Sprint 5 - Srihari Madhavan and Sai Roopesh

The following are the reports generated from the project database created by our team.

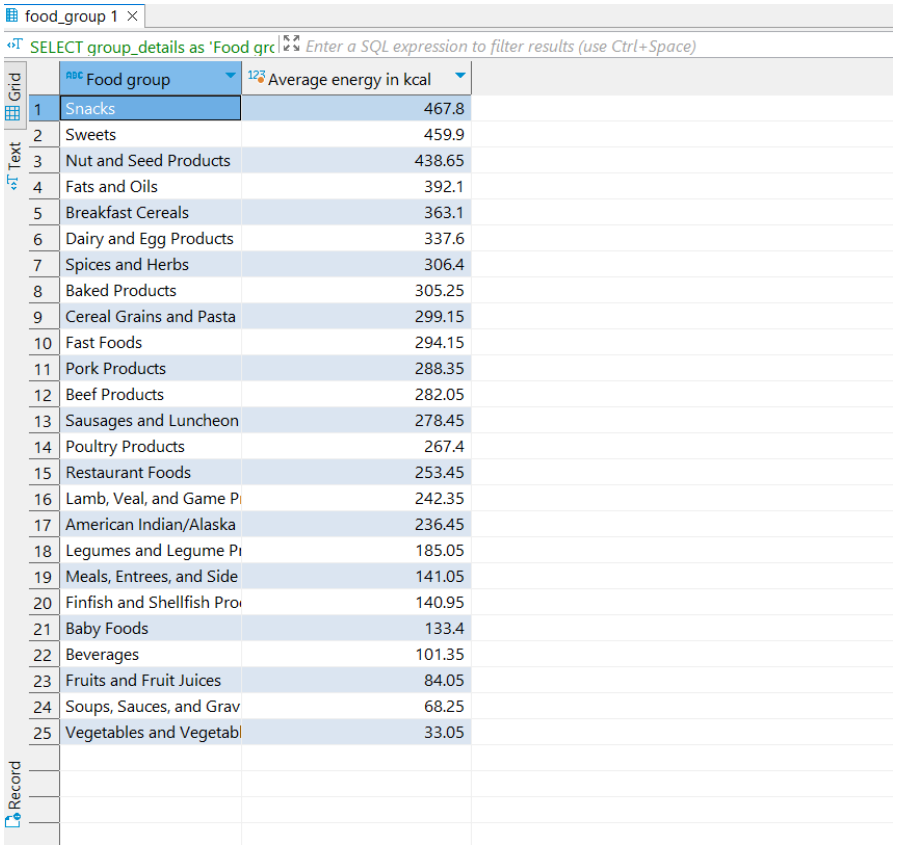
1. Order the food group based on descending order of average calories present

This helps analyse which food group would have the highest calories present and can help dieticians and doctors to look into which food groups to avoid for weight loss.

Code:

```
SELECT group_details as 'Food group', AVG(energy_in_kcal) as 'Average
energy in kcal'

from food_group fg

join food_description fd on fd.group_id = fg.food_group_id

group by group_details

order by AVG(energy_in_kcal) desc;
```

Output :



food_group 1

SELECT group_details as 'Food grc | Enter a SQL expression to filter results (use Ctrl+Space)

	Food group	Average energy in kcal
1	Snacks	467.8
2	Sweets	459.9
3	Nut and Seed Products	438.65
4	Fats and Oils	392.1
5	Breakfast Cereals	363.1
6	Dairy and Egg Products	337.6
7	Spices and Herbs	306.4
8	Baked Products	305.25
9	Cereal Grains and Pasta	299.15
10	Fast Foods	294.15
11	Pork Products	288.35
12	Beef Products	282.05
13	Sausages and Luncheon	278.45
14	Poultry Products	267.4
15	Restaurant Foods	253.45
16	Lamb, Veal, and Game P	242.35
17	American Indian/Alaska	236.45
18	Legumes and Legume Pr	185.05
19	Meals, Entrees, and Side	141.05
20	Finfish and Shellfish Pro	140.95
21	Baby Foods	133.4
22	Beverages	101.35
23	Fruits and Fruit Juices	84.05
24	Soups, Sauces, and Grav	68.25
25	Vegetables and Vegetabl	33.05

