

Problem Statement :

1. Read about Elasticsearch: [Getting Started with Elasticsearch](#).
2. Install Elasticsearch on your local machine.
3. Create an index (collection) in Elasticsearch.
4. Index the Employee data
from <https://www.kaggle.com/datasets/williamlucas0/employee-sample-data>

1. Read about Elasticsearch

The screenshot shows the Elasticsearch 7.17 Quick start guide page. The page has a navigation sidebar on the left with links like 'What is Elasticsearch?', 'What's new in 7.17', 'Quick start', 'Set up Elasticsearch', 'Upgrade Elasticsearch', 'Index modules', 'Mapping', 'Text analysis', 'Index templates', 'Data streams', and 'Ingest pipelines'. The main content area is titled 'Quick start' and includes a list of topics to learn: 'Install and run Elasticsearch in a test environment', 'Add data to Elasticsearch', 'Search and sort data', and 'Extract fields from unstructured content during a search'. Below this is a section titled 'Run Elasticsearch' which describes the simplest way to set up Elasticsearch as a managed deployment on Elastic Cloud or as a local installation using Docker. The page also features a 'Start free trial' button and a 'Contact Sales' button in the top right corner.

2. Install Elasticsearch:

The screenshot shows a Windows File Explorer window displaying the contents of the 'elasticsearch-7.17.24\bin' directory. The directory contains various files and subdirectories related to the Elasticsearch installation, including 'elasticsearch', 'elasticsearch-certgen', 'elasticsearch-certutil', 'elasticsearch-cli', 'elasticsearch-croneval', 'elasticsearch-env', 'elasticsearch-env-from-file', 'elasticsearch-geoip', 'elasticsearch-keystore', 'elasticsearch-migrate', 'elasticsearch-node', 'elasticsearch-plugin', 'elasticsearch-saml-metadata', 'elasticsearch-service', 'elasticsearch-service-mgr', and 'elasticsearch-service-tokens'. The files are listed with their names, dates modified, types, and sizes. The window also shows the 'This PC' sidebar and the 'Network' section.

2.a) Command prompt run :

