Iniciando o Elasticsearch em Docker

Docker Desktop Windows

```
PS E:\projetos\docker-elasticsearch\elastic> wsl -l -v
  NAME                   STATE           VERSION
* docker-desktop-data    Running         2
  docker-desktop         Running         2
  Ubuntu-20.04           Running         2
```

```
PS E:\projetos\docker-elasticsearch\elastic> wsl -d docker-desktop
LAPTOP-V176DRSL:/tmp/docker-desktop-root/mnt/host/e/projetos/docker-elasticsearch/elastic# sysctl -w vm.max_map_count=262144
vm.max_map_count = 262144
LAPTOP-V176DRSL:/tmp/docker-desktop-root/mnt/host/e/projetos/docker-elasticsearch/elastic#
```

Docker Wsl2 Linux

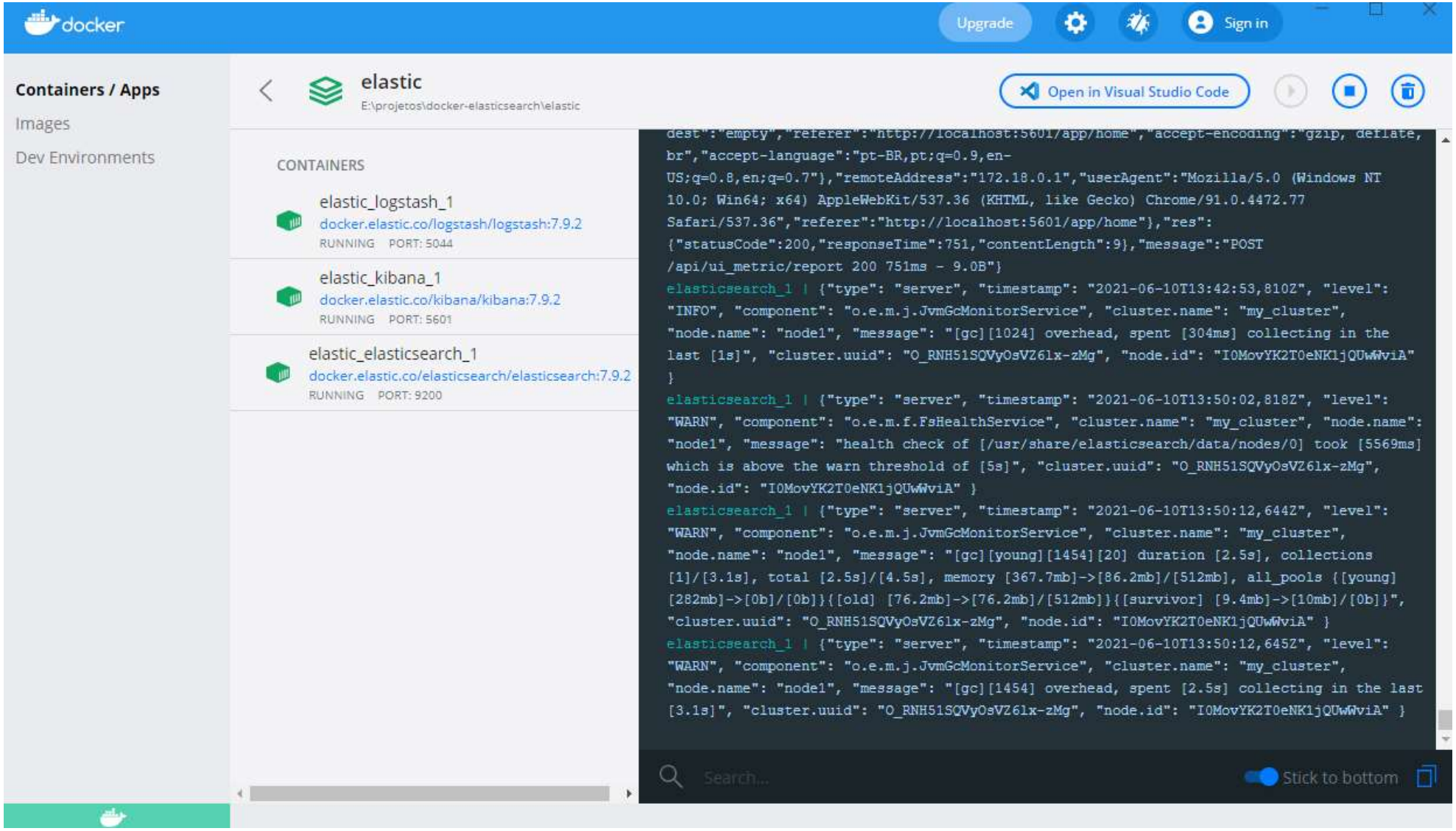
```
feliciani@LAPTOP-V176DRSL:~$ sudo sysctl -w vm.max_map_count=262144
[sudo] password for feliciani:
vm.max_map_count = 262144
```

Docker Desktop Windows

```
PS E:\projetos\docker-elasticsearch\elastic> docker-compose up -d
Docker Compose is now in the Docker CLI, try `docker compose up`

Starting elastic_elasticsearch_1 ... done
Starting elastic_kibana_1        ... done
Starting elastic_logstash_1      ... done
```

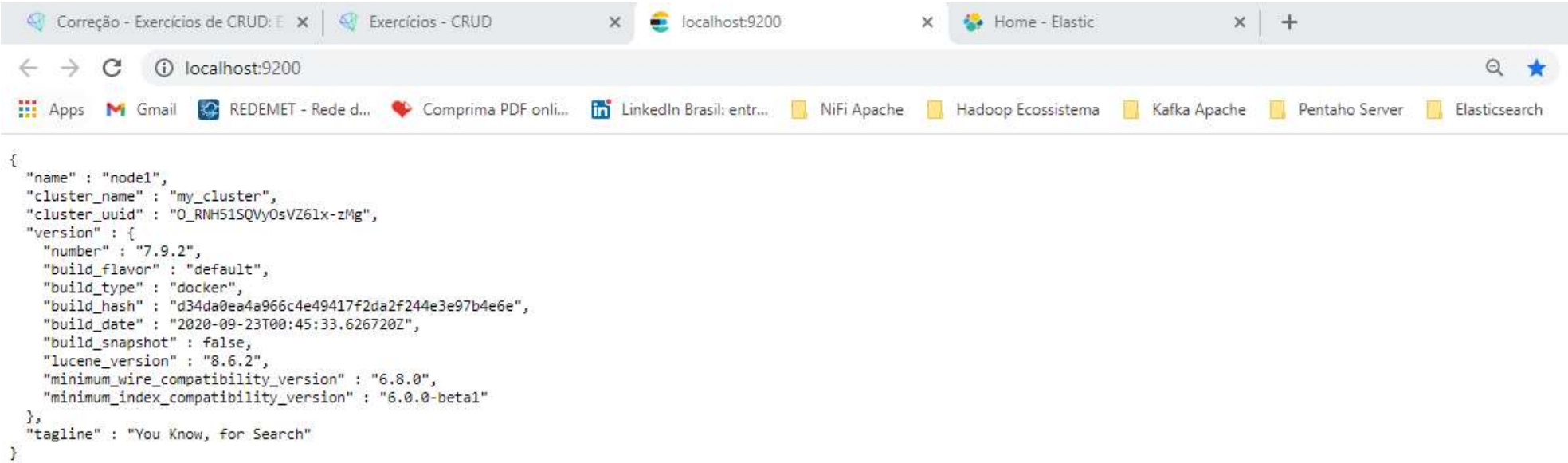
```
PS E:\projetos\docker-elasticsearch\elastic> docker ps
CONTAINER ID   IMAGE                                                    COMMAND                  CREATED        STATUS          PORTS
                                                                   NAMES
d3d012693acc   docker.elastic.co/logstash/logstash:7.9.2                 "/usr/local/bin/dock…"   17 hours ago   Up 33 minutes   0.0.0.0:5044->5044/tcp,
 :::5044->5044/tcp, 0.0.0.0:9600->9600/tcp, :::9600->9600/tcp      elastic_logstash_1
ca700688aa0d   docker.elastic.co/kibana/kibana:7.9.2                    "/usr/local/bin/dumb…"   17 hours ago   Up 33 minutes   0.0.0.0:5601->5601/tcp,
 :::5601->5601/tcp                                                 elastic_kibana_1
37a2fb5958f4   docker.elastic.co/elasticsearch/elasticsearch:7.9.2   "/tini -- /usr/local…"   17 hours ago   Up 34 minutes   0.0.0.0:9200->9200/tcp,
 :::9200->9200/tcp, 9300/tcp                                       elastic_elasticsearch_1
```