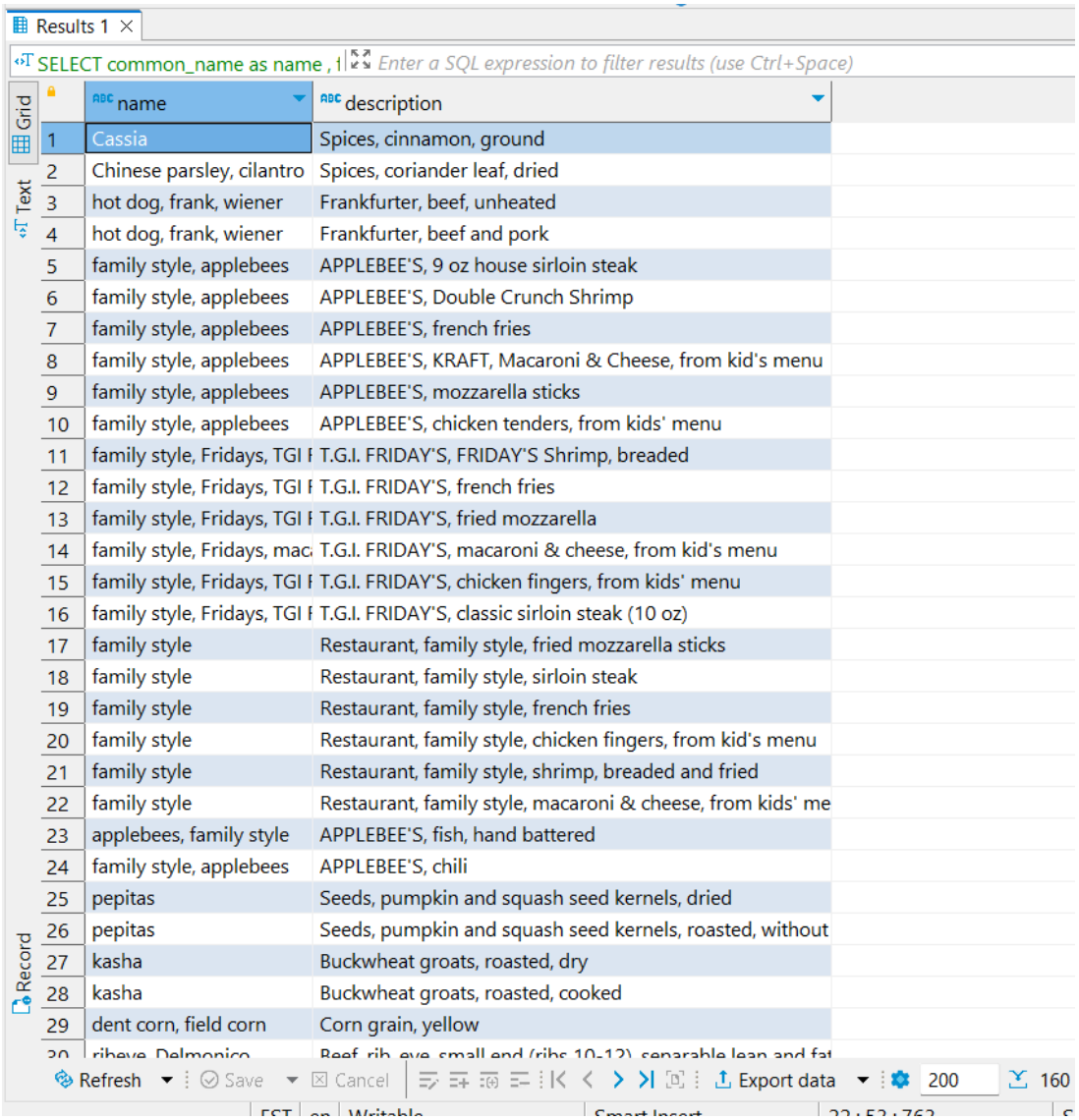
2. List of all names and descriptions of food items

This report consists of all the names such as common name, manufacturing names or scientific name through which each food item is called, It is useful when we need a list of the food items and we need appropriate short names to call them by instead of their food_id or their brief decription.