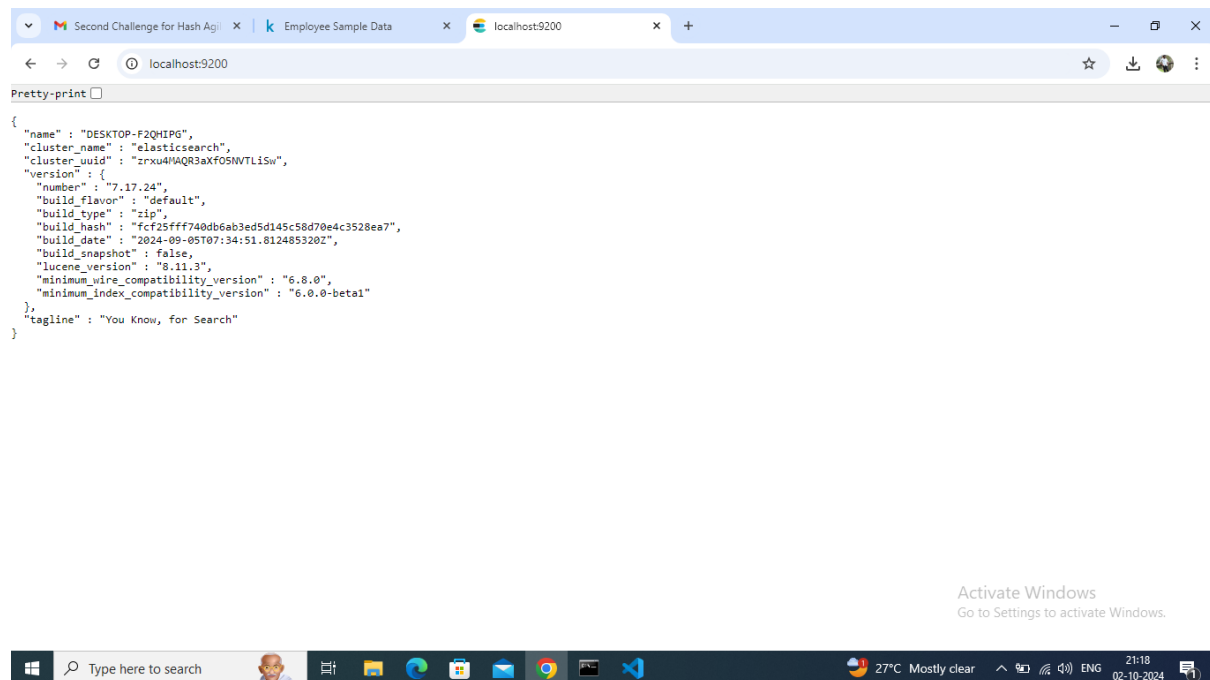
```
C:\Windows\System32\cmd.exe - elasticsearch.bat
Microsoft Windows [Version 10.0.19045.4894]
(c) Microsoft Corporation. All rights reserved.

C:\Users\admin\Downloads\elasticsearch-7.17.24\bin>elasticsearch.bat
Oct 02, 2024 9:11:53 PM sun.util.locale.provider.LocaleProviderAdapter <clinit>
WARNING: COMPAT locale provider will be removed in a future release
[2024-10-02T21:11:59.446] [INFO] [o.e.n.Node] [DESKTOP-F2QH1PG] version[7.17.24], pid[2780], build[default/zip/fcf25fff740db6ab3ed5d145c58d70e4c3528ea/20
24-09-05T07:34:51.812Z85320Z], OS[Windows 10/10.0/amd64], JVM[Oracle Corporation/OpenJDK 64-Bit Server VM/22.0.1/22.0.1+8-16]
[2024-10-02T21:11:59.462] [INFO] [o.e.n.Node] [DESKTOP-F2QH1PG] JVM home [C:\Users\admin\Downloads\elasticsearch-7.17.24\jdk], using bundled JDK [true]
[2024-10-02T21:11:59.477] [INFO] [o.e.n.Node] [DESKTOP-F2QH1PG] JVM arguments [-Des.networkaddress.cache.ttl=60, -Des.networkaddress.cache.negative.ttl=10
, -XX:+AlwaysPreTouch, -Xss1m, -Djava.awt.headless=true, -Dfile.encoding=UTF-8, -Djna.nosys=true, -XX:-OmitStackTraceInFastThrow, -XX:+ShowCodeDetailsInExceptionMessage
s, -Dio.netty.noUnsafe=true, -Dio.netty.noKeySetOptimization=true, -Dio.netty.recycler.maxCapacityPerThread=0, -Dio.netty allocator.numDirectArenas=0, -Dlog4j.shutdownH
ookEnabled=false, -Dlog4j2.disable.jmx=true, -Dlog4j2.formatMsgNoLookups=true, -Djava.locale.providers=SPI,COMPAT, --add-opens=java.base/java.io=ALL-UNNAMED, -Djava.sec
urity.manager.allow-xx:+useG1GC, -Djava.io.tmpdir=C:\Users\admin\AppData\Local\Temp\elasticsearch, -XX:-HeapDumpOnOutOfMemoryError, -XX:-ExitOnOutOfMemoryError, -XXH
eapDumpPath=data, -XX:ErrorFile=logs/hs_err_pid%p.log, -Xlog:gc*,gc+age=trace,safepoint:file=logs/gc.log:utctime,pid,tags:filecount=32,filesize=64m, -XX:+UnlockDiagnostic
VMOptions, -XX:G1NumCollectionChecksKeepPinned=10000000, -Xms1967m, -Xmx1967m, -XX:MaxDirectMemorySize=1031798784, -XX:G1HeapRegionSize=4m, -XX:InitiatingHeapOccupancyPerc
ent=30, -XX:G1ReservePercent=15, -Elasticsearch, -Des.path.home=C:\Users\admin\Downloads\elasticsearch-7.17.24, -Des.path.conf=C:\Users\admin\Downloads\elasticsearch-7
.17.24\config, -Des.distribution.flavor=default, -Des.distribution.type=zip, -Des.bundled_jdk=true]
[2024-10-02T21:12:28.714] [INFO] [o.e.p.PluginsService] [DESKTOP-F2QH1PG] loaded module [ags-matrix-stats]
[2024-10-02T21:12:28.714] [INFO] [o.e.p.PluginsService] [DESKTOP-F2QH1PG] loaded module [analysis-common]
[2024-10-02T21:12:28.714] [INFO] [o.e.p.PluginsService] [DESKTOP-F2QH1PG] loaded module [constant-keyword]
[2024-10-02T21:12:28.714] [INFO] [o.e.p.PluginsService] [DESKTOP-F2QH1PG] loaded module [frozen-indices]
[2024-10-02T21:12:28.729] [INFO] [o.e.p.PluginsService] [DESKTOP-F2QH1PG] loaded module [ingest-common]
[2024-10-02T21:12:28.729] [INFO] [o.e.p.PluginsService] [DESKTOP-F2QH1PG] loaded module [ingest-geoip]
[2024-10-02T21:12:28.729] [INFO] [o.e.p.PluginsService] [DESKTOP-F2QH1PG] loaded module [ingest-user-agent]
[2024-10-02T21:12:28.729] [INFO] [o.e.p.PluginsService] [DESKTOP-F2QH1PG] loaded module [kibana]
[2024-10-02T21:12:28.729] [INFO] [o.e.p.PluginsService] [DESKTOP-F2QH1PG] loaded module [lang-expression]
[2024-10-02T21:12:28.729] [INFO] [o.e.p.PluginsService] [DESKTOP-F2QH1PG] loaded module [lang-mustache]
[2024-10-02T21:12:28.729] [INFO] [o.e.p.PluginsService] [DESKTOP-F2QH1PG] loaded module [lang-painless]
[2024-10-02T21:12:28.745] [INFO] [o.e.p.PluginsService] [DESKTOP-F2QH1PG] loaded module [legacy-geo]
[2024-10-02T21:12:28.760] [INFO] [o.e.p.PluginsService] [DESKTOP-F2QH1PG] loaded module [mapper-elastic]
[2024-10-02T21:12:28.760] [INFO] [o.e.p.PluginsService] [DESKTOP-F2QH1PG] loaded module [mapper-version]
[2024-10-02T21:12:28.760] [INFO] [o.e.p.PluginsService] [DESKTOP-F2QH1PG] loaded module [parent-join]
[2024-10-02T21:12:28.760] [INFO] [o.e.p.PluginsService] [DESKTOP-F2QH1PG] loaded module [percolator]
