Exerc-Aula05 -Elastic-Agregações

Realizar os exercícios no índice bolsa

1. Calcular a média do campo volume

* Resposta:

Irá mostrar os dez primeiros documentos, as agregações estálá no filanl.

Para mostrar apenas os valores das agregações, sem exibir os registros,podemos colocar o siza = 0

```
GET bolsa/_search
{
   "aggs": {
      "media": {
         "avg": {
            "field": "volume"
         }
      }
   }
}
```

```
 1  GET bolsa/_search          ▷ ⚲ ▯        1 ▾ {
 2 ▾ {                                       2     "took" : 11,
 3 ▾   "aggs": {                             3     "timed_out" : false,
 4 ▾     "media": {                          4 ▾   "_shards" : {
 5 ▾       "avg": {                          5       "total" : 1,
 6           "field": "volume"               6       "successful" : 1,
 7 ▴       }                                 7       "skipped" : 0,
 8 ▴     }                                   8       "failed" : 0
 9 ▴   }                                     9 ▴   },
10 ▴ }                                      10 ▾   "hits" : {
11                                          11 ▾     "total" : {
12                                          12         "value" : 1111,
13                                          13         "relation" : "eq"
14                                          14 ▴     },
15                                          15     "max_score" : 1.0,
16                                          16 ▾     "hits" : [
17                                          17 ▾       {
18                                          18           "_index" : "bolsa",
19                                          19           "_type" : "_doc",
20                                          20           "_id" : "QBmpxX8BOKuL5gTUyP-S",
21                                          21           "_score" : 1.0,
22                                          22 ▾         "_source" : {
23                                          23             "volume" : 48874731,
24                                          24             "high" : 121.85,
25                                          25             "@timestamp" : "2019-04-17T00:00
26                                                           :00.000-03:00",
27                                          26             "low" : 120.1,
28                                          27             "close" : 121.77,
29                                          28             "open" : 120.94,
30                                          29             "timestamp" : "2019-04-17"
31                                          30 ▴         }
```

```
31 ▲          },
32 ▼          {
33              "_index" : "bolsa",
34              "_type" : "_doc",
35              "_id" : "QRmpxX8BOKuL5gTUyP-S",
36              "_score" : 1.0,
37 ▼            "_source" : {
38                "volume" : 83159600,
39                "high" : 120.98,
40                "@timestamp" : "2019-04-12T00:00
                   :00.000-03:00",
41                "low" : 118.58,
42                "close" : 120.95,
43                "open" : 119.81,
44                "timestamp" : "2019-04-12"
45 ▲            }
46 ▲          },
47 ▼          {
48              "_index" : "bolsa",
49              "_type" : "_doc",
50              "_id" : "QhmpxX8BOKuL5gTUyP-S",
51              "_score" : 1.0,
52 ▼            "_source" : {
53                "volume" : 99731237,
54                "high" : 120.43,
55                "@timestamp" : "2019-04-05T00:00
                   :00.000-03:00",
56                "low" : 118.1,
57                "close" : 119.89,
```

```
168 ▲    },
169 ▼    "aggregations" : {
170 ▼      "media" : {
171          "value" : 2.2785241222772276E8
172 ▲      }
173 ▲    }
174 ▲ }
175
```

xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

```
GET bolsa/_search
{
    "size":0,
    "aggs": {
        "media": {
            "avg": {
                "field": "volume"
```

```
        }

      }

    }

}
```

```
 1   GET bolsa/_search          ▷ ⚙ ▌      1 ▾ {
 2 ▾ {                                     2      "took" : 1,
 3     "size":0,                           3      "timed_out" : false,
 4 ▾   "aggs": {                           4 ▾    "_shards" : {
 5 ▾     "media": {                        5        "total" : 1,
 6 ▾       "avg": {                        6        "successful" : 1,
 7           "field": "volume"             7        "skipped" : 0,
 8 ▴       }                               8        "failed" : 0
 9 ▴     }                                 9 ▴    },
10 ▴   }                                  10 ▾    "hits" : {
11 ▴ }                                    11 ▾      "total" : {
12                                        12          "value" : 1111,
13                                        13          "relation" : "eq"
14                                        14 ▴      },
15                                        15        "max_score" : null,
16                                    ‖   16        "hits" : [ ]
17                                        17 ▴    },
18                                        18 ▾    "aggregations" : {
19                                        19 ▾      "media" : {
20                                        20          "value" : 2.2785241222772276E8
21                                        21 ▴      }
22                                        22 ▴    }
23                                        23 ▴ }
24                                        24
```

