Test report

February 1, 2021

0.1

```
[1]: %matplotlib inline
     import matplotlib.pyplot as plt
     plt.style.use('seaborn-whitegrid')
     import numpy as np
```

0.2

1000000   firstname, secondname.
        wrk.   MacBook Pro (15-inch, 2019),   ,
                .   firstName LIKE ? and secondName LIKE ? + c

   id   .   .

```
[2]: # latency 90
     x = [1, 10, 100, 1000]
     x1 = [1, 10, 1000]
     y_no = [467, 857, 9110]
     y_i1 = [10.5, 15.3, 198, 2240]
     y_i2 =  [3.27, 8.94, 132.3, 703]

     font = {'weight' : 'bold',
             'size'   : 18}

     plt.rc('font', **font)
     plt.rcParams["figure.figsize"] = (20,10)

     plt.semilogx(x1, y_no, '-', color='black', label='no index')
     plt.semilogx(x, y_i1, '-', color='red', label='index 1')
     plt.semilogx(x, y_i2, '-', color='green', label='index 2')

     plt.title('Latency 90%')
     plt.xlabel('Connections number')
     plt.ylabel('Latency, ms')
     plt.legend()
```
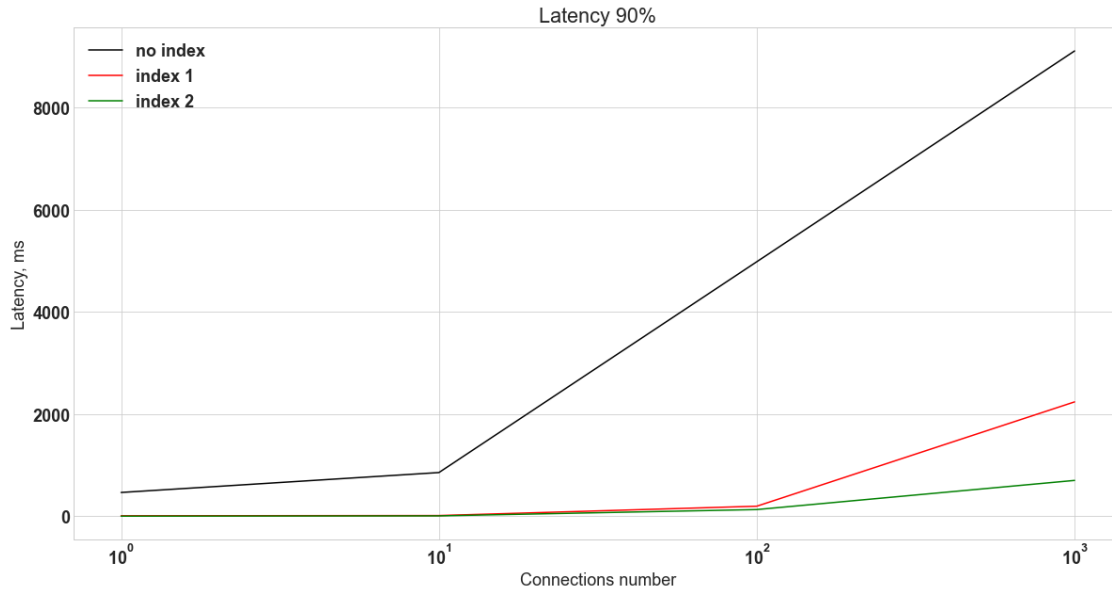
```
[2]: <matplotlib.legend.Legend at 0x124d87040>
```

Latency 90%

- 1000 : 0 requests in 5.00m, 0.00B read Socket errors: connect 0, read 3980, write 16, timeout 0
- 1000 (index 1): 110909 requests in 1.67m, 24.33MB read Socket errors: connect 0, read 1353, write 32, timeout 0