[2024-10-02T21:12:28.760] [INFO] [o.e.p.PluginsService] [DESKTOP-F2QH1PG] loaded module [rank-eval]
[2024-10-02T21:12:28.760] [INFO] [o.e.p.PluginsService] [DESKTOP-F2QH1PG] loaded module [reindex]
[2024-10-02T21:12:28.760] [INFO] [o.e.p.PluginsService] [DESKTOP-F2QH1PG] loaded module [repositories-metering-api]
[2024-10-02T21:12:28.776] [INFO] [o.e.p.PluginsService] [DESKTOP-F2QH1PG] loaded module [repository-encrypted]
[2024-10-02T21:12:28.776] [INFO] [o.e.p.PluginsService] [DESKTOP-F2QH1PG] loaded module [repository-url]
[2024-10-02T21:12:28.776] [INFO] [o.e.p.PluginsService] [DESKTOP-F2QH1PG] loaded module [runtime-fields-common]
[2024-10-02T21:12:28.776] [INFO] [o.e.p.PluginsService] [DESKTOP-F2QH1PG] loaded module [search-business-rules]
[2024-10-02T21:12:28.776] [INFO] [o.e.p.PluginsService] [DESKTOP-F2QH1PG] loaded module [searchable-snapshots]
[2024-10-02T21:12:28.776] [INFO] [o.e.p.PluginsService] [DESKTOP-F2QH1PG] loaded module [snapshot-repo-test-kit]
[2024-10-02T21:12:28.792] [INFO] [o.e.p.PluginsService] [DESKTOP-F2QH1PG] loaded module [spatial]
```

```
C:\Windows\System32\cmd.exe - elasticsearch.bat
[2024-10-02T21:12:28.870] [INFO] [o.e.p.PluginsService] [DESKTOP-F2QH1PG] loaded module [x-pack-rollup]
[2024-10-02T21:12:28.870] [INFO] [o.e.p.PluginsService] [DESKTOP-F2QH1PG] loaded module [x-pack-security]
[2024-10-02T21:12:28.870] [INFO] [o.e.p.PluginsService] [DESKTOP-F2QH1PG] loaded module [x-pack-shutdown]
[2024-10-02T21:12:28.870] [INFO] [o.e.p.PluginsService] [DESKTOP-F2QH1PG] loaded module [x-pack-sql]
[2024-10-02T21:12:28.870] [INFO] [o.e.p.PluginsService] [DESKTOP-F2QH1PG] loaded module [x-pack-stack]
[2024-10-02T21:12:28.885] [INFO] [o.e.p.PluginsService] [DESKTOP-F2QH1PG] loaded module [x-pack-text-structure]
[2024-10-02T21:12:28.885] [INFO] [o.e.p.PluginsService] [DESKTOP-F2QH1PG] loaded module [x-pack-voting-only-node]
[2024-10-02T21:12:28.885] [INFO] [o.e.p.PluginsService] [DESKTOP-F2QH1PG] loaded module [x-pack-watcher]
[2024-10-02T21:12:28.885] [INFO] [o.e.p.PluginsService] [DESKTOP-F2QH1PG] no plugins loaded
[2024-10-02T21:12:30.698] [INFO] [o.e.e.NodeEnvironment] [DESKTOP-F2QH1PG] using [1] data paths, mounts [[(C:)], net usable_space [73.5gb], net total_space [118.6gb
], types [NTFS]
[2024-10-02T21:12:30.714] [INFO] [o.e.e.NodeEnvironment] [DESKTOP-F2QH1PG] heap size [1.9gb], compressed ordinary object pointers [true]
[2024-10-02T21:12:31.089] [INFO] [o.e.n.Node] [DESKTOP-F2QH1PG] node name [DESKTOP-F2QH1PG], node ID [Bt-NJINGRICKA-fVbrVwBg], cluster name [elasticsearch
], roles [transform, data_frozen, master, remote_cluster_client, data_ml, data_content, data_hot, data_warm, data_cold, ingest]
[2024-10-02T21:12:31.691] [INFO] [o.e.x.s.p.l.CppLogMessageHandler] [DESKTOP-F2QH1PG] [controller/5656] [Main.cc@122] controller (64 bit): Version 7.17.24 (Build ed240f4
2881932) Copyright (c) 2024 Elasticsearch BV
[2024-10-02T21:12:47.258] [INFO] [o.e.x.s.a.s.FileRolesStore] [DESKTOP-F2QH1PG] parsed [0] roles from file [C:\Users\admin\Downloads\elasticsearch-7.17.24\config\roles.y
ml]
[2024-10-02T21:12:49.356] [INFO] [o.e.i.g.ConfigDatabases] [DESKTOP-F2QH1PG] initialized default databases [[GeoLite2-Country.mmdb, GeoLite2-City.mmdb, GeoLite2-ASN.mm
db]], config databases [[]] and watching [C:\Users\admin\Downloads\elasticsearch-7.17.24\config\ingest-geoip] for changes
[2024-10-02T21:12:49.371] [INFO] [o.e.i.g.DatabaseNodeService] [DESKTOP-F2QH1PG] deleting stale file [C:\Users\admin\AppData\Local\Temp\elasticsearch\geopip-databases\Bt-
NJINGRICKA-fVbrVwBg\GeoLite2-ASN.mmdb]
[2024-10-02T21:12:49.371] [INFO] [o.e.i.g.DatabaseNodeService] [DESKTOP-F2QH1PG] deleting stale file [C:\Users\admin\AppData\Local\Temp\elasticsearch\geopip-databases\Bt-
NJINGRICKA-fVbrVwBg\GeoLite2-ASN.mmdb COPYRIGHT.txt]
[2024-10-02T21:12:49.387] [INFO] [o.e.i.g.DatabaseNodeService] [DESKTOP-F2QH1PG] deleting stale file [C:\Users\admin\AppData\Local\Temp\elasticsearch\geopip-databases\Bt-
NJINGRICKA-fVbrVwBg\GeoLite2-ASN.mmdb elastic-geoip-database-service-agreement-LICENSE.txt]