Docker


docker
Upgrade
Sign in
Containers / Apps
Images
Dev Environments
elastic
E:\projetos\docker-elasticsearch\elastic
Open in Visual Studio Code
CONTAINERS
elastic_logstash_1
docker.elastic.co/logstash/logstash:7.9.2
RUNNING PORT: 5044
elastic_kibana_1
docker.elastic.co/kibana/kibana:7.9.2
RUNNING PORT: 5601
elastic_elasticsearch_1
docker.elastic.co/elasticsearch/elasticsearch:7.9.2
RUNNING PORT: 9200
br","accept-language":"pt-BR,pt;q=0.9,en-
US;q=0.8,en;q=0.7"},"remoteAddress":"172.18.0.1","userAgent":"Mozilla/5.0 (Windows NT
10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/91.0.4472.77
Safari/537.36","referer":"http://localhost:5601/app/home"},"res":
{"statusCode":200,"responseTime":751,"contentLength":9},"message":"POST
/api/ui_metric/report 200 751ms - 9.0B"}
elasticsearch_1 | {"type": "server", "timestamp": "2021-06-10T13:42:53,810Z", "level":
"INFO", "component": "o.e.m.j.JvmGcMonitorService", "cluster.name": "my_cluster",
"node.name": "node1", "message": "[gc][1024] overhead, spent [304ms] collecting in the
last [1s]", "cluster.uuid": "O_RNH51SQVyOsVZ6lx-zMg", "node.id": "I0MovYK2T0eNK1jQUwWviA"
}
elasticsearch_1 | {"type": "server", "timestamp": "2021-06-10T13:50:02,818Z", "level":
"WARN", "component": "o.e.m.f.FsHealthService", "cluster.name": "my_cluster", "node.name":
"node1", "message": "health check of [/usr/share/elasticsearch/data/nodes/0] took [5569ms]
which is above the warn threshold of [5s]", "cluster.uuid": "O_RNH51SQVyOsVZ6lx-zMg",
"node.id": "I0MovYK2T0eNK1jQUwWviA" }
elasticsearch_1 | {"type": "server", "timestamp": "2021-06-10T13:50:12,644Z", "level":
"WARN", "component": "o.e.m.j.JvmGcMonitorService", "cluster.name": "my_cluster",
"node.name": "node1", "message": "[gc][young][1454][20] duration [2.5s], collections
[1]/[3.1s], total [2.5s]/[4.5s], memory [367.7mb]->[86.2mb]/[512mb], all_pools {[young]
[282mb]->[0b]/[0b]}{[old] [76.2mb]->[76.2mb]/[512mb]}{[survivor] [9.4mb]->[10mb]/[0b]}",
"cluster.uuid": "O_RNH51SQVyOsVZ6lx-zMg", "node.id": "I0MovYK2T0eNK1jQUwWviA" }
elasticsearch_1 | {"type": "server", "timestamp": "2021-06-10T13:50:12,645Z", "level":
"WARN", "component": "o.e.m.j.JvmGcMonitorService", "cluster.name": "my_cluster",
"node.name": "node1", "message": "[gc][1454] overhead, spent [2.5s] collecting in the last
[3.1s]", "cluster.uuid": "O_RNH51SQVyOsVZ6lx-zMg", "node.id": "I0MovYK2T0eNK1jQUwWviA" }
Search...
Stick to bottom

Acessado o Elasticsearch

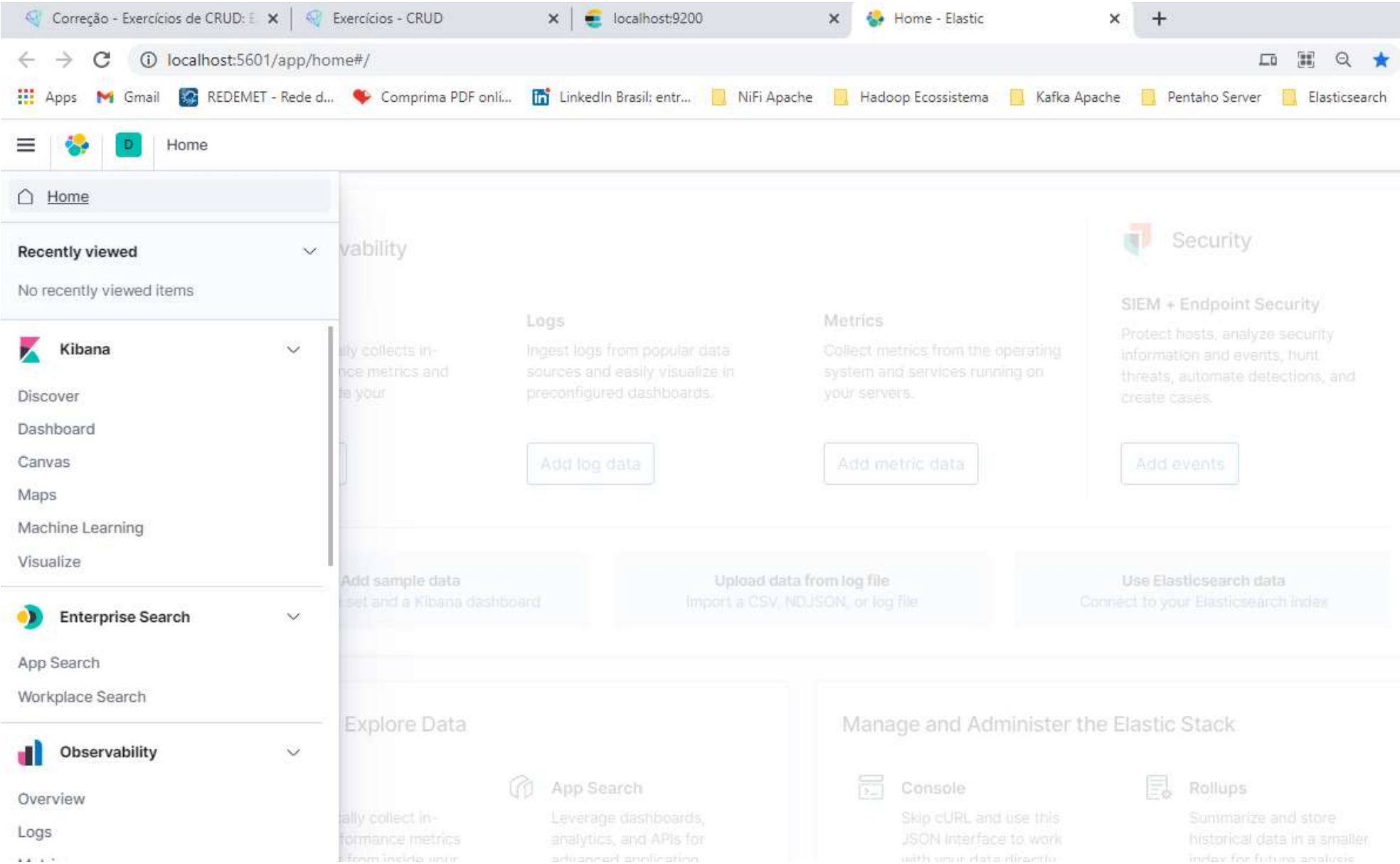
http://localhost:9200




```
{
  "name" : "node1",
  "cluster_name" : "my_cluster",
  "cluster_uuid" : "O_RNH51SQVyOsVZ61x-zMg",
  "version" : {
    "number" : "7.9.2",
    "build_flavor" : "default",
    "build_type" : "docker",
    "build_hash" : "d34da0ea4a966c4e49417f2da2f244e3e97b4e6e",
    "build_date" : "2020-09-23T00:45:33.626720Z",
    "build_snapshot" : false,
    "lucene_version" : "8.6.2",
    "minimum_wire_compatibility_version" : "6.8.0",
    "minimum_index_compatibility_version" : "6.0.0-beta1"
  },
  "tagline" : "You Know, for Search"
}
```

