25
Sodium(in mg)	1237	230
Vitamin A(in mcg)	189	151
Vitamin C(in mg)	31	18
Vitamin D(in mcg)	0	0
Vitamin E(in mg)	6	1
Vitamin K(in mcg)	318	89



Screenshot



Conclusion

- From this Graph and Table, we can say that most of the **Vitamins** and **Minerals** are present in the **Spice and Herbs**, than in **Vegetables**.
- Maximum present minerals in the **Spice & Herbs** and **Vegetables** is Calcium, (Ca) with 642 & 48 respectively.
- Minimum present minerals in the **Spice & Herbs** and **Vegetables** is Iron, (Fe) with 21 & 1 respectively.
- Maximum present vitamins in the **Spice & Herbs** and **Vegetables** is Vitamin A and Vitamin K, with 317 & 151 respectively.
- Minimum present vitamins in the **Spice & Herbs** and **Vegetables** is Vitamin D, with 0 & 0.1062 respectively.

- **Question 5** : To Make Search Bar for searching food information using their Food ID (using VLOOKUP)

Solution

Search Bar for searching any food Nutrition Value using Food ID. This is made using VLOOKUP Function.

Information Center											
FoodID				Food Group	#N/A						
Food Name	#N/A										
Basic Food Detail					Minerals Presents						
Calories	#N/A	Fat(g)	#N/A	Protein(g)	#N/A	Calcium, Ca (mg)	#N/A	Iron, Fe (mg)	#N/A	Potassium, K (mg)	#N/A
Carbohydrates(g)	#N/A	Sugar (g)	#N/A	Fiber (g)	#N/A	Magnesium, Mg (mg)	#N/A	Phosphorus, P (mg)	#N/A	Sodium, Na (mg)	#N/A
Cholesterol (g)	#N/A	Added Sugar (g)	#N/A	Saturated Fat (g)	#N/A	Zinc, Zn (mg)	#N/A	Copper, Cu (mg)	#N/A	Selenium, Se (mcg)	#N/A
Net Carbs (g)	#N/A	Water (g)	#N/A	Omega 3s (mg)	#N/A	Fluoride, F (mcg)	#N/A	Molybdenum, Mo (mcg)	#N/A	Chlorine (mg)	#N/A
Omega 6s (mcg)	#N/A	PRAI Score	#N/A	Trans Fatty Acids	#N/A						
Soluble Fiber (g)	#N/A	Insoluble Fiber (g)	#N/A								
Vitamins											
Vitamin A, IU (IU)	#N/A	Vitamin A, RAE (mcg)	#N/A	Retinol (mcg)	#N/A	Thiamin (B1) (mcg)	#N/A	Riboflavin (B2) (mcg)	#N/A	Niacin (B3) (mcg)	#N/A
Pantothenic Acid (B5) (mcg)	#N/A	Vitamin B6 (mcg)	#N/A	Biotin (B7) (mcg)	#N/A	Folate (B9) (mcg)	#N/A	Vitamin B-12 (mcg)	#N/A	Vitamin C (mcg)	#N/A
Vitamin D (mcg)	#N/A	Vitamin D (IU) (IU)	#N/A	Vitamin D2 (ergocaliferol) (mcg)	#N/A	Vitamin D3 (cholecalciferol) (mcg)	#N/A	Vitamin E (Alpha-Tocopherol) (mg)	#N/A	Vitamin K (mcg)	#N/A