2. Calcular a estatística do campo close

```
GET bolsa/_search
{
   "size":0,
   "aggs": {
      "estatística ": {
         "avg": {
            "field": "close"
         }
      }
   }
}
```
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```
"estatistica" : {
      "count" : 1111,
      "min" : 15.28,
      "max" : 178.13,
      "avg" : 49.94570477047705,
      "sum" : 55489.678
```

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```
1   GET bolsa/_search              ▷ ⚲ ▮        1 ▾ {
2 ▾ {                                           2     "took" : 2,
3     "size":0,                                 3     "timed_out" : false,
4 ▾   "aggs": {                                 4 ▾   "_shards" : {
5 ▾     "estatistica": {                        5       "total" : 1,
6 ▾       "stats": {                            6       "successful" : 1,
7           "field": "close"                    7       "skipped" : 0,
8 ▲       }                                     8       "failed" : 0
9 ▲     }                                       9 ▲   },
10 ▲   }                                       10 ▾   "hits" : {
11 ▲ }                                         11 ▾     "total" : {
12                                             12         "value" : 1111,
13                                             13         "relation" : "eq"
14                                             14 ▲     },
15                                             15       "max_score" : null,
16                                   ‖         16       "hits" : [ ]
17                                             17 ▲   },
18                                             18 ▾   "aggregations" : {
19                                             19 ▾     "estatistica" : {
20                                             20         "count" : 1111,
21                                             21         "min" : 15.28,
22                                             22         "max" : 178.13,
23                                             23         "avg" : 49.94570477047705,
24                                             24         "sum" : 55489.678
25                                             25 ▲     }
26                                             26 ▲   }
27                                             27 ▲ }
28                                             28
29
```

3. Visualizar os documentos do dia 2019-04-01 até agora. (hits = 3)
** Resposta

```
GET bolsa/_search
{
   "query":{
     "range":{

        "@timestamp": {
          "gte":"2019-04-01",
          "lte":"now"
        }
     }
   }
}
```

```
GET bolsa/_search
{
    "query":{
        "range":{

            "@timestamp": {
                "gte":"2019-04-01",
                "lte":"now"
            }

        }
    }

}
```

```
{
    "took" : 2,
    "timed_out" : false,
    "_shards" : {
        "total" : 1,
        "successful" : 1,
        "skipped" : 0,
        "failed" : 0
    },
    "hits" : {
        "total" : {
            "value" : 3,
            "relation" : "eq"
        },
        "max_score" : 1.0,
        "hits" : [
            {
                "_index" : "bolsa",
                "_type" : "_doc",
                "_id" : "QBmpxX8BOKuL5gTUyP-S",
                "_score" : 1.0,
                "_source" : {
                    "volume" : 48874731,
                    "high" : 121.85,
                    "@timestamp" : "2019-04-17T00:00:00
                        .000-03:00",
                    "low" : 120.1,
                    "close" : 121.77,
                    "open" : 120.94,
                    "timestamp" : "2019-04-17"
                }
```

```
31 ▲        },
32 ▼        {
33              "_index" : "bolsa",
34              "_type" : "_doc",
35              "_id" : "QRmpxX8BOKuL5gTUyP-S",
36              "_score" : 1.0,
37 ▼            "_source" : {
38                "volume" : 83159600,
39                "high" : 120.98,
40                "@timestamp" : "2019-04-12T00:00:00
                      .000-03:00",
41                "low" : 118.58,
42                "close" : 120.95,
43                "open" : 119.81,
44                "timestamp" : "2019-04-12"
45 ▲            }
46 ▲        },
47 ▼        {
48              "_index" : "bolsa",
49              "_type" : "_doc",
50              "_id" : "QhmpxX8BOKuL5gTUyP-S",
51              "_score" : 1.0,
52 ▼            "_source" : {
53                "volume" : 99731237,
54                "high" : 120.43,
55                "@timestamp" : "2019-04-05T00:00:00
                      .000-03:00",
56                "low" : 118.1,
57                "close" : 119.89,
58                "open" : 118.95,
59                "timestamp" : "2019-04-05"
60 ▲            }
61 ▲        }
62 ▲      ]
63 ▲    }
64 ▲ }
65
```