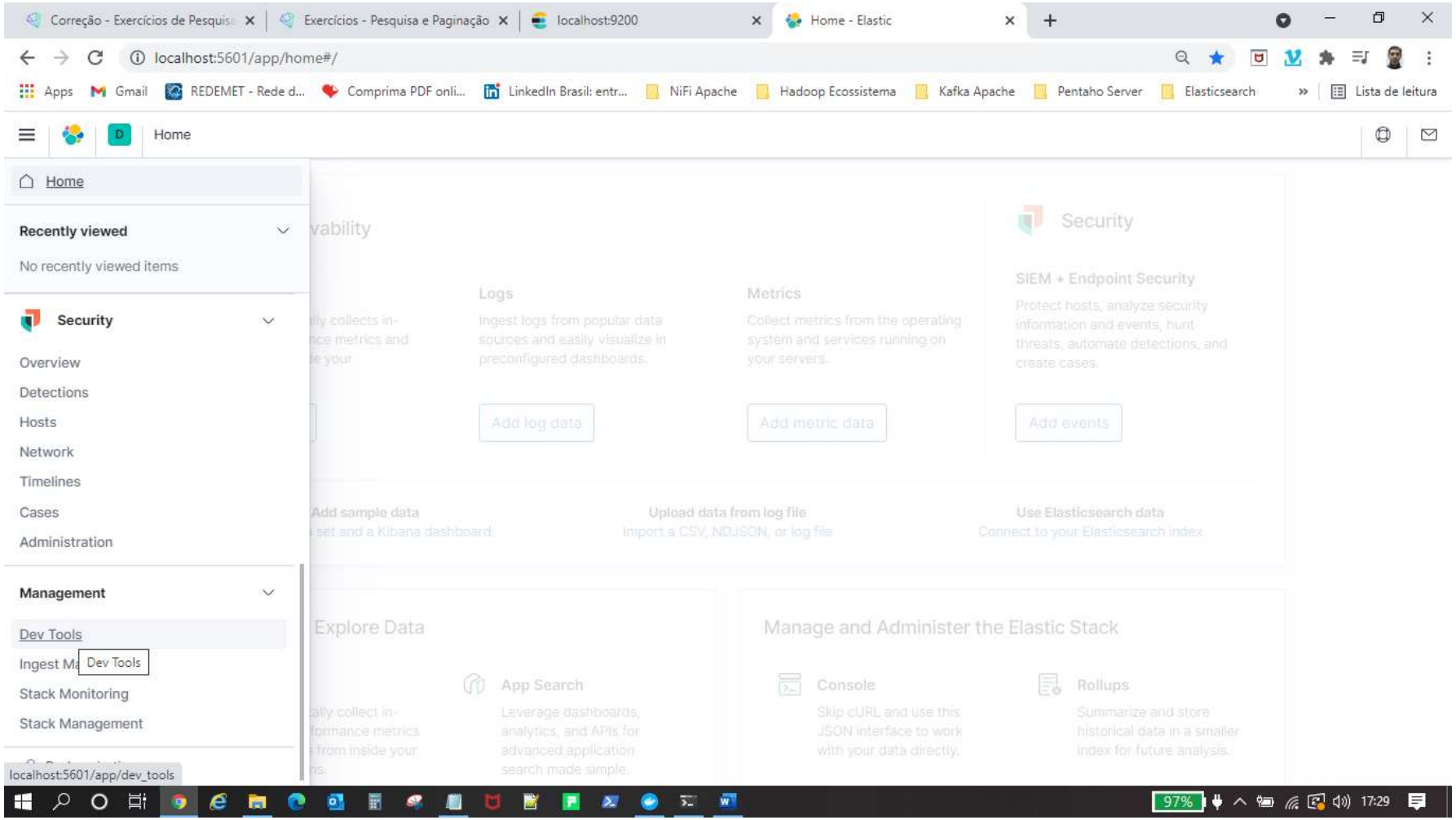
Acessando o KIBANA

http://localhost:5601



Exercitando Consulta por Intervalo

Acessar o MENU -> Dev Tools



1. Verificar se existe o índice populacao

Correção - Exercícios de Consult | Exercícios - Consultas por Interva | localhost:9200 | Dev Tools - Elastic

localhost:5601/app/dev_tools#/console

Apps | Gmail | REDEMET - Rede d... | Comprima PDF onli... | LinkedIn Brasil: entr... | NiFi Apache | Hadoop Ecossistema | Kafka Apache | Pentaho Server | Elasticsearch | Lista de leitura

Dev Tools

Console | Search Profiler | Grok Debugger | Painless Lab BETA

History | Settings | Help

Click to send request

200 - OK | 325 ms

```
HEAD populacao


#----------------------------------------#----------------------------


GET produto/_search
{
  "query": {
    "match": {
      "descricao": {
        "query": "windows linux usb",
        "operator": "or",
        "minimum_should_match": "50%"
      }
    }
  }
}


GET produto/_search
{
  "query": {
    "match": {
      "descricao": {
        "query": "windows linux usb",
        "operator": "or",
        "minimum_should_match": 2
      }
    }
  }
}
```

```
200 - OK
```

100% 14:23

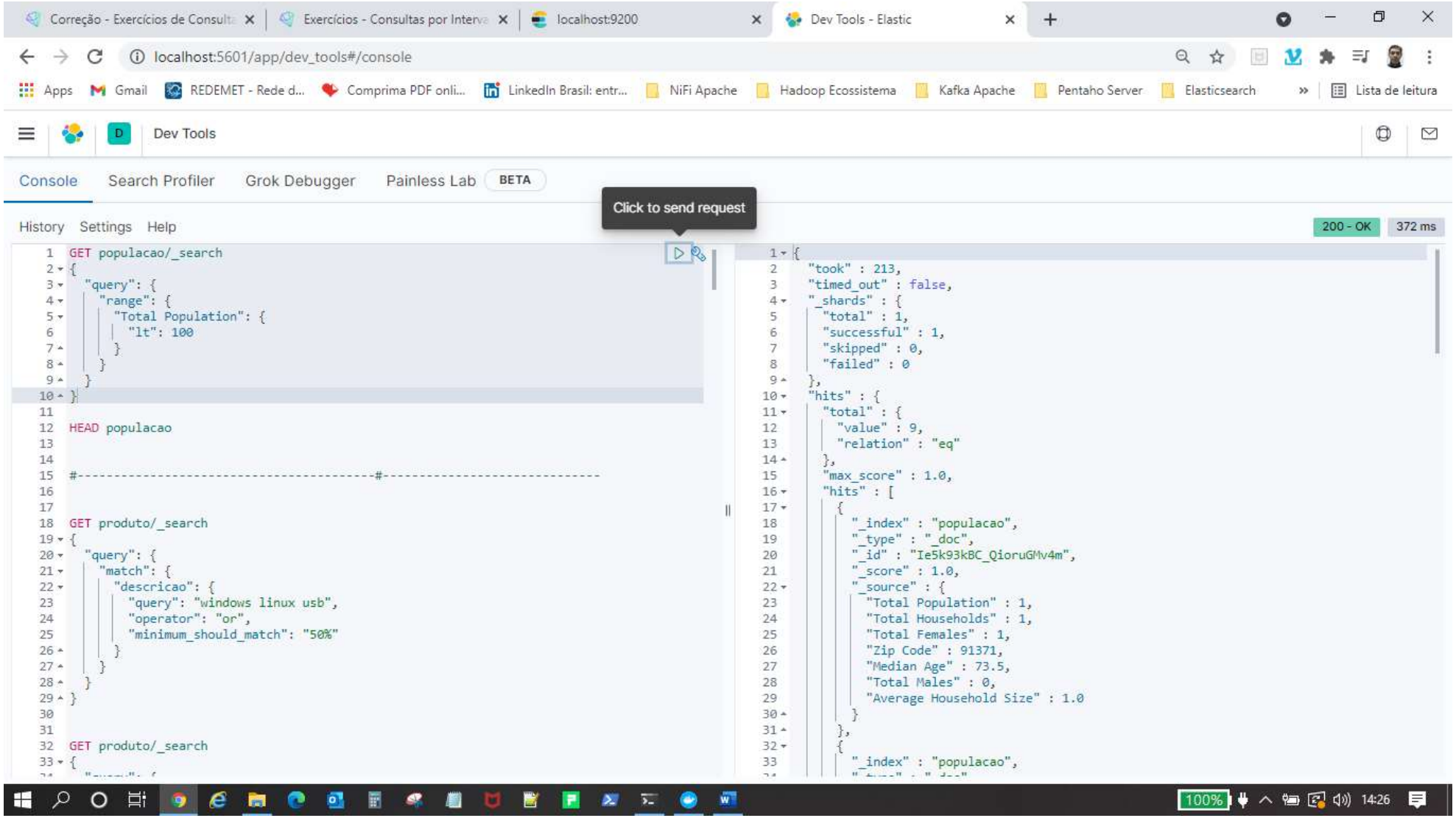
2. Executar as consultas no índice populacao