[2024-10-02T21:12:49.387] [INFO] [o.e.i.g.DatabaseNodeService] [DESKTOP-F2QH1PG] deleting stale file [C:\Users\admin\AppData\Local\Temp\elasticsearch\geopip-databases\Bt-
NJINGRICKA-fVbrVwBg\GeoLite2-ASN.mmdb LICENSE.txt]
[2024-10-02T21:12:49.403] [INFO] [o.e.i.g.DatabaseNodeService] [DESKTOP-F2QH1PG] deleting stale file [C:\Users\admin\AppData\Local\Temp\elasticsearch\geopip-databases\Bt-
NJINGRICKA-fVbrVwBg\GeoLite2-City.mmdb]
[2024-10-02T21:12:49.418] [INFO] [o.e.i.g.DatabaseNodeService] [DESKTOP-F2QH1PG] deleting stale file [C:\Users\admin\AppData\Local\Temp\elasticsearch\geopip-databases\Bt-
NJINGRICKA-fVbrVwBg\GeoLite2-City.mmdb COPYRIGHT.txt]
[2024-10-02T21:12:49.418] [INFO] [o.e.i.g.DatabaseNodeService] [DESKTOP-F2QH1PG] deleting stale file [C:\Users\admin\AppData\Local\Temp\elasticsearch\geopip-databases\Bt-
NJINGRICKA-fVbrVwBg\GeoLite2-City.mmdb elastic-geoip-database-service-agreement-LICENSE.txt]
[2024-10-02T21:12:49.434] [INFO] [o.e.i.g.DatabaseNodeService] [DESKTOP-F2QH1PG] deleting stale file [C:\Users\admin\AppData\Local\Temp\elasticsearch\geopip-databases\Bt-
NJINGRICKA-fVbrVwBg\GeoLite2-City.mmdb LICENSE.txt]
[2024-10-02T21:12:49.434] [INFO] [o.e.i.g.DatabaseNodeService] [DESKTOP-F2QH1PG] deleting stale file [C:\Users\admin\AppData\Local\Temp\elasticsearch\geopip-databases\Bt-
NJINGRICKA-fVbrVwBg\GeoLite2-City.mmdb README.txt]
[2024-10-02T21:12:49.449] [INFO] [o.e.i.g.DatabaseNodeService] [DESKTOP-F2QH1PG] deleting stale file [C:\Users\admin\AppData\Local\Temp\elasticsearch\geopip-databases\Bt-
NJINGRICKA-fVbrVwBg\GeoLite2-Country.mmdb]
[2024-10-02T21:12:49.465] [INFO] [o.e.i.g.DatabaseNodeService] [DESKTOP-F2QH1PG] deleting stale file [C:\Users\admin\AppData\Local\Temp\elasticsearch\geopip-databases\Bt-
NJINGRICKA-fVbrVwBg\GeoLite2-Country.mmdb COPYRIGHT.txt]
[2024-10-02T21:12:49.465] [INFO] [o.e.i.g.DatabaseNodeService] [DESKTOP-F2QH1PG] deleting stale file [C:\Users\admin\AppData\Local\Temp\elasticsearch\geopip-databases\Bt-
NJINGRICKA-fVbrVwBg\GeoLite2-Country.mmdb elastic-geoip-database-service-agreement-LICENSE.txt]
[2024-10-02T21:13:05.501] [INFO] [o.e.c.r.a.AllocationService] [DESKTOP-F2QH1PG] Cluster health status changed from [RED] to [YELLOW] (reason: [shards started [[.geopip_d
atabases][0]]].
[2024-10-02T21:13:05.892] [INFO] [o.e.i.g.DatabaseNodeService] [DESKTOP-F2QH1PG] retrieve geopip database [GeoLite2-Country.mmdb] from [.geopip_databases] to [C:\Users\admin
\AppData\Local\Temp\elasticsearch\geopip-databases\Bt-NJINGRICKA-fVbrVwBg\GeoLite2-Country.mmdb.tmp.gz]
[2024-10-02T21:13:06.001] [INFO] [o.e.i.g.DatabaseNodeService] [DESKTOP-F2QH1PG] retrieve geopip database [GeoLite2-City.mmdb] from [.geopip_databases] to [C:\Users\admin\A
ppData\Local\Temp\elasticsearch\geopip-databases\Bt-NJINGRICKA-fVbrVwBg\GeoLite2-City.mmdb.tmp.gz]
[2024-10-02T21:13:06.048] [INFO] [o.e.i.g.DatabaseNodeService] [DESKTOP-F2QH1PG] retrieve geopip database [GeoLite2-ASN.mmdb] from [.geopip_databases] to [C:\Users\admin\A
ppData\Local\Temp\elasticsearch\geopip-databases\Bt-NJINGRICKA-fVbrVwBg\GeoLite2-ASN.mmdb.tmp.gz]
[2024-10-02T21:13:07.256] [INFO] [o.e.i.g.DatabaseNodeService] [DESKTOP-F2QH1PG] successfully reloaded changed geopip database file [C:\Users\admin\AppData\Local\Temp\ela
sticsearch\geopip-databases\Bt-NJINGRICKA-fVbrVwBg\GeoLite2-Country.mmdb]
[2024-10-02T21:13:07.475] [INFO] [o.e.i.g.DatabaseNodeService] [DESKTOP-F2QH1PG] successfully reloaded changed geopip database file [C:\Users\admin\AppData\Local\Temp\ela
sticsearch\geopip-databases\Bt-NJINGRICKA-fVbrVwBg\GeoLite2-ASN.mmdb]
[2024-10-02T21:13:08.796] [INFO] [o.e.i.g.DatabaseNodeService] [DESKTOP-F2QH1PG] successfully reloaded changed geopip database file [C:\Users\admin\AppData\Local\Temp\ela
sticsearch\geopip-databases\Bt-NJINGRICKA-fVbrVwBg\GeoLite2-City.mmdb]
```

```
C:\Windows\System32\cmd.exe - elasticsearch.bat