Code:

```
SELECT common_name as name , fd.description

FROM common_name cn

JOIN food_description fd ON cn.food_id = fd.food_id

UNION

SELECT manufacturing_name as name ,fd.description

FROM manufacturing_name mn

JOIN food_description fd ON mn.food_id = fd.food_id

UNION

SELECT scientific_name as name ,fd.description

FROM scientific_name sn

JOIN food_description fd ON sn.food_id = fd.food_id;
```

Output:


Results 1
SELECT common_name as name , f
Enter a SQL expression to filter results (use Ctrl+Space)
Grid
Text
Record
name
description
1 Cassia | Spices, cinnamon, ground
2 Chinese parsley, cilantro | Spices, coriander leaf, dried
3 hot dog, frank, wiener | Frankfurter, beef, unheated
4 hot dog, frank, wiener | Frankfurter, beef and pork
5 family style, applebees | APPLEBEE'S, 9 oz house sirloin steak
6 family style, applebees | APPLEBEE'S, Double Crunch Shrimp
7 family style, applebees | APPLEBEE'S, french fries
8 family style, applebees | APPLEBEE'S, KRAFT, Macaroni & Cheese, from kid's menu
9 family style, applebees | APPLEBEE'S, mozzarella sticks
10 family style, applebees | APPLEBEE'S, chicken tenders, from kids' menu
11 family style, Fridays, TGI F | T.G.I. FRIDAY'S, FRIDAY'S Shrimp, breaded
12 family style, Fridays, TGI F | T.G.I. FRIDAY'S, french fries
13 family style, Fridays, TGI F | T.G.I. FRIDAY'S, fried mozzarella
14 family style, Fridays, mac | T.G.I. FRIDAY'S, macaroni & cheese, from kid's menu
15 family style, Fridays, TGI F | T.G.I. FRIDAY'S, chicken fingers, from kids' menu
16 family style, Fridays, TGI F | T.G.I. FRIDAY'S, classic sirloin steak (10 oz)
17 family style | Restaurant, family style, fried mozzarella sticks
18 family style | Restaurant, family style, sirloin steak
19 family style | Restaurant, family style, french fries
20 family style | Restaurant, family style, chicken fingers, from kid's menu
21 family style | Restaurant, family style, shrimp, breaded and fried
22 family style | Restaurant, family style, macaroni & cheese, from kids' me
23 applebees, family style | APPLEBEE'S, fish, hand battered
24 family style, applebees | APPLEBEE'S, chili
25 pepitas | Seeds, pumpkin and squash seed kernels, dried
26 pepitas | Seeds, pumpkin and squash seed kernels, roasted, without
27 kasha | Buckwheat groats, roasted, dry
28 kasha | Buckwheat groats, roasted, cooked
29 dent corn, field corn | Corn grain, yellow
Refresh
Save
Cancel
Export data
200
160

3. % of Protein content to that of recommended content for food items

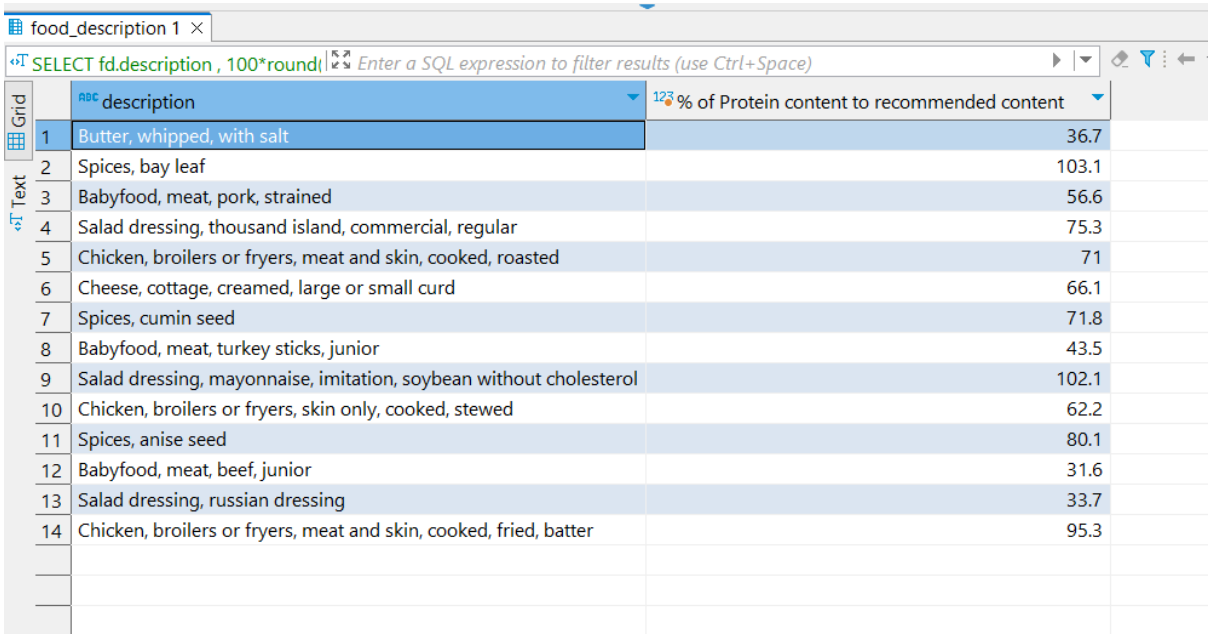
This report provides the % of recommended protein content each food item contains.