After Searching

Information Center											
FoodID	167630			Food Group	American Indian						
Food Name	Chilchen (Red Berry Beverage) (Navajo)										
Basic Food Detail					Minerals Presents						
Calories	44	Fat(g)	0.63	Protein(g)	0.81	Calcium, Ca (mg)	7	Iron, Fe (mg)	0.95	Potassium, K (mg)	28
Carbohydrates(g)	8.68	Sugar (g)	2.6	Fiber (g)	NULL	Magnesium, Mg (mg)	9	Phosphorus, P (mg)	23	Sodium, Na (mg)	15
Cholesterol (g)	NULL	Added Sugar (g)	NULL	Saturated Fat (g)	0.073	Zinc, Zn (mg)	0.19	Copper, Cu (mg)	0.019	Selenium, Se (mcg)	NULL
Net Carbs (g)	8.68	Water (g)	89.69	Omega 3s (mg)	7	Fluoride, F (mcg)	NULL	Molybdenum, Mo (mcg)	NULL	Chlorine (mg)	NULL
Omega 6s (mcg)	144	PRAI Score	0.329	Trans Fatty Acids	NULL						
Soluble Fiber (g)	NULL	Insoluble Fiber (g)	NULL								
Vitamins											
Vitamin A, IU (IU)	NULL	Vitamin A, RAE (mcg)	NULL	Retinol (mcg)	NULL	Thiamin (B1) (mcg)	0.02	Riboflavin (B2) (mcg)	0.015	Niacin (B3) (mcg)	0.248
Pantothenic Acid (B5) (mcg)	0.03	Vitamin B6 (mcg)	0.033	Biotin (B7) (mcg)	NULL	Folate (B9) (mcg)	8	Vitamin B-12 (mcg)	NULL	Vitamin C (mcg)	NULL
Vitamin D (mcg)	NULL	Vitamin D (IU) (IU)	NULL	Vitamin D2 (ergocaliferol) (mcg)	NULL	Vitamin D3 (cholecalciferol) (mcg)	NULL	Vitamin E (Alpha-Tocopherol) (mcg)	0	Vitamin K (mcg)	0