[2024-10-02T21:13:09.704] [INFO] [o.e.h.AbstractHttpServerTransport] [DESKTOP-F2QH1PG] publish_address [127.0.0.1:9200], bound_addresses {[::1]:9200}, [127.0.0.1:9200]
[2024-10-02T21:13:09.704] [INFO] [o.e.n.Node] [DESKTOP-F2QH1PG] started
[2024-10-02T21:13:00.747] [INFO] [o.e.l.LicenseService] [DESKTOP-F2QH1PG] license [cbb5502b-f52b-49eb-8912-e47fdb06ddfa] mode [basic] - valid
[2024-10-02T21:13:00.763] [WARN] [o.e.x.s.s.SecurityStatusChangeListener] [DESKTOP-F2QH1PG] Active license is now [BASIC]; Security is disabled
[2024-10-02T21:13:00.763] [WARN] [o.e.x.s.s.SecurityStatusChangeListener] [DESKTOP-F2QH1PG] Elasticsearch built-in security features are not enabled. Without authenticat
ion, your cluster could be accessible to anyone. See https://www.elastic.co/guide/en/elasticsearch/reference/7.17/security-minimal-setup.html to enable security.
[2024-10-02T21:13:00.794] [INFO] [o.e.g.GeoIpDownloader] [DESKTOP-F2QH1PG] recovered [4] indices into cluster state
[2024-10-02T21:13:04.063] [ERROR] [o.e.i.g.GeoIpDownloader] [DESKTOP-F2QH1PG] exception during geopip databases update
org.elasticsearch.ElasticsearchException: not all primary shards of [.geopip_databases] index are active
    at org.elasticsearch.ingest.geopip.GeoIpDownloader.updateDatabases(GeoIpDownloader.java:137) ~[ingest-geoip-7.17.24.jar:7.17.24]
    at org.elasticsearch.ingest.geopip.GeoIpDownloader.runDownload(GeoIpDownloader.java:284) [ingest-geoip-7.17.24.jar:7.17.24]
    at org.elasticsearch.ingest.geopip.GeoIpDownloaderTaskExecutor.nodeOperation(GeoIpDownloaderTaskExecutor.java:100) [ingest-geoip-7.17.24.jar:7.17.24]
    at org.elasticsearch.ingest.geopip.GeoIpDownloaderTaskExecutor.run(GeoIpDownloaderTaskExecutor.java:46) [ingest-geoip-7.17.24.jar:7.17.24]
    at org.elasticsearch.persistent.NodePersistentTaskExecutor$1.doRun(NodePersistentTaskExecutor.java:42) [elasticsearch-7.17.24.jar:7.17.24]
    at org.elasticsearch.common.util.concurrent.ThreadContext$ContextPreservingAbstractRunnable.doRun(ThreadContext.java:777) [elasticsearch-7.17.24.jar:7.17.24]
    at java.util.concurrent.ThreadPoolExecutor.runWorker(ThreadPoolExecutor.java:1144) [?:?]
    at java.util.concurrent.ThreadPoolExecutor$Worker.run(ThreadPoolExecutor.java:642) [?:?]
    at java.lang.Thread.run(Thread.java:1570) [?:?]
[2024-10-02T21:13:05.501] [INFO] [o.e.c.r.a.AllocationService] [DESKTOP-F2QH1PG] Cluster health status changed from [RED] to [YELLOW] (reason: [shards started [[.geopip_d
atabases][0]]].
[2024-10-02T21:13:05.892] [INFO] [o.e.i.g.DatabaseNodeService] [DESKTOP-F2QH1PG] retrieve geopip database [GeoLite2-Country.mmdb] from [.geopip_databases] to [C:\Users\admin
\AppData\Local\Temp\elasticsearch\geopip-databases\Bt-NJINGRICKA-fVbrVwBg\GeoLite2-Country.mmdb.tmp.gz]
[2024-10-02T21:13:06.001] [INFO] [o.e.i.g.DatabaseNodeService] [DESKTOP-F2QH1PG] retrieve geopip database [GeoLite2-City.mmdb] from [.geopip_databases] to [C:\Users\admin\A
ppData\Local\Temp\elasticsearch\geopip-databases\Bt-NJINGRICKA-fVbrVwBg\GeoLite2-City.mmdb.tmp.gz]
[2024-10-02T21:13:06.048] [INFO] [o.e.i.g.DatabaseNodeService] [DESKTOP-F2QH1PG] retrieve geopip database [GeoLite2-ASN.mmdb] from [.geopip_databases] to [C:\Users\admin\A
ppData\Local\Temp\elasticsearch\geopip-databases\Bt-NJINGRICKA-fVbrVwBg\GeoLite2-ASN.mmdb.tmp.gz]
[2024-10-02T21:13:07.256] [INFO] [o.e.i.g.DatabaseNodeService] [DESKTOP-F2QH1PG] successfully reloaded changed geopip database file [C:\Users\admin\AppData\Local\Temp\ela
sticsearch\geopip-databases\Bt-NJINGRICKA-fVbrVwBg\GeoLite2-Country.mmdb]
[2024-10-02T21:13:07.475] [INFO] [o.e.i.g.DatabaseNodeService] [DESKTOP-F2QH1PG] successfully reloaded changed geopip database file [C:\Users\admin\AppData\Local\Temp\ela
sticsearch\geopip-databases\Bt-NJINGRICKA-fVbrVwBg\GeoLite2-ASN.mmdb]
[2024-10-02T21:13:08.796] [INFO] [o.e.i.g.DatabaseNodeService] [DESKTOP-F2QH1PG] successfully reloaded changed geopip database file [C:\Users\admin\AppData\Local\Temp\ela
sticsearch\geopip-databases\Bt-NJINGRICKA-fVbrVwBg\GeoLite2-City.mmdb]
```