a) Mostrar os documentos com o atributo "Total Population" menor que 100

Está mostrando na ordem em que os documentos foram indexados

GET populacao/_search

{"query":{"range":{"Total Population":{"lt":100}}}}



b) Mostrar os documentos com o atributo "Median Age" maior que 70

GET populacao/_search

{"query":{"range":{"Median Age":{"gt":70}}}}

```
GET populacao/_search
{
  "query": {
    "range": {
      "Median Age": {
        "gt": 70
      }
    }
  }
}

GET populacao/_search
{
  "query": {
    "range": {
      "Total Population": {
        "lt": 100
      }
    }
  }
}

HEAD populacao


#-----------------------------------------#-----------------------------


GET produto/_search
{
  "query": {
    "match": {
      "descricao": {
```

```
  "value" : 2,
  "relation" : "eq"
},
"max_score" : 1.0,
"hits" : [
  {
    "_index" : "populacao",
    "_type" : "_doc",
    "_id" : "Ie5k93kBC_QioruGMv4m",
    "_score" : 1.0,
    "_source" : {
      "Total Population" : 1,
      "Total Households" : 1,
      "Total Females" : 1,
      "Zip Code" : 91371,
      "Median Age" : 73.5,
      "Total Males" : 0,
      "Average Household Size" : 1.0
    }
  },
  {
    "_index" : "populacao",
    "_type" : "_doc",
    "_id" : "1e5k93kBC_QioruGMv4m",
    "_score" : 1.0,
    "_source" : {
      "Total Population" : 156,
      "Total Households" : 114,
      "Total Females" : 105,
      "Zip Code" : 91046,
      "Median Age" : 74.0,
      "Total Males" : 51,
      "Average Household Size" : 1.37
```

c) Mostrar os documentos 50 (Zip Code: 90056) à 60 (Zip Code: 90067) do índice de populacao

GET populacao/_search

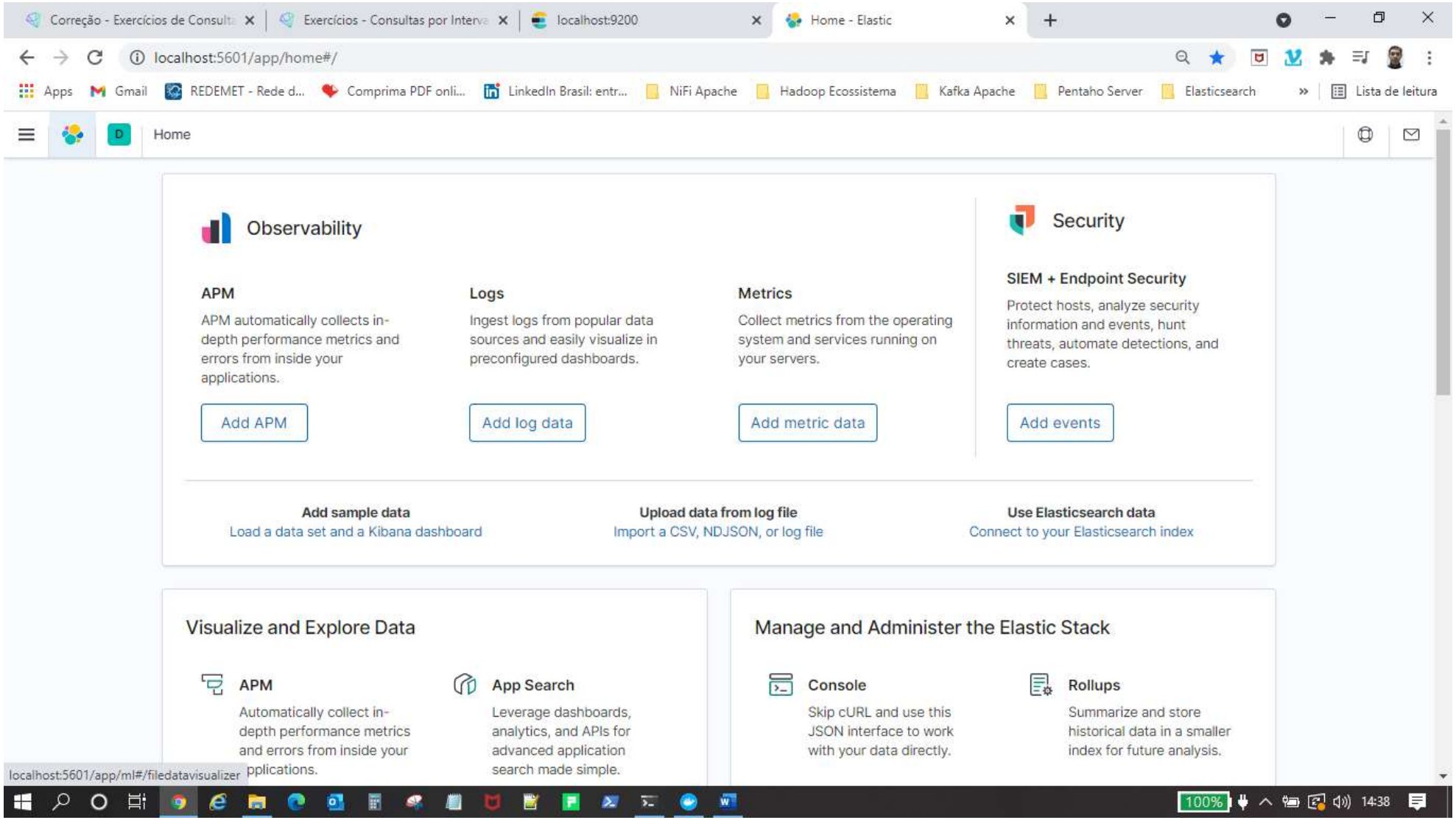
{"query":{"range":{"Zip Code":{"gte":90056,"lte":90067}}}}

```
GET populacao/_search
{
  "query": {
    "range": {
      "Zip Code": {
        "gte": 90056,
        "lte": 90067
      }
    }
  }
}

GET populacao/_search
{"query":{"range":{"Median Age":{"gt":70}}}}

GET populacao/_search
{
  "query": {
    "range": {
      "Total Population": {
        "lt": 100
      }
    }
  }
}

HEAD populacao


#-----------------------------------------#-----------------------------


GET produto/_search
```