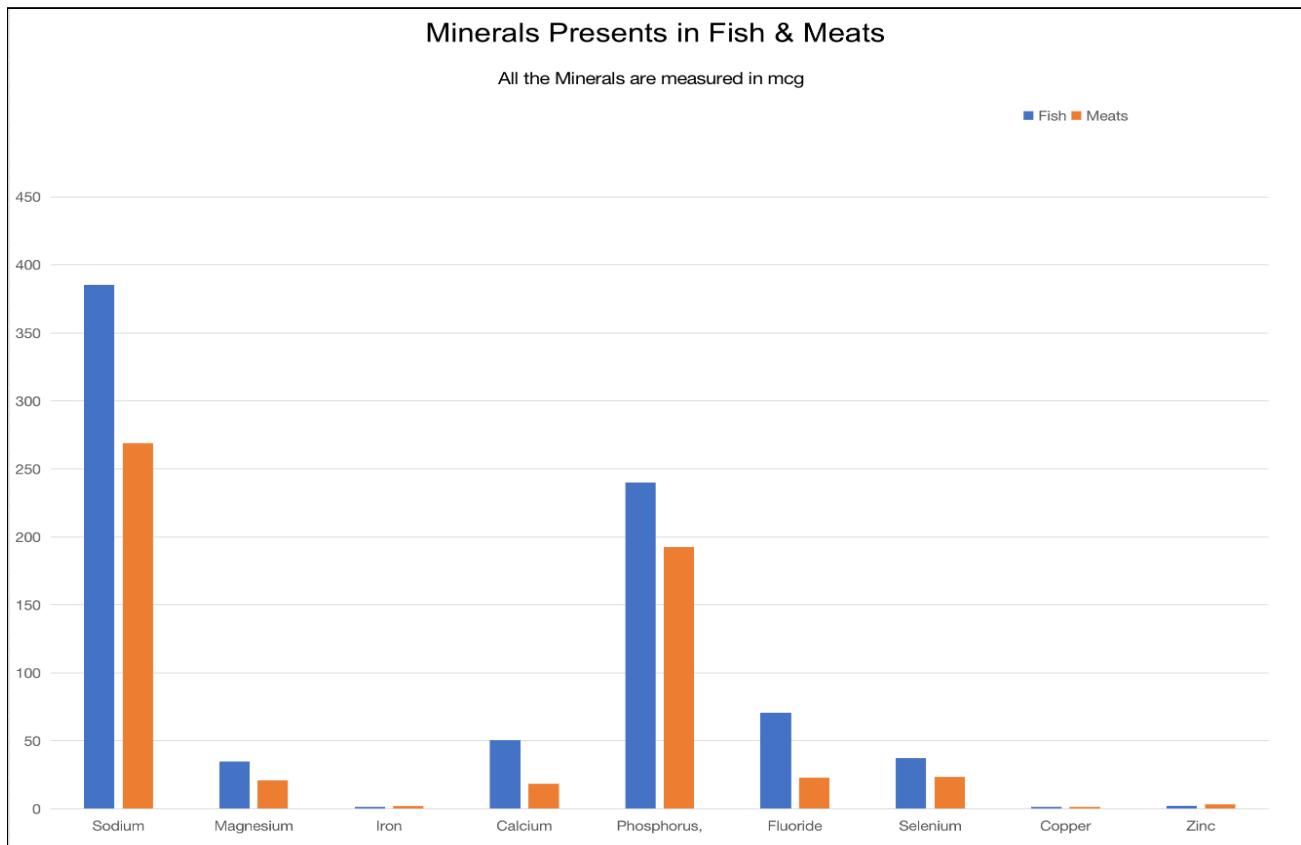
Conclusion

- This is a Search Bar for getting Information for particular food by using their respective Food ID.
- This Search Bar is created using VLOOKUP Function.

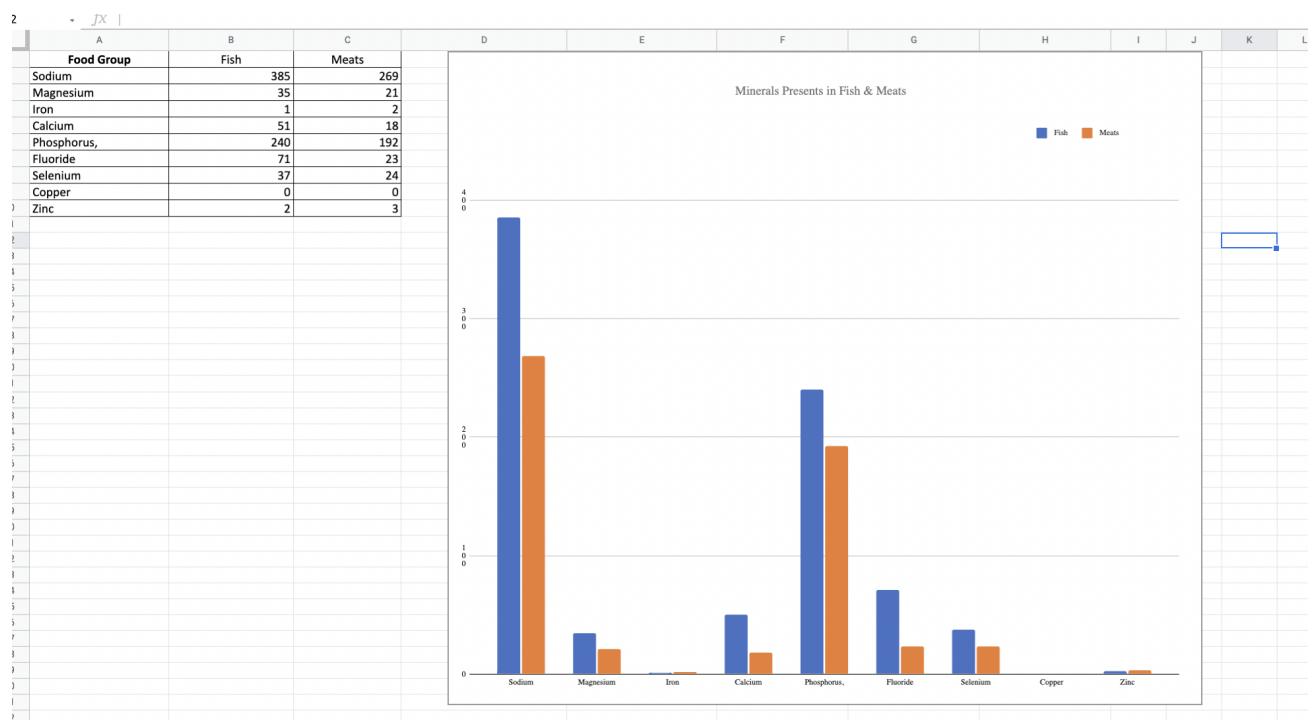
- **Question 6 :** Compare the Average Minerals presents in Meat and Fish (in Table and Graphs)

Solution

Food Group	Fish	Meats
Sodium	385	269
Magnesium	35	21
Iron	1	2
Calcium	51	18
Phosphorus,	240	192
Fluoride	71	23
Selenium	37	24
Copper	0	0
Zinc	2	3