2.b) Local Host run:



3.Create an index (collection) in Elasticsearch:

Input:

Create index.py

```
from elasticsearch import Elasticsearch
client = Elasticsearch("http://localhost:9200")
index_name = 'employee_data'
client.indices.create(index=index_name, ignore=400)
print(f"Index '{index_name}' created.")
```

Output:

3.a) VsCode Output:

```
PS C:\Users\admin\Desktop\elasticsearch> &
C:/Users/admin/AppData/Local/Programs/Python/Python312/python.exe
"c:/Users/admin/Desktop/elasticsearch/create index.py"

c:\Users\admin\Desktop\elasticsearch\create index.py:8: DeprecationWarning:
Passing transport options in the API method is deprecated. Use
'Elasticsearch.options()' instead.

es.indices.create(index=index_name, ignore=400)
```

c:\Users\admin\Desktop\elasticsearch\create_index.py:8: ElasticsearchWarning:
Elasticsearch built-in security features are not enabled. Without authentication, your
cluster could be accessible to anyone.

<https://www.elastic.co/guide/en/elasticsearch/reference/7.17/security-minimal-setup.html> to enable security.

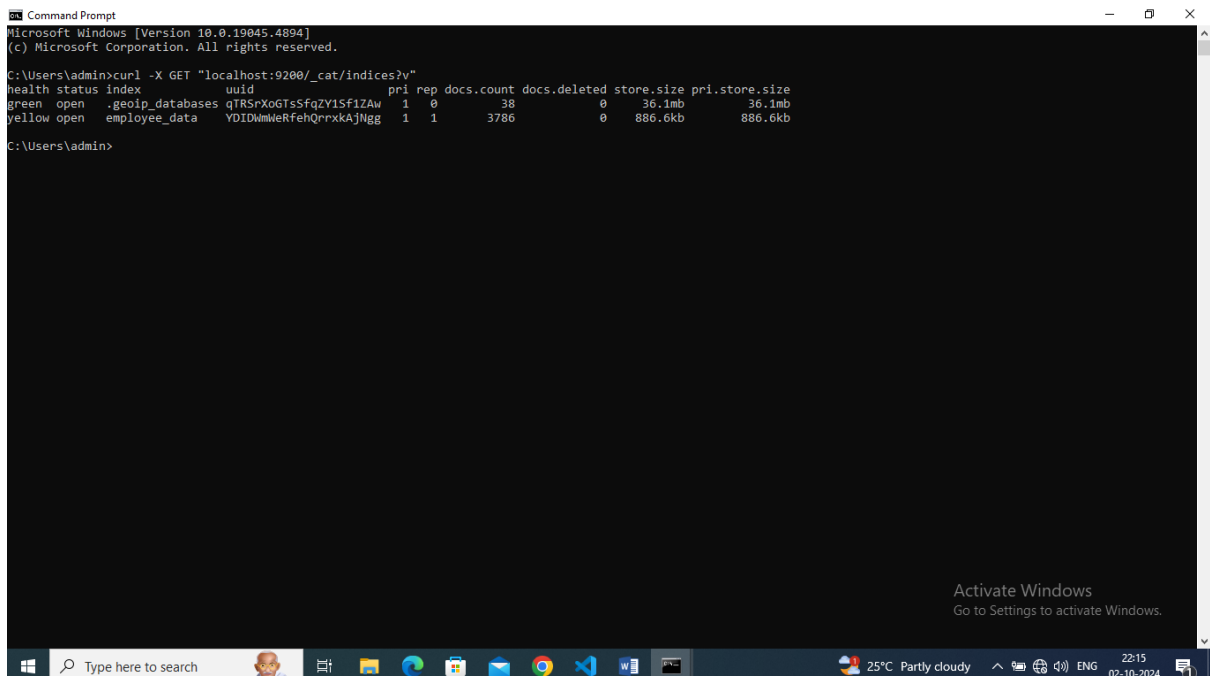
```
es.indices.create(index=index_name, ignore=400)
```

Index 'employee_data' created.

3.b) show output in the Command prompt:

Use following Command to get the o/p of create_index in the terminal.

