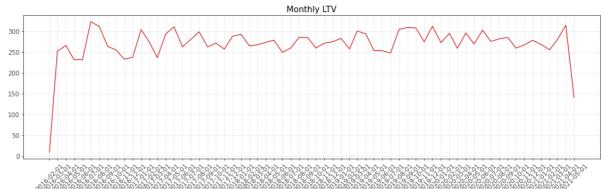# SQL Request from Yandex Practicum course project.

Implementation in Python with usage of vizualization.

LTV visualization

```
In [1]:  import pandas as pd
         %load_ext sql
         %sql postgresql://postgres:sqltest123@localhost/1
```

```
In [ ]:  %%sql result <<
         SELECT
         CAST(DATE_TRUNC('month', tsu.created_at) AS date) AS dt,
         SUM(tso.total_amt)/COUNT(DISTINCT(tso.user_id)) as LTV
         FROM tools_shop.orders AS tso
         JOIN tools_shop.users AS tsu ON tso.user_id = tsu.user_id
         GROUP BY dt
```

```
In [3]:  #displaying results for SQL request
         df = result.DataFrame()
         display(df.head(11))
```

	dt	ltv
0	2016-02-01	9.4200000000000000
1	2016-03-01	251.3796774193548387
2	2016-04-01	265.8161363636363636
3	2016-05-01	231.2950769230769231
4	2016-06-01	231.6674242424242424
5	2016-07-01	322.5788990825688073
6	2016-08-01	311.2181188118811881
7	2016-09-01	263.2275961538461538
8	2016-10-01	254.7994915254237288
9	2016-11-01	232.3373717948717949
10	2016-12-01	237.0954966887417219

```
In [4]:  import pandas as pd
         import matplotlib.pyplot as plt
         plt.figure(figsize=(20,5), dpi=70)
         plt.plot('dt', 'ltv', data=df, color='tab:red')
         plt.xticks(ticks=df['dt'], labels=df['dt'],
                    rotation=45, fontsize=12, horizontalalignment='center', alpha=.7)
         plt.yticks(fontsize=12, alpha=.7)
         plt.title("Monthly LTV", fontsize=16)
         plt.grid(axis='both', alpha=.3)
         plt.show()
```

Monthly LTV