Screenshot



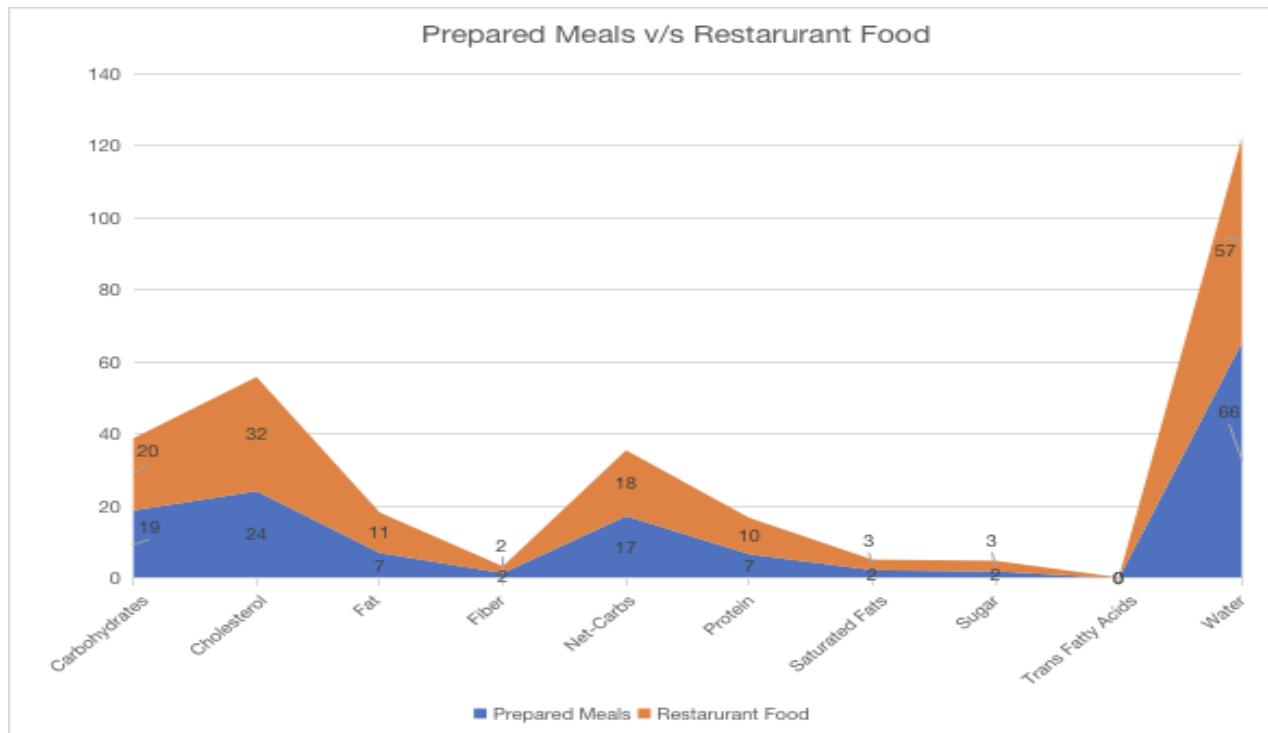
Conclusion

- From the above Graph, we can say that the Majority of Minerals are present in Fish, which is more than Meat, on the basis of their quantity that is present in it.
- The minerals which are not present in both Fish and Meat is **Copper**.
- Most of the minerals presents in the Fish and Meats are **Sodium** and **Phosphorus**.