This report is important for dieticians and doctors to find which foods have high protein content so that they may be prescribed for people who practice weight loss or muscle gain

Code:

```
SELECT fd.description ,
100*round(nc.nutrients_in_g/nl.recommended_daily_amounts,3)

as '% of Protein content to recommended content'

FROM nutrient_list nl

JOIN nutrients_contained nc ON nl.nutrient_id = nc.nutrient_id

JOIN food_description fd ON fd.food_id = nc.food_id

WHERE nl.nutrient_name like 'Protein%';
```

Output:



	description	% of Protein content to recommended content
1	Butter, whipped, with salt	36.7
2	Spices, bay leaf	103.1
3	Babyfood, meat, pork, strained	56.6
4	Salad dressing, thousand island, commercial, regular	75.3
5	Chicken, broilers or fryers, meat and skin, cooked, roasted	71
6	Cheese, cottage, creamed, large or small curd	66.1
7	Spices, cumin seed	71.8
8	Babyfood, meat, turkey sticks, junior	43.5
9	Salad dressing, mayonnaise, imitation, soybean without cholesterol	102.1
10	Chicken, broilers or fryers, skin only, cooked, stewed	62.2
11	Spices, anise seed	80.1
12	Babyfood, meat, beef, junior	31.6
13	Salad dressing, russian dressing	33.7
14	Chicken, broilers or fryers, meat and skin, cooked, fried, batter	95.3

4. Count the number of countries for each nutrient with atleast 3% prevalence of deficiencies

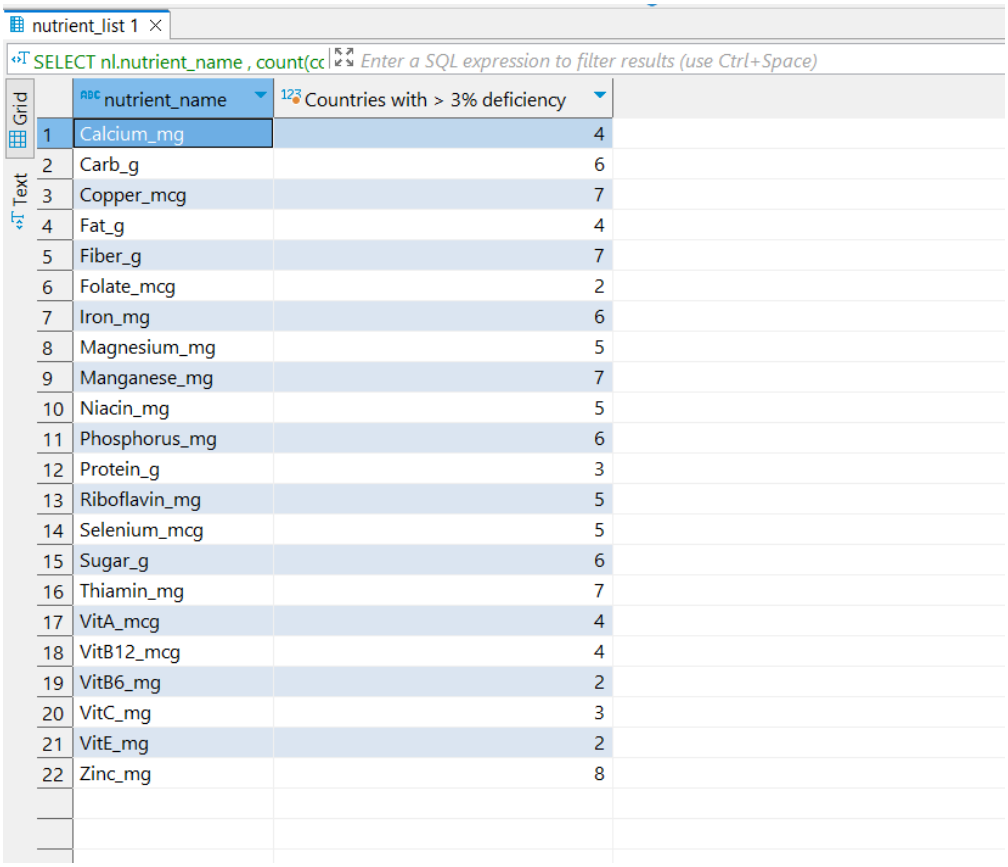
This report counts the number of countries, for each nutrient (like Calcium, vitamins, zinc), that have population percentage greater than 3% who are deficient to that nutrient

This can be useful for Organisations like the United Nations to look into how many nations require immediate care for food resources since the amount of help they can provide is limited and needs to be spent optimally.