4. Calcular a estatística do campo open do período do dia 2019-04-01 até agora

** Resposta :

```
GET bolsa/_search
{
  "query":{
    "range":{
              "@timestamp": {
        "gte":"2019-04-01",
        "lte":"now"
      }
    }
  },
```

```
        "aggs": {
            "Estatistica": {
                "stats": {
                    "field": "open"
                }
            }
        }
}
```

```
1    GET bolsa/_search              ▷ ⚙ ▮       1 ▾ {
2 ▾ {                                           2      "took" : 1,
3 ▾    "query":{                                3      "timed_out" : false,
4 ▾       "range":{                             4 ▾    "_shards" : {
5 ▾          |  |  | | "@timestamp": {          5        "total" : 1,
6            |  |  |    "gte":"2019-04-01",     6        "successful" : 1,
7            |  |  |    "lte":"now"             7        "skipped" : 0,
8 ▴         |  |  }                             8        "failed" : 0
9 ▴      |  }                                   9 ▴    },
10 ▴    },                                      10 ▾   "hits" : {
11 ▾    "aggs": {                               11 ▾     "total" : {
12 ▾       "Estatistica": {                     12          "value" : 3,
13 ▾          "stats": {                        13          "relation" : "eq"
14            |  "field": "open"                14 ▴     },
15 ▴         |  }                               15       "max_score" : 1.0,
16 ▴      |  }                                  16 ▾     "hits" : [
17 ▴    }                                       17 ▾       {
18 ▴ }                                          18           "_index" : "bolsa",
19                                              19           "_type" : "_doc",
20                                              20           "_id" : "QBmpxX8BOKuL5gTUyP-S",
21                                              21           "_score" : 1.0,
22                                              22 ▾         "_source" : {
23                                              23             "volume" : 48874731,
24                                              24             "high" : 121.85,
25                                              25             "@timestamp" : "2019-04-17T00:00:00
26                                                              .000-03:00",
27                                              26             "low" : 120.1,
28                                              27             "close" : 121.77,
29                                              28             "open" : 120.94,
30                                              29             "timestamp" : "2019-04-17"
31                                              30 ▴         }
```

```
30          }
31      },
32      {
33        "_index" : "bolsa",
34        "_type" : "_doc",
35        "_id" : "QRmpxX8BOKuL5gTUyP-S",
36        "_score" : 1.0,
37        "_source" : {
38          "volume" : 83159600,
39          "high" : 120.98,
40          "@timestamp" : "2019-04-12T00:00:00
               .000-03:00",
41          "low" : 118.58,
42          "close" : 120.95,
43          "open" : 119.81,
44          "timestamp" : "2019-04-12"
45        }
46      },
47      {
48        "_index" : "bolsa",
49        "_type" : "_doc",
50        "_id" : "QhmpxX8BOKuL5gTUyP-S",
51        "_score" : 1.0,
52        "_source" : {
53          "volume" : 99731237,
54          "high" : 120.43,
55          "@timestamp" : "2019-04-05T00:00:00
               .000-03:00",
56          "low" : 118.1,
57          "close" : 119.89,
58          "open" : 118.95,
59          "timestamp" : "2019-04-05"
60        }
61      }
62    ]
63  },
64  "aggregations" : {
65    "Estatistica" : {
66      "count" : 3,
67      "min" : 118.95,
68      "max" : 120.94,
69      "avg" : 119.89999999999999,
70      "sum" : 359.7
71    }
72  }
73 }
74
```

