

SQL challenge

/*

0. Create tables in a db using any rdbms like MS SQL Server or PostgreSQL and insert data into tables.

Tables structure and data:

Users

| UserID | UserName | ClientID |
|--------|----------|----------|
| 1 | Audis | 5 |
| 2 | Balius | 5 |
| 3 | Diena | 6 |
| 4 | Eva | 7 |

Orders

| OrderID | Total | UserID |
|---------|---------|--------|
| 11 | 100.00 | 1 |
| 33 | 1000.00 | 2 |
| 55 | 100.00 | 7 |
| 77 | 100.0 | 4 |

*/

/*

1. Write a SQL query that selects clients IDs with aggregated orders totals. If no client can be found for a user display 'n/a'. Output:

| ClientID | Total |
|----------|---------|
| n/a | 100.00 |
| 5 | 1100.00 |
| 6 | 0.00 |
| 7 | 100.0 |

*/

/*

2. Modify previous SQL query to return only rows with clients that have two highest aggregated totals. Output:

| ClientID | Total |
|----------|---------|
| 5 | 1100.00 |
| 7 | 100.00 |
| n/a | 100.00 |

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C# / Java challenge

Create console application or web API

Program should do several tasks:

1. Get OAuth 2.0 access token from OAuth server which will be used for later tasks.

Token source endpoint: <https://id.adform.com/sts/connect/token>

Request body (should send *x-www-form-urlencoded* or you can just use `TokenClient` from `IdentityModel` nuget package):

```
{
  "grant_type": "client_credentials",
  "client_id": "publisherstats.public@adform.com",
  "client_secret": "insert_client_secret_here",
  "scope": "https://api.adform.com/scope/eapi"
}
```

2. Use Adform Reporting API to retrieve data. Need to retrieve bid requests split by date for two previous years (Metric: "bidRequests", dimension: "date", filter: "LastTwoYears"). Construct request according documentation: <http://api.adform.com/help/references/seller-solutions/reporting/reportdata>

Aggregate retrieved data by week and provide result how many bids was each week for two previous years.

example result: [

```
{ "week": 1, "bids": 200 },
{ "week": 2, "bids": 220 },
{ "week": 3, "bids": 200 },
```

....

]

- **Required http headers:** `Content-type:application/json`

3. Use Adform Reporting API to retrieve data. Need to retrieve bid requests (Metric: "bidRequests") split by date for two previous years. Construct request according to documentation (<http://api.adform.com/help/references/seller-solutions/reporting/reportdata>). In retrieved result find data anomalies when bidrequests increased or decreased 3 or more times compared to the previous day.

example data:

```
2017-01-01 : 150,
2017-01-02 : 150,
2017-01-03 : 0,
2017-01-04 : 0,
2017-01-05 : 150,
2017-01-06 : 150,
2017-01-07 : 3000,
2017-01-08 : 150
```

example result: ["2017-01-03", "2017-01-05", "2017-01-07", "2017-01-08"]

- **Required http headers:** `Content-type:application/json`