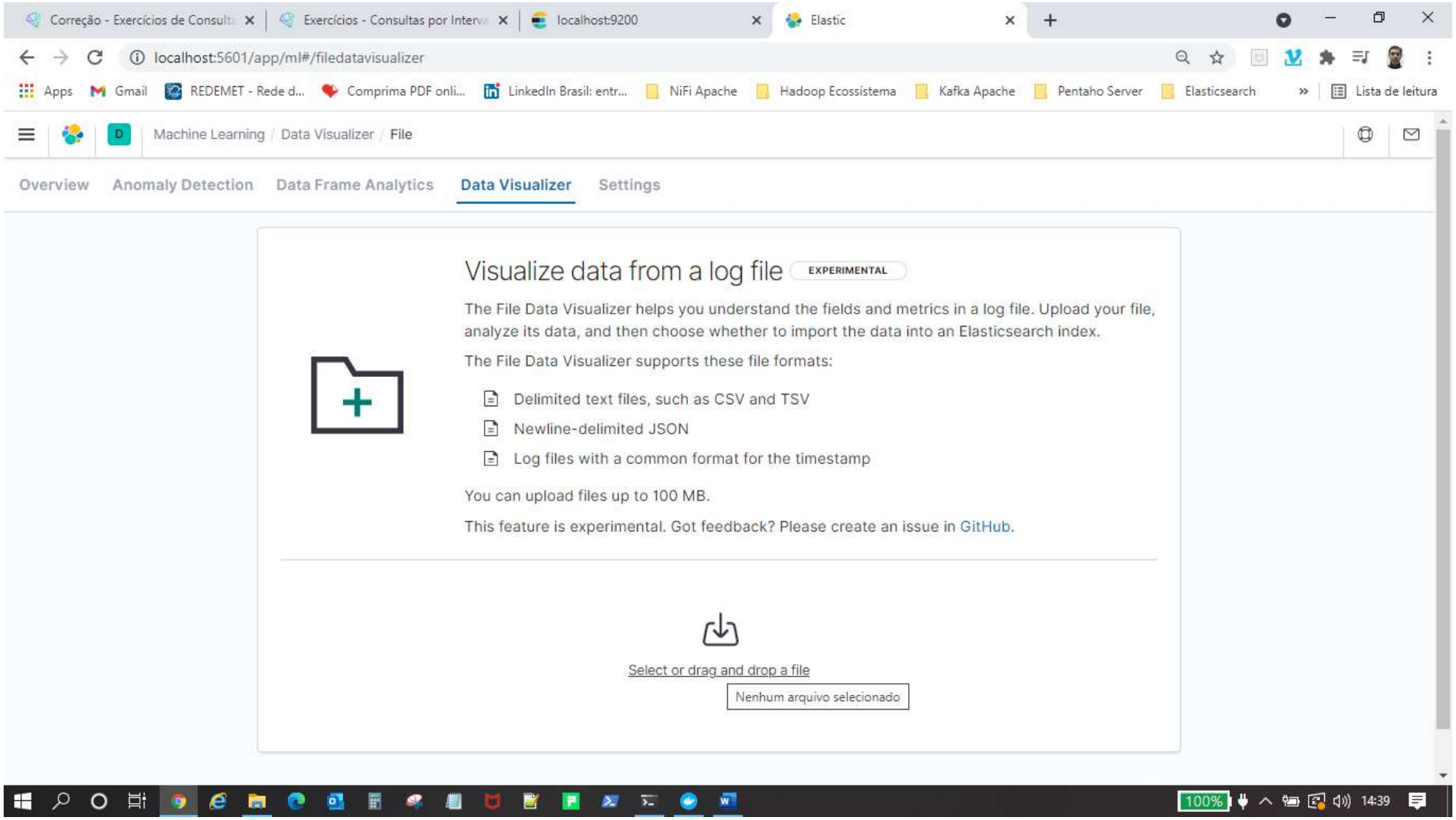
```
"value" : 11,
"relation" : "eq"
},
"max_score" : 1.0,
"hits" : [
  {
    "_index" : "populacao",
    "_type" : "_doc",
    "_id" : "Ue5k93kBC_QioruGMv4m",
    "_score" : 1.0,
    "_source" : {
      "Total Population" : 7827,
      "Total Households" : 3371,
      "Total Females" : 4391,
      "Zip Code" : 90056,
      "Median Age" : 48.4,
      "Total Males" : 3436,
      "Average Household Size" : 2.32
    }
  },
  {
    "_index" : "populacao",
    "_type" : "_doc",
    "_id" : "Uu5k93kBC_QioruGMv4m",
    "_score" : 1.0,
    "_source" : {
      "Total Population" : 44998,
      "Total Households" : 15658,
      "Total Females" : 20698,
      "Zip Code" : 90057,
      "Median Age" : 31.2,
      "Total Males" : 24300,
      "Average Household Size" : 2.81
```