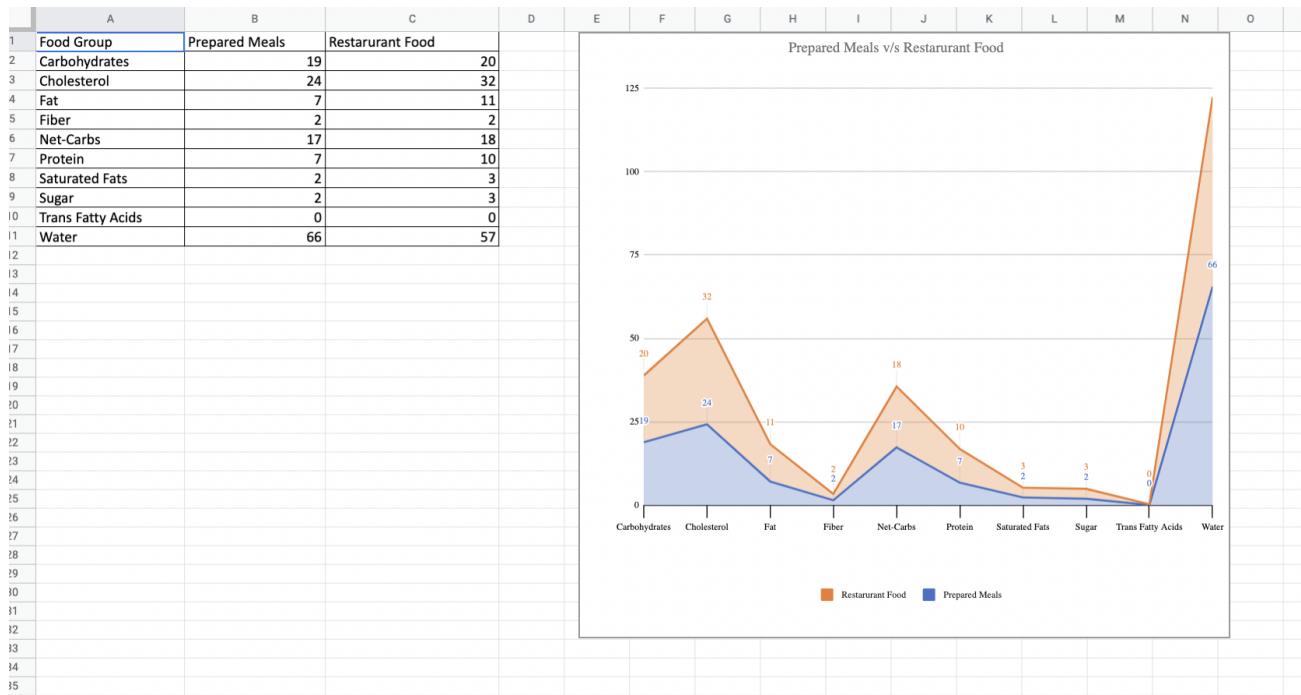
- **Question 7 :** Compare the Nutrition Value in Restaurant Food and Prepared Foods (in Tables and Graph)

Solution

Food Group	Prepared Meals	Restaurant Food
Carbohydrates	19	20
Cholesterol	24	32
Fat	7	11
Fiber	2	2
Net-Carbs	17	18
Protein	7	10
Saturated Fats	2	3
Sugar	2	3
Trans Fatty Acids	0	0
Water	66	57



Screen shot



Conclusion

- From the above Graph, we can say that the Restaurant Food and Prepared Meals are not good for Health.
 - Both Food Groups contain high values of Cholesterol and Carbohydrates in them..
 - Most of the minerals presents in the Fish and Meats are **Sodium** and **Phosphorus**.

CONCLUSION

- Dataset is being downloaded from Google (<https://tools.myfooddata.com/nutrition-facts-database-spreadsheet.php>).
- And modified for easy understanding by anyone.
- In the Table, we have used the in-built functions like VLOOKUP, Pivot Table, Graph, and some other functions, for solving given problems.
- **VLOOKUP** functions help us to create a Search Bar using their Food ID.
- **Pivot Table** helps us to create tables as per our requirement in the problem.
- **Graph** Function supports us to make different types of Graph from the Tables.
- Below link is a Complete Excel File with all the Pivot Table, Charts, that we have worked.

<https://drive.google.com/file/d/1zm1aXAcgl4A4e6E6X6XuL3Z10f4QZ-lg/view?usp=sharing>

REFERENCE

- **For VLOOKUP :**
[https://support.microsoft.com/en-us/office/vlookup-function-0bbc8083-26fe-4963-8ab8-93a18ad188a1#:~:text=In%20its%20simplest%20form%2C%20the,%2C%20or%200%2FFALSE\)](https://support.microsoft.com/en-us/office/vlookup-function-0bbc8083-26fe-4963-8ab8-93a18ad188a1#:~:text=In%20its%20simplest%20form%2C%20the,%2C%20or%200%2FFALSE))
- **For Pivot Table**
<https://www.excel-easy.com/data-analysis/pivot-tables.html>
- **Chart**
<https://www.guru99.com/visualizing-data-using-charts-in-excel.html>
- **Other Functions**
<https://www.ablebits.com/office-addins-blog/2017/06/14/basic-excel-formulas-functions-examples/>
- **Use the notes from Working with Data.**