5. Calcular a mediana do campo open

GET bolsa/_search
{

```json
    "size":0,
    "aggs": {
        "mediana": {
            "percentiles": {
                "field": "open",
                "percents": [
                    1,
                    5,
                    25,
                    50,
                    75,
                    95,
                    99
                ]
            }
        }
    }
}
```

```
1   GET bolsa/_search                    ▷ ⚙ ▯        1 ▾ {
2 ▾ {                                                2       "took" : 54,
3      "size":0,                                     3       "timed_out" : false,
4 ▾    "aggs": {                                     4 ▾     "_shards" : {
5 ▾      "mediana": {                                5         "total" : 1,
6 ▾        "percentiles": {                          6         "successful" : 1,
7            "field": "open",                        7         "skipped" : 0,
8 ▾          "percents": [                           8         "failed" : 0
9              1,                                    9 ▴     },
10             5,                                    10 ▾    "hits" : {
11             25,                                   11 ▾      "total" : {
12             50,                                   12           "value" : 1111,
13             75,                                   13           "relation" : "eq"
14             95,                                   14 ▴      },
15             99                                    15       "max_score" : null,
16 ▴         ]                          ‖            16       "hits" : [ ]
17 ▴       }                                         17 ▴    },
18 ▴     }                                           18 ▾    "aggregations" : {
19 ▴   }                                             19 ▾      "mediana" : {
20 ▴ }                                               20 ▾        "values" : {
21                                                   21             "1.0" : 19.0486,
22                                                   22             "5.0" : 23.7915,
23                                                   23             "25.0" : 27.05438454545454,
24                                                   24             "50.0" : 35.626000000000005,
25                                                   25             "75.0" : 65.10520833333334,
26                                                   26             "95.0" : 109.11183333333334,
27  |                                                27             "99.0" : 151.07500000000005
28                                                   28 ▴         }
29                                                   29 ▴       }
30                                                   30 ▴     }
31                                                   31 ▴ }
```