3. Importar através do Kibana o arquivo weekly_MSFT.csv (Guia Arquivos/dataset/weekly_MSFT.csv) com o índice bolsa

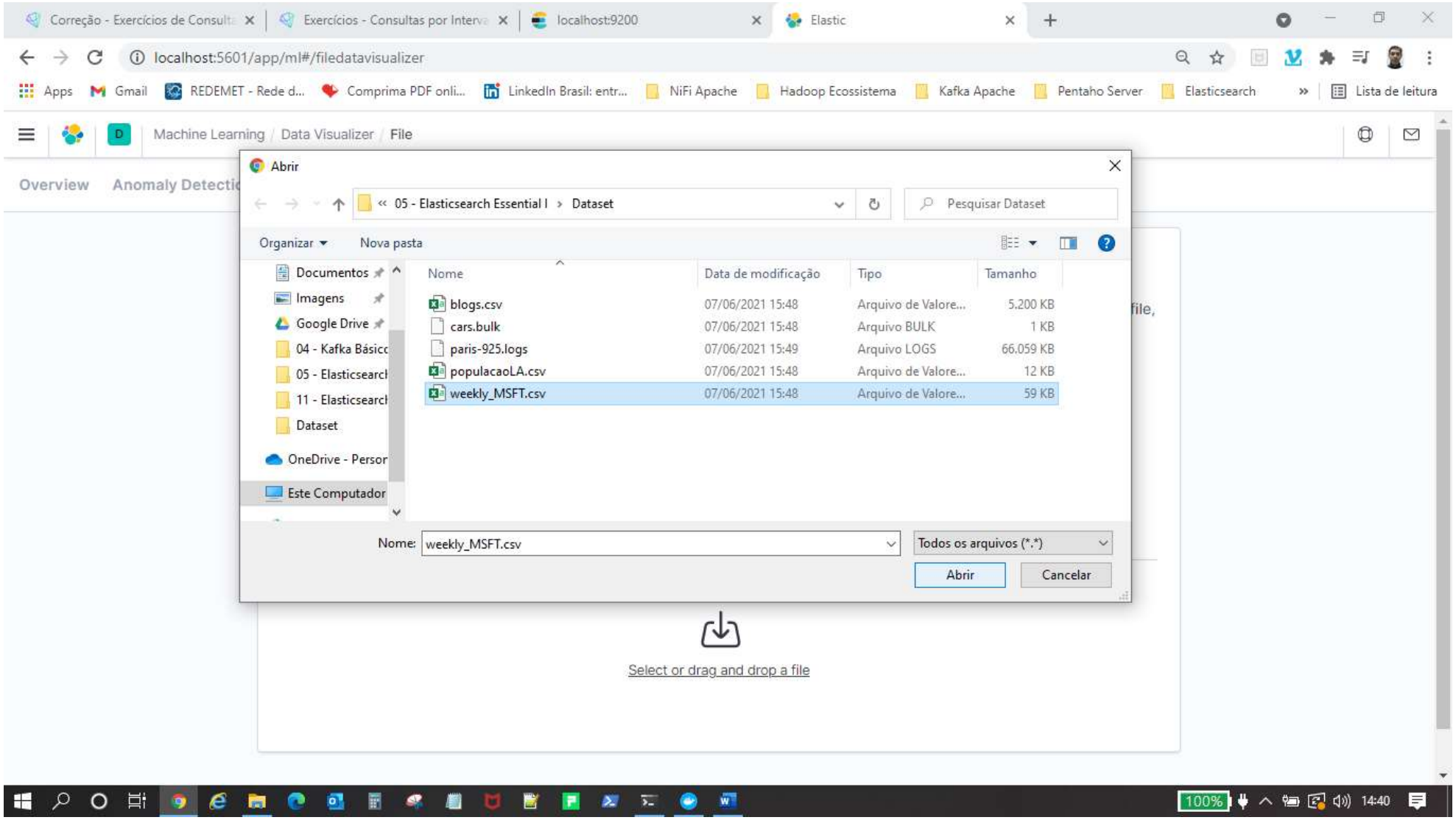
Upload data from log file



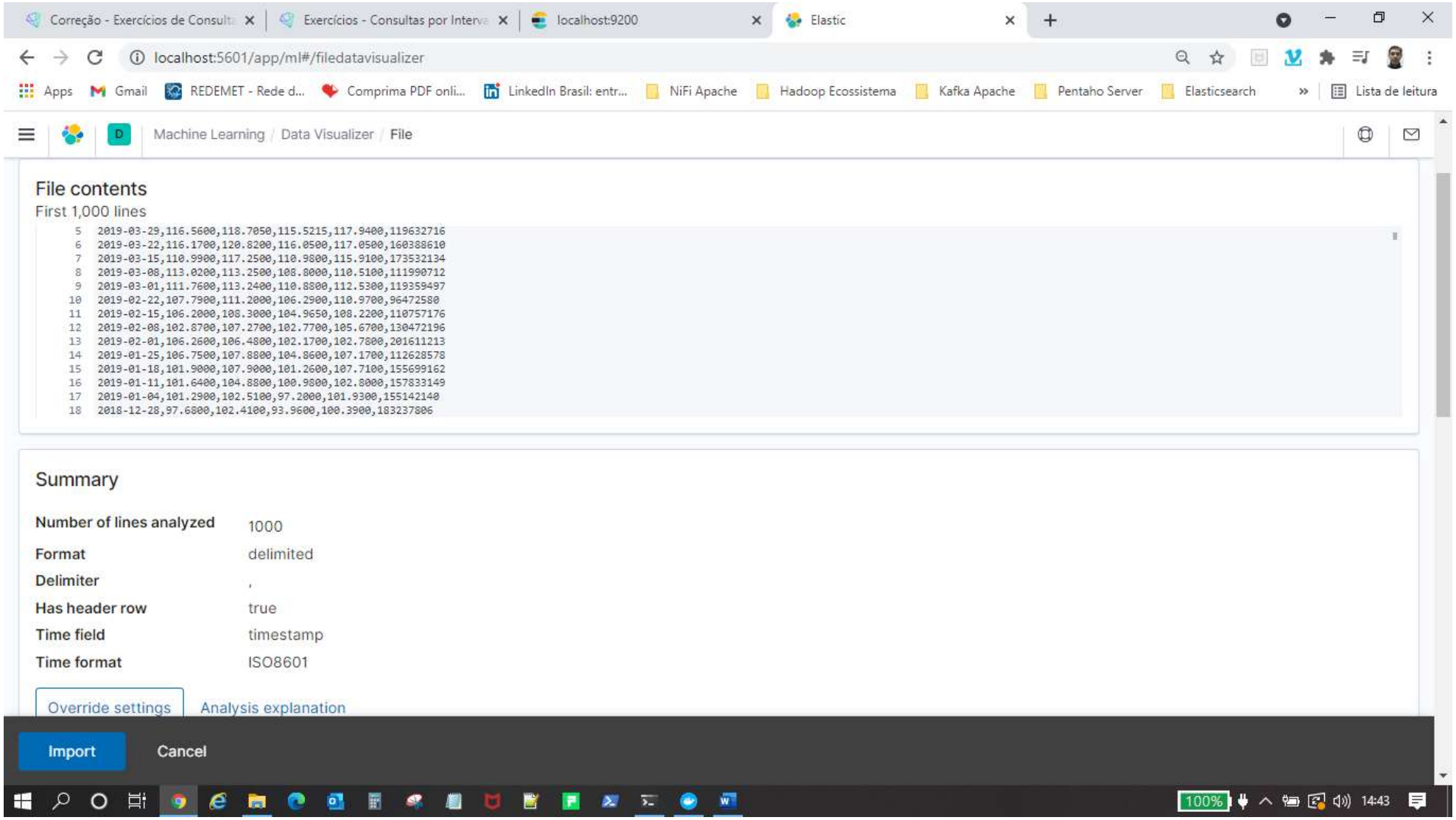
Select or drag and drop a file



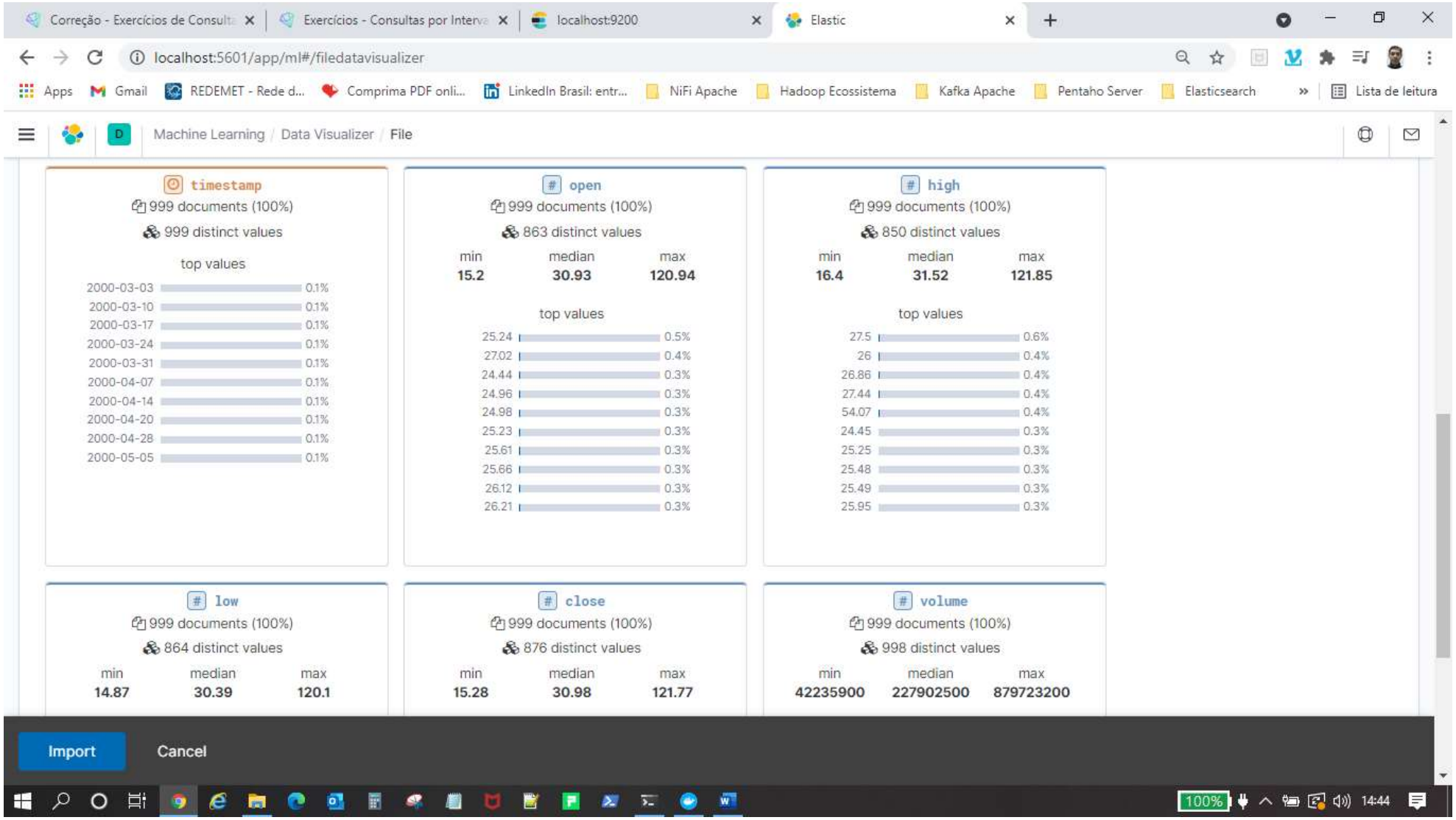
Selecionar o arquivo para importar