“ curl -X GET "localhost:9200/_cat/indices?v" “



```
Microsoft Windows [Version 10.0.19045.4894]
(c) Microsoft Corporation. All rights reserved.

C:\Users\admin>curl -X GET "localhost:9200/_cat/indices?v"
health status index      uuid                                pri rep docs.count docs.deleted store.size pri.store.size
green open   .geop_databases qT8sPxoGTsSfqZY1Sf1ZAw  1   0       38           0       36.1mb       36.1mb
yellow open   employee_data  YDIDmMeRfehQrrxkAkJNgg  1   1      3786           0       886.6kb       886.6kb

C:\Users\admin>
```

4. Index the employee dataset

Input:

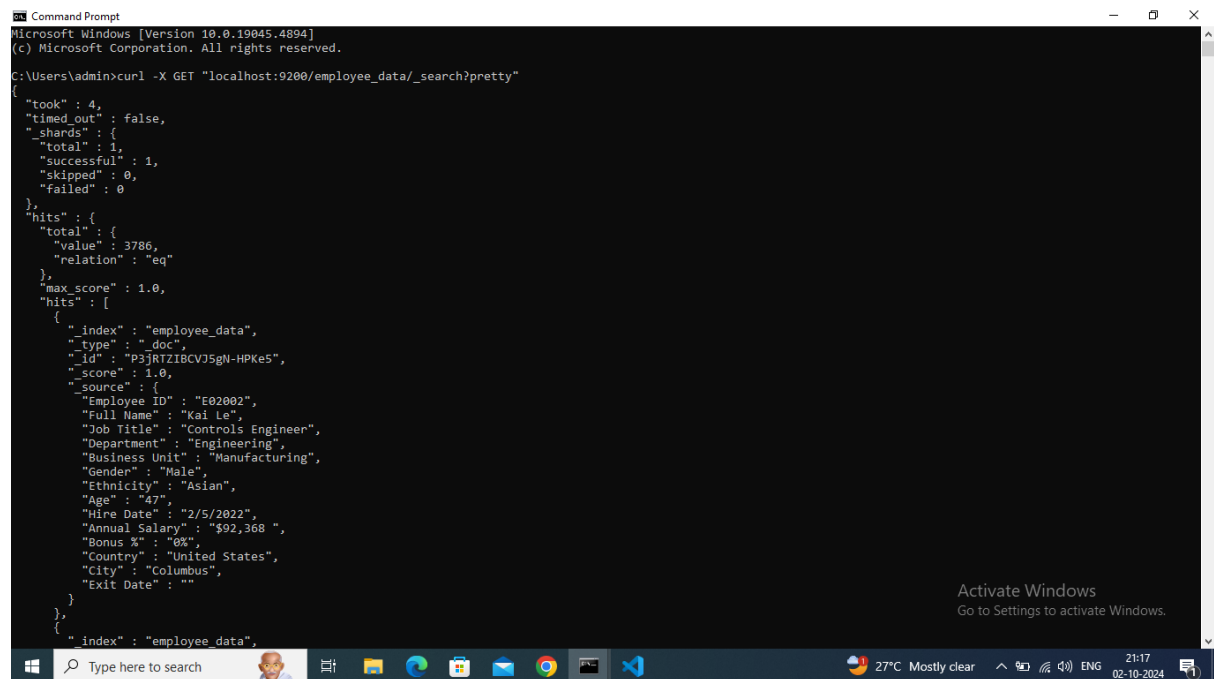
```
import csv
from elasticsearch import Elasticsearch
es = Elasticsearch("http://localhost:9200")
with open('employee_sample_data.csv', mode='r') as file:
    reader = csv.DictReader(file)
    for row in reader:
        es.index(index='employee_data', body=row)
print("Employee data indexed.")
res = es.search(index="employee_data", body={"query": {"match_all": {}}})
```

```
print("Search Results:", res['hits']['hits'])
```

Output:

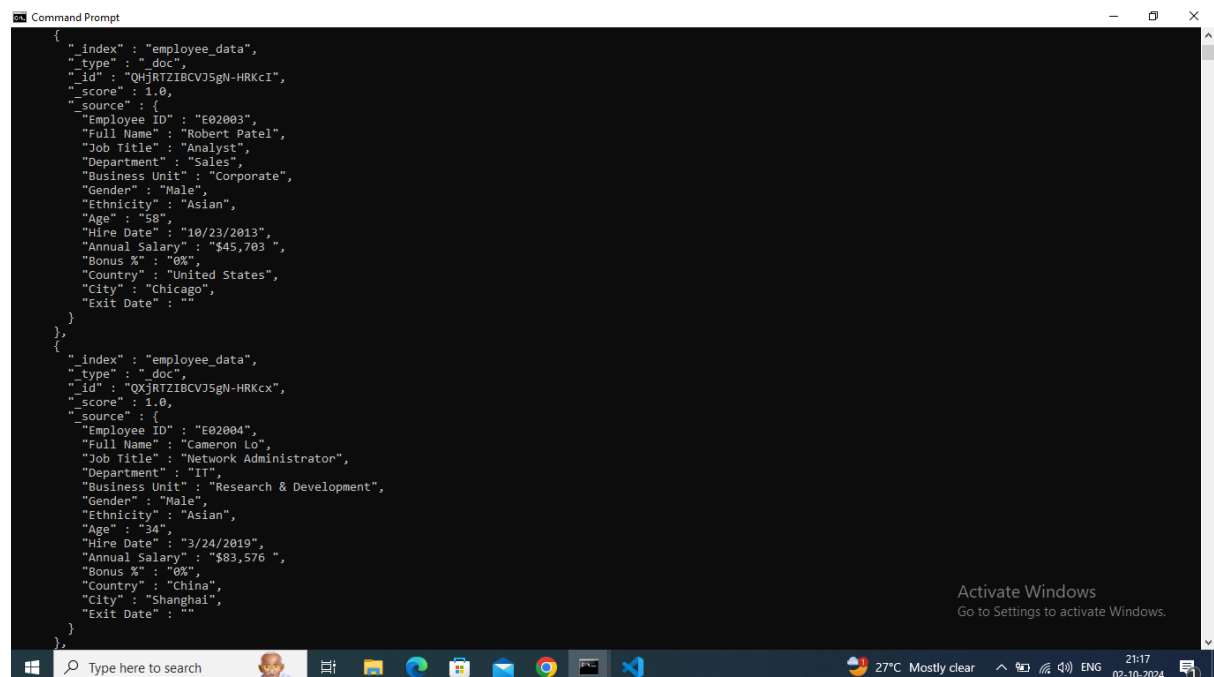
Use following Command to get the o/p of create employee dataset index in the terminal

