Lamae Maharaj
Mathematics 290.2
September 15, 2022
Homework #2

Firstly, I filled in two columns consisting of homework and homework_submissions. Then, by using the script provided an attempted on creating the schemas with two important factors, the primary key and the foreign key.

The first script was the script from first assignment in which the class roster data was imported. After running that script an error popped up. It was seen by both my partner and I that there was an issue concerning the "id" due to the name inside the csv file being "student_id". Not only this, but the file also contained a column named "last_updated_at" which was not in the script from the first assignment. Attention was brought to maybe editing the script in order for this assignment to be completed.

The next script had been used create_homework to create a table. This script has another column named "homework_duration_time". This also did not exist in the csv file labelled homework. Therefore, this part was removed.

Another foreign key constraint was made for referencing the class roster after realizing the homework_submission table missed two columns. The third script caused an error shown below.
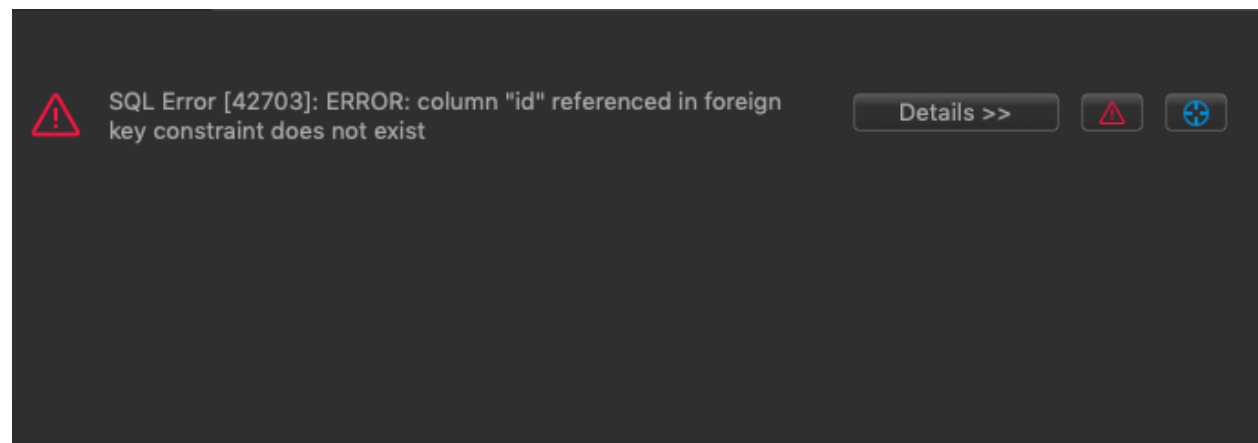
Since the foreign key constraint was listed as "id" and the column was called "student_id", it was realized that this spiked the error. The script ran after fixing this mishap. We were then able to import the tables and relate them to one another vial foreign key constraints. The script is shown below.

```sql
create table qcmath290.public.class_roster (
"student_id" bigint PRIMARY KEY
,"name" varchar
,"last_name" varchar
,"first_name" varchar
,"passion" varchar
,"link_to_interest" varchar
,"email_address" varchar
,"github_handle" varchar
,"goodreads_link" varchar
,"operating_system" varchar
,"coding_buddy_name" varchar
,"group_id" integer
,"last_updated_at" date
);

/*Create the homework table with a primary key constraint on the id field called pk_homework*/
create table qcmath290.public.homework (
"id" bigint,
"homework_name" varchar,
"posted_date" timestamp,
"due_date" timestamp,
constraint "pk_homework" primary key ("id")
);

/*Creating the homework_submission table with
 * - a primary key constraint on the id field called pk_homework_submission
 * - a foreign key constraint on the homework_id field called fk_homework_id referencing the id field in the homework table
 * */
create table qcmath290.public.homework_submission(
"id" bigint,
student_id bigint,
homework_id bigint,
submission_datetime date,
homework_duration_minutes bigint,
primary key ("id"),
constraint
"fk_homework" foreign key (homework_id) references homework(id),
constraint
"fk_student_id" foreign key (student_id) references class_roster(student_id)
);
```

The results were the following three tables.