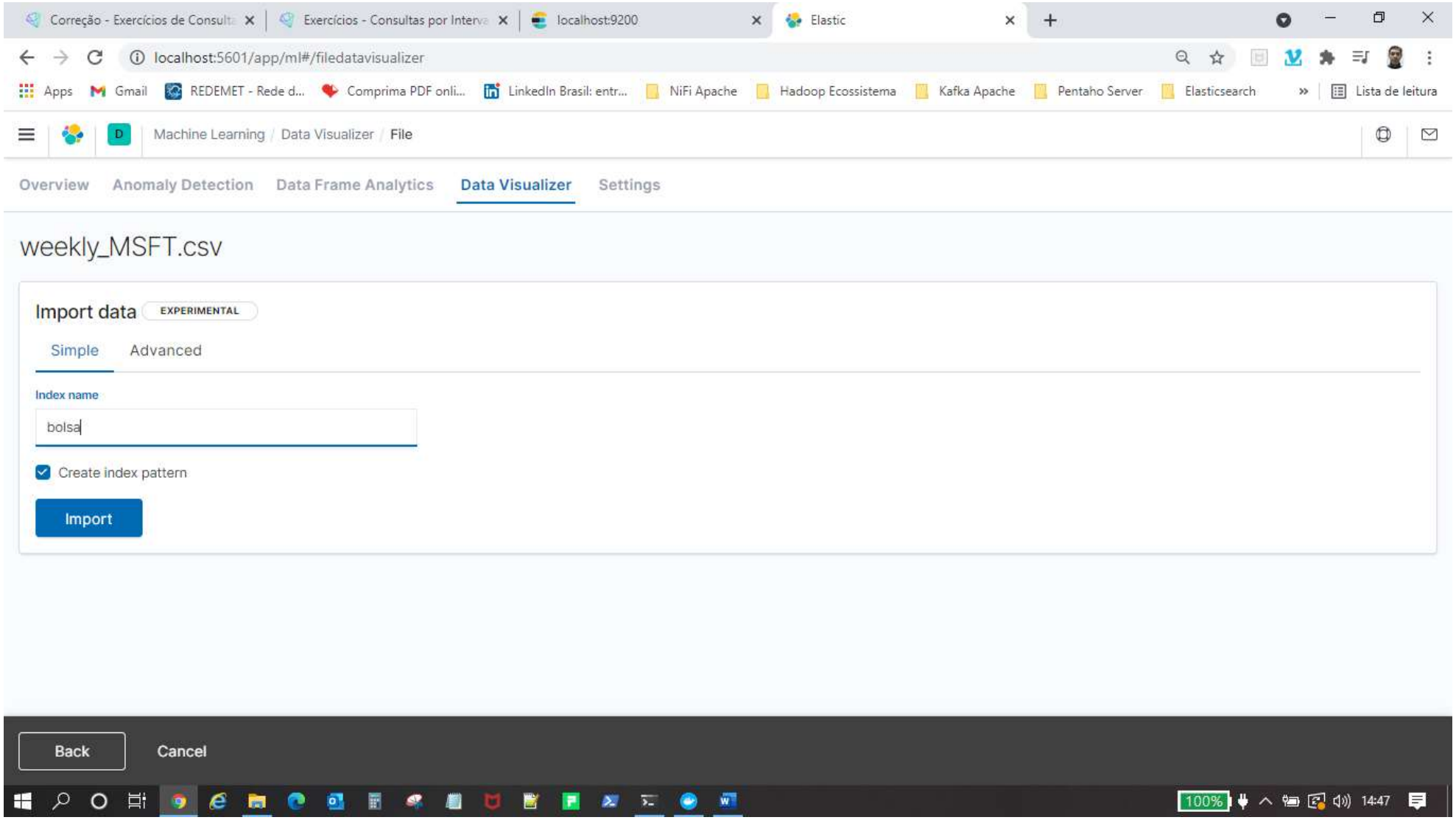
Apresentação dos dados que serão importados



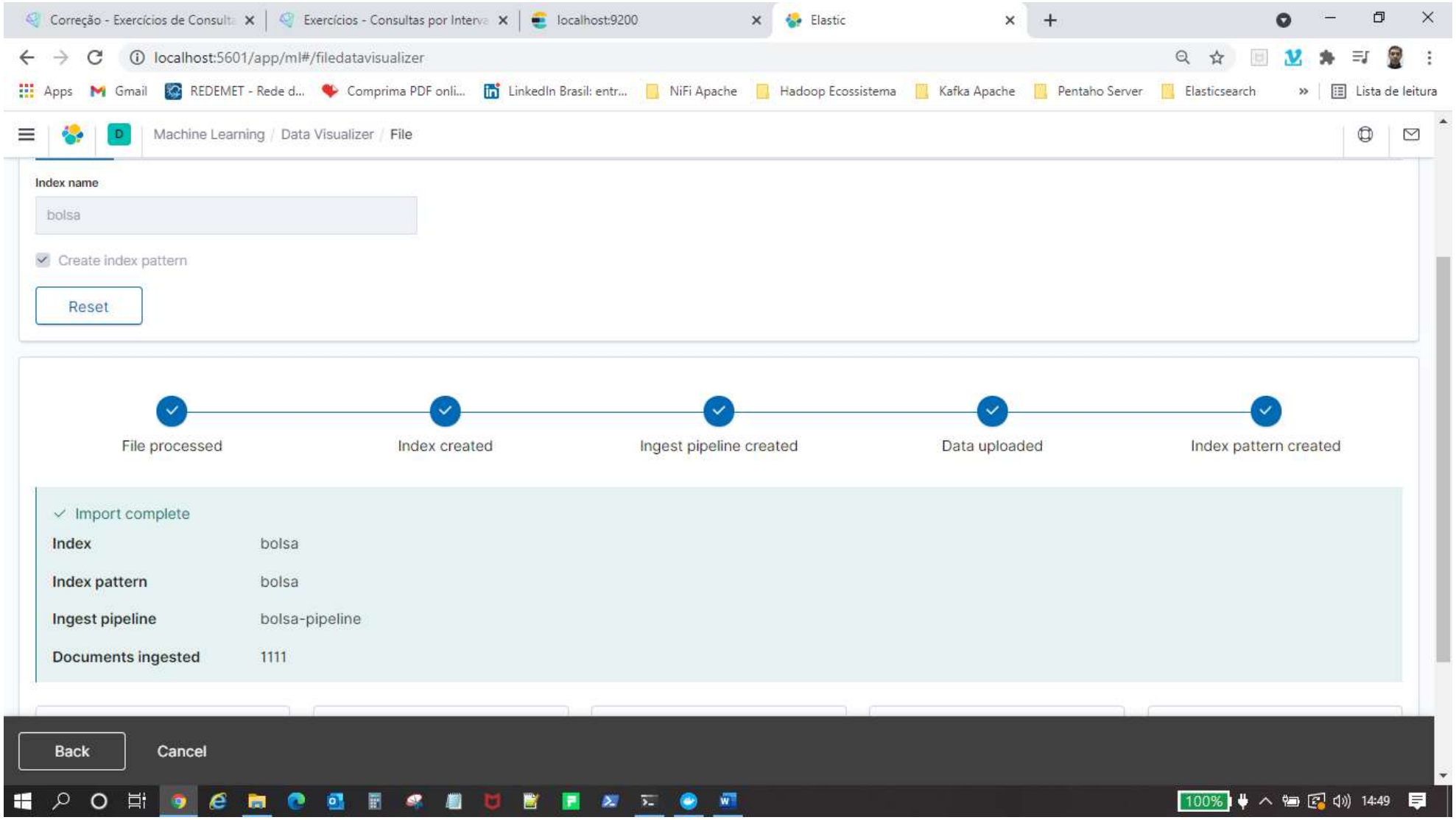
Algumas estatísticas antes de importar



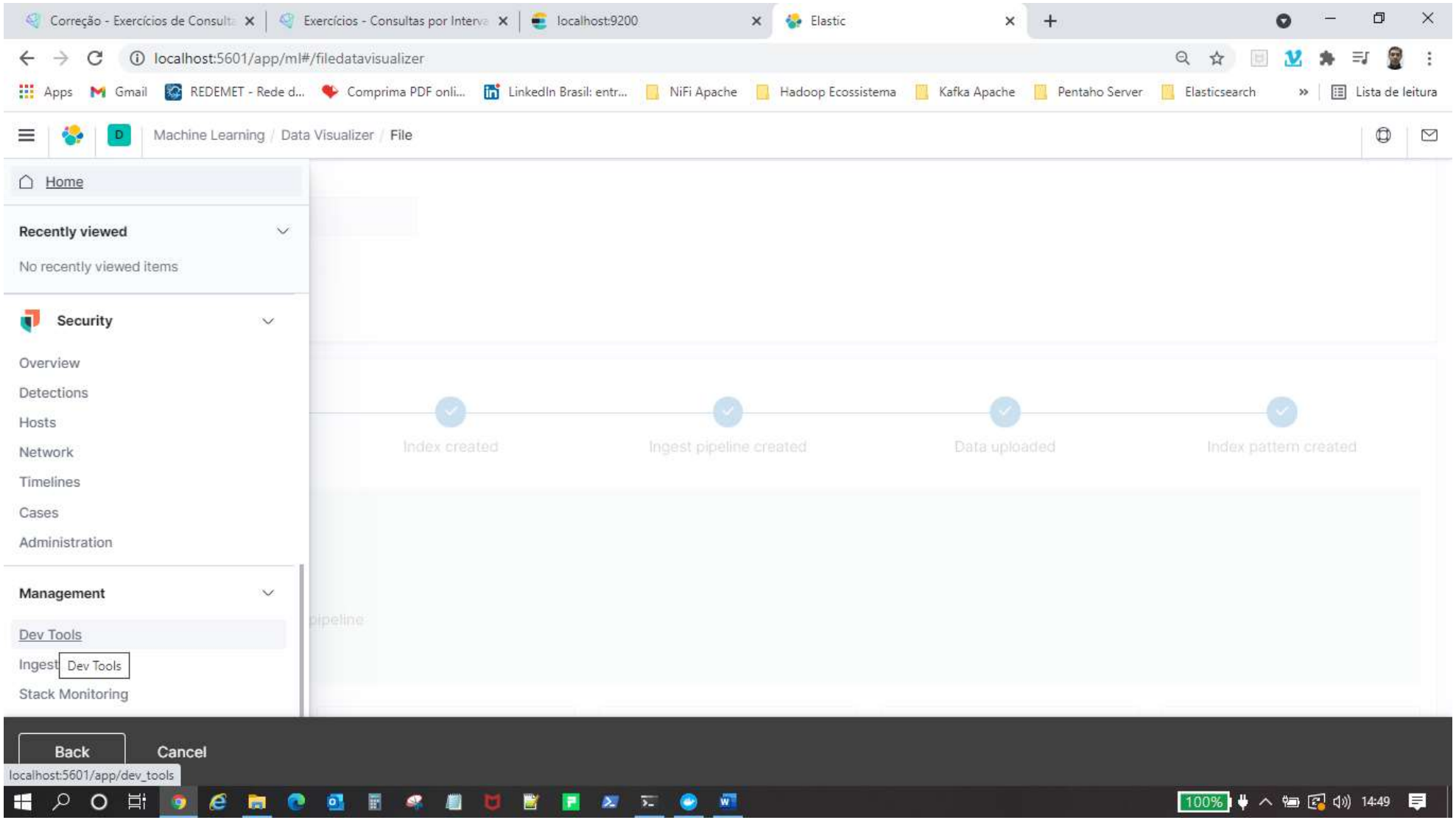
Importar com o nome bolsa e deixando marcado o Create index pattern para fazer Dashboard no Kibana