Code:

```
SELECT nl.nutrient_name , count(country_name ) as 'Countries with > 3% deficiency'

FROM prominent_deficiencies_by_country pdbc

JOIN country_deficiency_relationship cdr ON pdbc.country_id = cdr.country_id

JOIN nutrient_list nl ON nl.nutrient_id = cdr.nutrient_id

where cdr.Prevalence_of_deficiency > 3

group by nl.nutrient_name ;
```

Output:



	nutrient_name	Countries with > 3% deficiency
1	Calcium_mg	4
2	Carb_g	6
3	Copper_mcg	7
4	Fat_g	4
5	Fiber_g	7
6	Folate_mcg	2
7	Iron_mg	6
8	Magnesium_mg	5
9	Manganese_mg	7
10	Niacin_mg	5
11	Phosphorus_mg	6
12	Protein_g	3
13	Riboflavin_mg	5
14	Selenium_mcg	5
15	Sugar_g	6
16	Thiamin_mg	7
17	VitA_mcg	4
18	VitB12_mcg	4
19	VitB6_mg	2
20	VitC_mg	3
21	VitE_mg	2
22	Zinc_mg	8

5. Proportion of each food group in diets based on diet_food_details

This report informs us the proportion of each food group allowed in each diet. This is report is useful for dieticians to provide advice to patients on how much they can have of each food type for their diet.

Code:

```
SELECT fg.group_details ,dafp.diet_name ,

case

when dfc.diet_food_details = 'can be skipped' THEN 0.25

when dfc.diet_food_details = 'needed sometimes' THEN 0.5

when dfc.diet_food_details = 'essential' THEN 0.75

end as 'Proportion allowed in diet'

FROM food_group fg

JOIN food_description fd on fg.food_group_id = fd.group_id

join diet_food_combination dfc on dfc.food_id = fd.food_id

join diets_and_food_preferences dafp on dafp.diet_id = dfc.diet_id ;
```

Output:

food_group(+) 1

SELECT fg.group_details ,dafp.diet_ Enter a SQL expression to filter results (use Ctrl+Space)

	group_details	diet_name	Proportion allowed in diet
1	Dairy and Egg Products	d1	0.25
2	Spices and Herbs	d1	0.5
3	Baby Foods	d1	0.75
4	Dairy and Egg Products	d2	0.5
5	Spices and Herbs	d2	0.75
6	Baby Foods	d2	0.25
7	Dairy and Egg Products	d3	0.5
8	Spices and Herbs	d3	0.5
9	Baby Foods	d3	0.25
10	Dairy and Egg Products	d4	0.25
11	Spices and Herbs	d4	0.25
12	Baby Foods	d4	0.75
13	Dairy and Egg Products	d5	0.25
14	Spices and Herbs	d5	0.75
15	Baby Foods	d5	0.75
16	Dairy and Egg Products	d6	0.75
17	Spices and Herbs	d6	0.75
18	Baby Foods	d6	0.75
19	Dairy and Egg Products	d7	0.5
20	Spices and Herbs	d7	0.25
21	Dairy and Egg Products	d8	0.75
22	Spices and Herbs	d8	0.5
23	Dairy and Egg Products	d9	0.25
24	Spices and Herbs	d9	0.5
25	Dairy and Egg Products	d10	0.75
26	Spices and Herbs	d10	0.25
27	Dairy and Egg Products	d11	0.25
28	Spices and Herbs	d11	0.75

What we've learned so far:

We learnt that planning, creating, and utilizing a Database is not an easy task by any means. During our project we worked long ours to make sure every step from drawing ERD diagrams, to generating reports for the sprint 5 were well executed to our best capabilities. We also learned how to import data into DBeaver and how to use Microsoft Visio and MariaDB. We also learned on how to look for different ways in which to generate a desired report from a database, looking into how to join multiple tables to get the desired output. Overall this project helped us peek into the big picture of how companies handle and work with mountains of data in their labyrinth of databases and how each and every report is generated through the combination of skill and hardwork.