student_id	name	last_name	first_name	passion	link_t
1	Aracely Menjivar	Menjivar	Aracely	food	https:/
2	Christian Gomez	Gomez	Christian	Martial Arts	https:/
3	Tao Wu	Wu	Tao	philosophy	https:/
4	Khalil Allwood	Allwood	Khalil	Music	https:/
5	Fariha Khan	Khan	Fariha	hiking	https:/
6	Rachel Brunner	Brunner	Rachel	Music	https:/
7	Sreeya Bobby	Bobby	Sreeya	Running	https:/
8	Laasya Indrakanti	Indrakanti	Laasya	cooking	
9	Lamae Maharaj	Maharaj	Lamae	block chain	https:/

id	homework_name	posted_date	due_date
1	HW_01	2022-09-01 00:00:00.000	2022-09-08 00:00:00.000
2	HW_02	2022-09-09 00:00:00.000	2022-09-15 00:00:00.000

id	student_id	homework_id	submission_datetime	homework_durat
id: int8 1	6	1	2022-09-08	
2	1	[NULL]	2022-09-08	
3	5	1	2022-09-08	
4	7	1	2022-09-08	
5	9	1	2022-09-08	

After learning that some visuals can give better understanding to the material, it was successfully shown that the relationships were made as we had wanted with the visualization below.
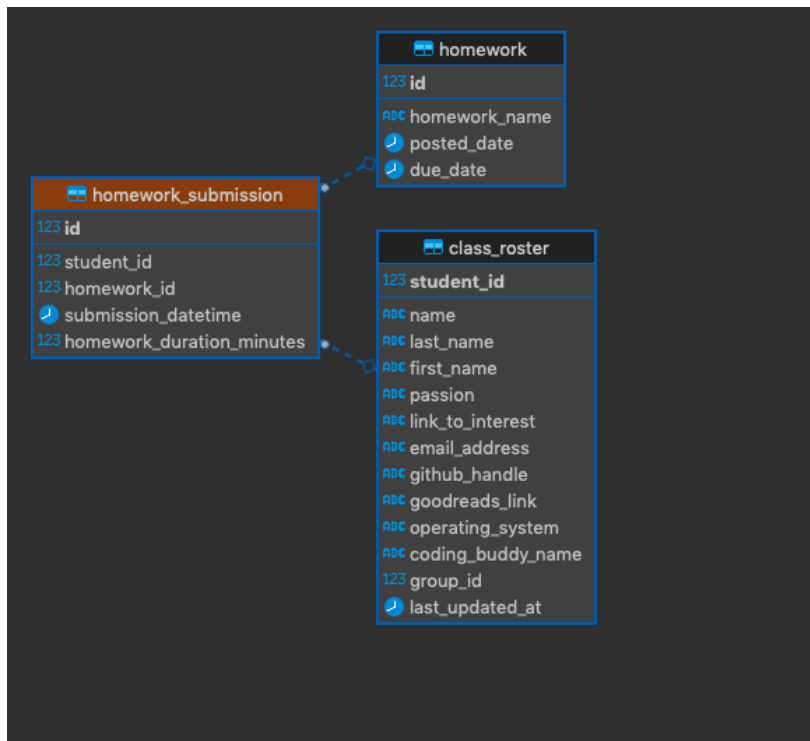
The next exercise consisted of me downloading the data (taxi dataset). Whilst downloading the database was created and the script was created using some parts of the first script from above. After some googling, it was sad that the data type "real" would be helpful in using numbers with decimals just as Python would have floats.

```
create table taxi.public.taxidata (
    "VendorID" bigint PRIMARY KEY
   ,"tpep_pickup_datetime" date
   ,"tpep_dropoff_datetime" date
   ,"passenger_count" bigint
   ,"trip_distance" real
   ,"RatecodeID" bigint
   ,"store_and_fwd_flag" varchar
   ,"PULocationID" bigint
   ,"DOLocationID" bigint
   ,"payment_type" bigint
   ,"fare_amount" bigint
   ,"extra" bigint
   ,"mta_tax" real
   ,"tip_amount" real
   ,"tolls_amount" real
   ,"improvement_surcharge" bigint
   ,"total_amount" real
);
```

Much more columns were created than in the first exercise. Both my partner and I faced an issue where some columns were not imported as perfectly as we expected.

	VendorID	tpep_pickup_datetime	tpep_dropoff_datetime	passenger_count
1	1	2018-11-29	2018-11-29	
2	2	2018-11-29	2018-11-29	
3	4	2018-11-29	2018-11-29	

Comparing Data (Exercise 6):

$59ZB = 5.9*10^{10}$

This is equal to the networth of:

2.5* Stefan Quandt (BMW)'s
3.27* Theo Albrecth (Trader Joe's)
3.35* Stefan Persson (H&M)
And roughly 25% of Elon Musk's networth.