

# Code Challenge for Data Engineers

Maria is a coffee shop owner who wants to know more about her company in order to improve her sales.

She wants an application (web service) that will provide her the following information:

**Request 1:** She wants to know if the customers who are visiting her shop today have their birthday, because she wants to provide their coffee for free.

Endpoint: /customers/birthday

Response:

```
{
  "customers": [
    {
      "customer_id": 12345
      "customer_first_name": "Joe Doe"
    },
  ]
}
```

**Request 2:** She wants to know which are the top 10 selling products for a specific year. The year will be provided by her.

Endpoint: /products/top-selling-products/{year}

Response:

```
{
  "products": [
    {
      "product_name": "Espresso Roast",
      "total_sales": 12345
    },
  ]
}
```

**Request 3:** She wants to know which is the last order per customer in order to retarget these customers using an email campaign.

Endpoint: /customers/last-order-per-customer

Response:

```
{
  "customers": [
    {
      "customer_id": 12345,
      "customer_email": "yyyyy@zzzzz.xx",
      "last_order_date": "2023-01-01"
    },
  ]
}
```

**TODOs:**

1. Setup PostgreSQL (or MariaDB/MySQL), create the tables you need for the tasks above and then ingest the data that you will find at the attached files. SQLAlchemy is a good tool for this task.
2. The above queries should be performed using SQL queries and after you get the results, you should serve them using FastAPI (or Flask).
3. Create the endpoints that will provide the results retrieved from the database.
4. Dockerise the service or at least provide us the requirements (requirements.txt file) you needed to make the service running.
5. Create a README file that will explain to us how to run the service.
6. Push the code to the GitHub repo you are invited to.

The following practices are more than welcome, but not mandatory:

- Tests
- Docstrings
- Type Hinting
- Logging

*Good Luck!* 😊