report_raw_data.txt

```
[3]:  # KB/s
      x = [1, 10, 100, 1000]
      x1 = [1, 10, 1000]

      y_no = [0.57, 3, 2.69]
      y_i1 = [41.7, 260, 276, 249]
      y_i2 =  [93.5, 398, 569, 618]

      font = {'weight' : 'bold',
              'size'   : 18}

      plt.rc('font', **font)
      plt.rcParams["figure.figsize"] = (20,10)



      plt.semilogx(x1, y_no, '-', color='black', label='no index')
      plt.semilogx(x, y_i1, '-', color='red', label='index 1')
      plt.semilogx(x, y_i2, '-', color='green', label='index 2')
```
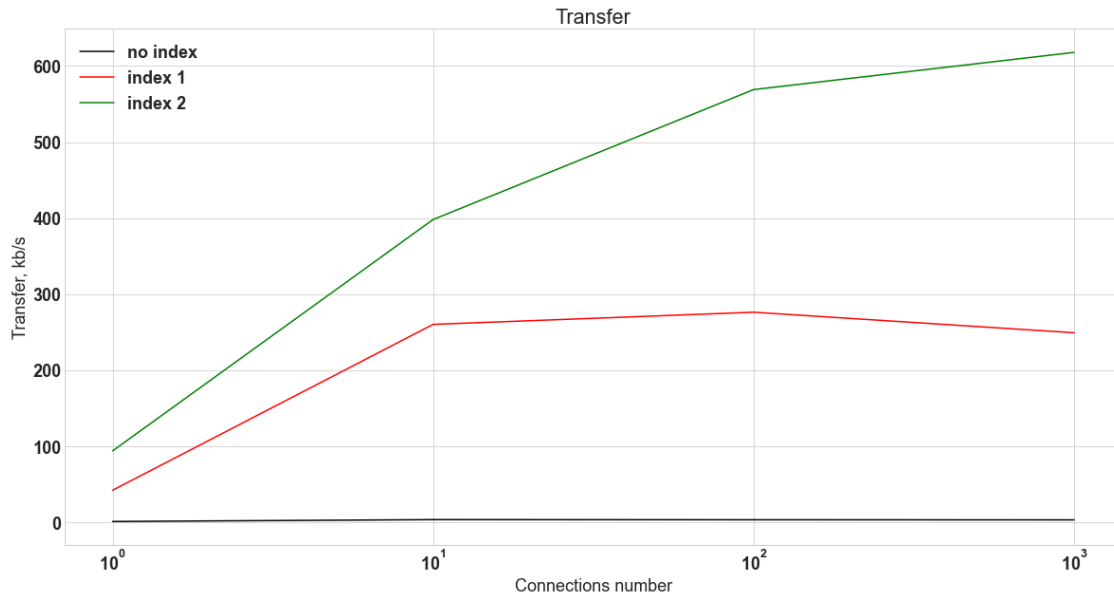
```
plt.title('Transfer')
plt.xlabel('Connections number')
plt.ylabel('Transfer, kb/s')
plt.legend()
```

[3]: <matplotlib.legend.Legend at 0x124f90a00>

index 1 -   2   :   first_name   second_name

```
create index users_first_name_index
    on users (first_name);
create index users_second_name_index
    on users (second_name);
```

index 2 -   (first_name, second_name)

```
create index users_first_name_second_name_index
    on users (first_name, second_name);
```

                                              ,   1

            (first_name, second_name)

```
{
  "query_block": {
    "select_id": 1,
    "cost_info": {
      "query_cost": "3.41"
    },
    "ordering_operation": {
      "using_filesort": true,
```

```
      "cost_info": {
        "sort_cost": "1.00"
      },
      "table": {
        "table_name": "users",
        "access_type": "range",
        "possible_keys": [
          "users_first_name_second_name_index"
        ],
        "key": "users_first_name_second_name_index",
        "used_key_parts": [
          "first_name",
          "second_name"
        ],
        "key_length": "104",
        "rows_examined_per_scan": 1,
        "rows_produced_per_join": 1,
        "filtered": "100.00",
        "index_condition": "((`db`.`users`.`first_name` like 'Bobby') and (`db`.`users`.`secon
        "cost_info": {
          "read_cost": "2.21",
          "eval_cost": "0.20",
          "prefix_cost": "2.41",
          "data_read_per_join": "1K"
        },
        "used_columns": [
          "id",
          "username",
          "first_name",
          "second_name"
        ]
      }
    }
  }
}
```

[ ]: