Query documentation

1. How many transactions happened at ATG for a particular day?

```
SELECT count(transaction_id) FROM transactions
       LEFT JOIN merchant_unit USING (merchant_unit_key)
       LEFT JOIN transaction_time USING (transaction_time_key)
       WHERE merchant_id =
'11660f45-3265-4ff1-891e-cb6cac09dae2'
              AND transaction_date = '2019-07-24'
```

This query returns a number of transactions at ATG on 24-07-2019.
`merchant_id = '11660f45-3265-4ff1-891e-cb6cac09dae2'` represents ATG and this parameter can be changed to corresponding *value* if another merchant is in interest. Correspondingly *transaction_date* value can be changed to the one in interest.

2. Which category had the most transactions for a particular day?

```
SELECT category_name FROM transactions
         LEFT JOIN transaction_time USING
(transaction_time_key)
         LEFT JOIN subcategory USING (subcategory_id)
         LEFT JOIN category USING (category_id)
         WHERE transaction_date = '2019-07-24'
         GROUP BY category_name
         ORDER BY count(transaction_id) DESC
         LIMIT 1
```

This query returns a category with most transactions on 24-07-2019.
Transaction_date value can be changed to the one in interest.

3. Which hours during the day were the busiest in total?

```
SELECT auth_hour FROM transaction_time
       LEFT JOIN transactions USING (transaction_time_key)
       WHERE auth_hour is not null
       GROUP BY auth_hour
       ORDER BY count(transaction_id) DESC
       LIMIT 1
```

This query returns an hour during the day that was the busiest in total.

4. Which days of the week were the busiest in total?

```
SELECT transaction_day_of_week FROM transaction_time
       LEFT JOIN transactions USING (transaction_time_key)
       GROUP BY transaction_day_of_week
       ORDER BY count(transaction_id) DESC
       LIMIT 1
```

This query returns a day of the week that was the busiest in total.

5. Which days of the week were the busiest for a single merchant?

```
SELECT network_merchant_name, transaction_day_of_week
     FROM transaction_time
     LEFT JOIN transactions USING (transaction_time_key)
     LEFT JOIN merchant_unit USING (merchant_unit_key)
     GROUP BY network_merchant_name, transaction_day_of_week
     ORDER BY count(transaction_id) DESC
     LIMIT 1
```

This query returns a network merchant name and a day of the week that was the busiest for a single merchant.

Data warehouse documentation

Data warehouse consists of 6 tables. 3 tables contain info about transaction records:

1. *transactions* table contains all transaction records. It is connected to 3 tables using corresponding column as foreign key: *subcategory* (subcategory_id), *merchant_unit*(merchant_unit_key), *transaction_time*(transaction_time_key)
2. *transaction_time* table contains date and authorisation time info of all transaction records.
3. *merchant_unit* table contains network merchant name and merchant_id info of all merchants that made transactions.

   3 tables contain info about categories of transactions:
4. *subcategory* table contains info of all subcategories. It is connected to the table *category*(category_id).
5. *category* table contains info of all categories. It is connected to the table *sector*(sector_id).
6. *sector* table contains info of all sectors.