6. Contar a quantidade de documentos agrupados por ano

GET bolsa/_search

```json
{
    "size":0,
    "aggs": {
        "docs_anos": {
            "date_histogram": {
                "field": "@timestamp",
                "calendar_interval": "year"
            }
        }
    }
}
```

```
1  GET bolsa/_search                    ▷ ⚙ ‖
2 ▾ {
3      "size":0,
4 ▾    "aggs": {
5 ▾       "docs_anos": {
6 ▾          "date_histogram": {
7               "field": "@timestamp",
8               "calendar_interval":
                    "year"
9 ▴          }
10 ▴        }
11 ▴    }
12 ▴ }
13
14
15                                       ‖
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
```

```
1 ▾ {
2      "took" : 63,
3      "timed_out" : false,
4 ▾    "_shards" : {
5        "total" : 1,
6        "successful" : 1,
7        "skipped" : 0,
8        "failed" : 0
9 ▴    },
10 ▾   "hits" : {
11 ▾     "total" : {
12          "value" : 1111,
13          "relation" : "eq"
14 ▴     },
15        "max_score" : null,
16        "hits" : [ ]
17 ▴   },
18 ▾   "aggregations" : {
19 ▾     "docs_anos" : {
20 ▾       "buckets" : [
21 ▾         {
22            "key_as_string" : "1998-01-01T00
                  :00:00.000Z",
23            "key" : 883612800000,
24            "doc_count" : 52
25 ▴         },
26 ▾         {
27            "key_as_string" : "1999-01-01T00
                  :00:00.000Z",
28            "key" : 915148800000,
29            "doc_count" : 52
```

```
30          },
31          {
32              "key_as_string" : "2000-01-01T00
                    :00:00.000Z",
33              "key" : 946684800000,
34              "doc_count" : 52
35          },
36          {
37              "key_as_string" : "2001-01-01T00
                    :00:00.000Z",
38              "key" : 978307200000,
39              "doc_count" : 52
40          },
41          {
42              "key_as_string" : "2002-01-01T00
                    :00:00.000Z",
43              "key" : 1009843200000,
44              "doc_count" : 52
45          },
46          {
47              "key_as_string" : "2003-01-01T00
                    :00:00.000Z",
48              "key" : 1041379200000,
49              "doc_count" : 52
50          },
51          {
52              "key_as_string" : "2004-01-01T00
                    :00:00.000Z",
53              "key" : 1072915200000,
54              "doc_count" : 53
55          },
```

```
56        {
57          "key_as_string" : "2005-01-01T00
             :00:00.000Z",
58          "key" : 1104537600000,
59          "doc_count" : 52
60        },
61        {
62          "key_as_string" : "2006-01-01T00
             :00:00.000Z",
63          "key" : 1136073600000,
64          "doc_count" : 52
65        },
66        {
67          "key_as_string" : "2007-01-01T00
             :00:00.000Z",
68          "key" : 1167609600000,
69          "doc_count" : 52
70        },
71        {
72          "key_as_string" : "2008-01-01T00
             :00:00.000Z",
73          "key" : 1199145600000,
74          "doc_count" : 52
75        },
76        {
77          "key_as_string" : "2009-01-01T00
             :00:00.000Z",
78          "key" : 1230768000000,
79          "doc_count" : 53
80        },
81        {
```

7. Contar a quantidade de documentos de 2 anos atrás até hoje

** Resposta

```
GET bolsa/_search
{
    "size":0,
    "aggs": {
        "qtd_anos": {
            "date_range": {
                "field": "@timestamp",
                "ranges": [
                    { "from": "now-2y",
                        "to":"now"
                    }
                ]
            }
        }
    }
}
```

}

```
1   GET bolsa/_search                    ▷ ⚒ ▮      1 ▾ {
2 ▾ {                                               2      "took" : 6,
3     "size":0,                                     3      "timed_out" : false,
4 ▾   "aggs": {                                     4 ▾    "_shards" : {
5 ▾     "qtd_anos": {                               5        "total" : 1,
6 ▾       "date_range": {                           6        "successful" : 1,
7           "field": "@timestamp",                  7        "skipped" : 0,
8 ▾         "ranges": [                             8        "failed" : 0
9 ▾           { "from": "now-2y",                   9 ▴    },
10              "to":"now"                          10 ▾   "hits" : {
11 ▴          }                                     11 ▾     "total" : {
12 ▴        ]                                       12        "value" : 1111,
13 ▴      }                                         13        "relation" : "eq"
14 ▴    }                                           14 ▴    },
15 ▴  }                                             15      "max_score" : null,
16 ▴ }                                        ‖     16      "hits" : [ ]
17                                                  17 ▴  },
18                                                  18 ▾   "aggregations" : {
19                                                  19 ▾     "qtd_anos" : {
20                                                  20 ▾       "buckets" : [
21                                                  21 ▾         {
22                                                  22            "key" : "2020-03-28T23:02:00.164Z
23                                                                 -2022-03-28T23:02:00.164Z",
24                                                  23            "from" : 1.585436520164E12,
25                                                  24            "from_as_string" : "2020-03-28T23
26                                                                 :02:00.164Z",
27                                                  25            "to" : 1.648508520164E12,
28                                                  26            "to_as_string" : "2022-03-28T23:02
29                                                                 :00.164Z",
30                                                  27            "doc_count" : 0
31                                                  28 ▴        }
                                                    29 ▴         ]
                                                    30 ▴       }
                                                    31 ▴     }
                                                    32 ▴ }
                                                    33
```

8. Clicar no botão de Enviar Tarefa, e enviar o texto: ok