Dados importados



MENU → Dev Tools



4. Executar as consultas no índice bolsa

Utilizar o mapping para conhecer os dados

Correção - Exercícios de Consult | Exercícios - Consultas por Interva | localhost:9200 | Dev Tools - Elastic

localhost:5601/app/dev_tools#/console

Apps | Gmail | REDEMET - Rede d... | Comprima PDF onli... | LinkedIn Brasil: entr... | NiFi Apache | Hadoop Ecossistema | Kafka Apache | Pentaho Server | Elasticsearch | Lista de leitura

Dev Tools

Console | Search Profiler | Grok Debugger | Painless Lab BETA

History | Settings | Help

200 - OK | 59 ms

```
GET bolsa/_mapping

GET populacao/_search
{"query":{"range":{"Zip Code":{"gte":90056,"lte":90067}}}}

GET populacao/_search
{"query":{"range":{"Median Age":{"gt":70}}}}

GET populacao/_search
{
  "query": {
    "range": {
      "Total Population": {
        "lt": 100
      }
    }
  }
}

HEAD populacao


#----------------------------------------#----------------------------


GET produto/_search
{
  "query": {
    "match": {
      "descricao": {
        "query": "windows linux usb",
        "operator": "or",
        "minimum_should_match": "50%"
```

```
{
  "bolsa" : {
    "mappings" : {
      "_meta" : {
        "created_by" : "ml-file-data-visualizer"
      },
      "properties" : {
        "@timestamp" : {
          "type" : "date"
        },
        "close" : {
          "type" : "double"
        },
        "high" : {
          "type" : "double"
        },
        "low" : {
          "type" : "double"
        },
        "open" : {
          "type" : "double"
        },
        "timestamp" : {
          "type" : "date",
          "format" : "iso8601"
        },
        "volume" : {
          "type" : "long"
        }
      }
    }
  }
}
```

100% 14:52

O SEARCH mostra que tem 111 documentos

Correção - Exercícios de Consult | Exercícios - Consultas por Interva | localhost:9200 | Dev Tools - Elastic

localhost:5601/app/dev_tools#/console

Apps | Gmail | REDEMET - Rede d... | Comprima PDF onli... | LinkedIn Brasil: entr... | NiFi Apache | Hadoop Ecossistema | Kafka Apache | Pentaho Server | Elasticsearch | Lista de leitura

Dev Tools

Console | Search Profiler | Grok Debugger | Painless Lab BETA

History | Settings | Help

200 - OK | 96 ms

```
GET bolsa/_search

GET bolsa/_mapping

GET populacao/_search
{"query":{"range":{"Zip Code":{"gte":90056,"lte":90067}}}}

GET populacao/_search
{"query":{"range":{"Median Age":{"gt":70}}}}

GET populacao/_search
{
  "query": {
    "range": {
      "Total Population": {
        "lt": 100
      }
    }
  }
}

HEAD populacao


#----------------------------------------#----------------------------


GET produto/_search
{
  "query": {
    "match": {
      "descricao": {
        "query": "windows linux usb",
```

```
{
  "took" : 57,
  "timed_out" : false,
  "_shards" : {
    "total" : 1,
    "successful" : 1,
    "skipped" : 0,
    "failed" : 0
  },
  "hits" : {
    "total" : {
      "value" : 1111,
      "relation" : "eq"
    },
    "max_score" : 1.0,
    "hits" : [
      {
        "_index" : "bolsa",
        "_type" : "_doc",
        "_id" : "EWEw_HkBzUroh1c2ypUT",
        "_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"
        }
      },
      {
        "_index" : "bolsa",
```

100% 14:54

a) Visualizar os documentos do dia 2019-01-01 à 2019-03-01. (hits = 9)

GET bolsa/_search

{"query":{"range":{"timestamp":{"gte":"2019-01-01","lte":"2019-03-01","format":"yyyy-MM-dd"}}}}

```
GET bolsa/_search
{
  "query": {
    "range": {
      "timestamp": {
        "gte": "2019-01-01",
        "lte": "2019-03-01",
        "format": "yyyy-MM-dd"
      }
    }
  }
}

GET bolsa/_search

GET bolsa/_mapping

GET populacao/_search
{"query":{"range":{"Zip Code":{"gte":90056,"lte":90067}}}}

GET populacao/_search
{"query":{"range":{"Median Age":{"gt":70}}}}

GET populacao/_search
{
  "query": {
    "range": {
      "Total Population": {
        "lt": 100
      }
    }
  }
}
```

```
  "value" : 9,
  "relation" : "eq"
},
"max_score" : 1.0,
"hits" : [
  {
    "_index" : "bolsa",
    "_type" : "_doc",
    "_id" : "GGEw_HkBzUroh1c2ypUT",
    "_score" : 1.0,
    "_source" : {
      "volume" : 119359497,
      "high" : 113.24,
      "@timestamp" : "2019-03-01T00:00:00.000-03:00",
      "low" : 110.88,
      "close" : 112.53,
      "open" : 111.76,
      "timestamp" : "2019-03-01"
    }
  },
  {
    "_index" : "bolsa",
    "_type" : "_doc",
    "_id" : "GWEw_HkBzUroh1c2ypUT",
    "_score" : 1.0,
    "_source" : {
      "volume" : 96472580,
      "high" : 111.2,
      "@timestamp" : "2019-02-22T00:00:00.000-03:00",
      "low" : 106.29,
      "close" : 110.97,
      "open" : 107.79,
      "timestamp" : "2019-02-22"
```

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

GET bolsa/_search

{"query":{"range":{"timestamp":{"gte":"2019-04-01","lte":"now","format":"yyyy-MM-dd"}}}}

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

GET bolsa/_search
{
  "query": {
    "range": {
      "timestamp": {
        "gte": "2019-01-01",
        "lte": "2019-03-01",
        "format": "yyyy-MM-dd"
      }
    }
  }
}

GET bolsa/_search

GET bolsa/_mapping

GET populacao/_search
{"query":{"range":{"Zip Code":{"gte":90056,"lte":90067}}}}
```

```
  "value" : 3,
  "relation" : "eq"
},
"max_score" : 1.0,
"hits" : [
  {
    "_index" : "bolsa",
    "_type" : "_doc",
    "_id" : "EWEw_HkBzUroh1c2ypUT",
    "_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"
    }
  },
  {
    "_index" : "bolsa",
    "_type" : "_doc",
    "_id" : "EmEw_HkBzUroh1c2ypUT",
    "_score" : 1.0,
    "_source" : {
      "volume" : 83159600,
      "high" : 120.98,
      "@timestamp" : "2019-04-12T00:00:00.000-03:00",
      "low" : 118.58,
      "close" : 120.95,
      "open" : 119.81,
      "timestamp" : "2019-04-12"
```