“ curl -X GET "localhost:9200/employee_data/_search?pretty" “



```
Microsoft Windows [Version 10.0.19045.4894]
(c) Microsoft Corporation. All rights reserved.

C:\Users\admin>curl -X GET "localhost:9200/employee_data/_search?pretty"
{
  "took" : 4,
  "timed_out" : false,
  "_shards" : {
    "total" : 1,
    "successful" : 1,
    "skipped" : 0,
    "failed" : 0
  },
  "hits" : {
    "total" : {
      "value" : 3786,
      "relation" : "eq"
    },
    "max_score" : 1.0,
    "hits" : [
      {
        "_index" : "employee_data",
        "_type" : "doc",
        "_id" : "P3jRTZIBCVJ5gN-HPKe5",
        "_score" : 1.0,
        "_source" : {
          "Employee ID" : "E02002",
          "Full Name" : "Kai Le",
          "Job Title" : "Controls Engineer",
          "Department" : "Engineering",
          "Business Unit" : "Manufacturing",
          "Gender" : "Male",
          "Ethnicity" : "Asian",
          "Age" : "47",
          "Hire Date" : "2/5/2022",
          "Annual Salary" : "$92,368 ",
          "Bonus %" : "0%",
          "Country" : "United States",
          "City" : "Columbus",
          "Exit Date" : ""
        }
      }
    ]
  },
  "_index" : "employee_data",
  "_type" : "doc",
  "_id" : "P3jRTZIBCVJ5gN-HPKe5",
  "_score" : 1.0,
  "_source" : {
    "Employee ID" : "E02002",
    "Full Name" : "Kai Le",
    "Job Title" : "Controls Engineer",
    "Department" : "Engineering",
    "Business Unit" : "Manufacturing",
    "Gender" : "Male",
    "Ethnicity" : "Asian",
    "Age" : "47",
    "Hire Date" : "2/5/2022",
    "Annual Salary" : "$92,368 ",
    "Bonus %" : "0%",
    "Country" : "United States",
    "City" : "Columbus",
    "Exit Date" : ""
  }
}
```



```
{
  "_index" : "employee_data",
  "_type" : "doc",
  "_id" : "QHjRTZIBCVJ5gN-HRkcI",
  "_score" : 1.0,
  "_source" : {
    "Employee ID" : "E02003",
    "Full Name" : "Robert Patel",
    "Job Title" : "Analyst",
    "Department" : "Sales",
    "Business Unit" : "Corporate",
    "Gender" : "Male",
    "Ethnicity" : "Asian",
    "Age" : "58",
    "Hire Date" : "10/23/2013",
    "Annual Salary" : "$45,703 ",
    "Bonus %" : "0%",
    "Country" : "United States",
    "City" : "Chicago",
    "Exit Date" : ""
  }
},
{
  "_index" : "employee_data",
  "_type" : "doc",
  "_id" : "QXjRTZIBCVJ5gN-HRkcX",
  "_score" : 1.0,
  "_source" : {
    "Employee ID" : "E02004",
    "Full Name" : "Cameron Lo",
    "Job Title" : "Network Administrator",
    "Department" : "IT",
    "Business Unit" : "Research & Development",
    "Gender" : "Male",
    "Ethnicity" : "Asian",
    "Age" : "34",
    "Hire Date" : "3/24/2019",
    "Annual Salary" : "$83,576 ",
    "Bonus %" : "0%",
    "Country" : "China",
    "City" : "Shanghai",
    "Exit Date" : ""
  }
},
{
  "_index" : "employee_data",
  "_type" : "doc",
  "_id" : "QYjRTZIBCVJ5gN-HRkcY",
  "_score" : 1.0,
  "_source" : {
    "Employee ID" : "E02005",
    "Full Name" : "David Kim",
    "Job Title" : "Software Engineer",
    "Department" : "Engineering",
    "Business Unit" : "Manufacturing",
    "Gender" : "Male",
    "Ethnicity" : "Korean",
    "Age" : "32",
    "Hire Date" : "1/15/2020",
    "Annual Salary" : "$75,000 ",
    "Bonus %" : "0%",
    "Country" : "United States",
    "City" : "San Jose",
    "Exit Date" : ""
  }
}
```

```
Command Prompt

})
{
  "_index" : "employee_data",
  "_type" : "doc",
  "_id" : "Qn3RTZIBCj5gN-HRKdQ",
  "_score" : 1.0,
  "_source" : {
    "Employee ID" : "E02005",
    "Full Name" : "Harper Castillo",
    "Job Title" : "IT Systems Architect",
    "Department" : "IT",
    "Business Unit" : "Corporate",
    "Gender" : "Female",
    "Ethnicity" : "Latino",
    "Age" : "30",
    "Hire Date" : "4/7/2018",
    "Annual Salary" : "$98,062 ",
    "Bonus %" : "0%",
    "Country" : "United States",
    "City" : "Seattle",
    "Exit Date" : ""
  }
},
{
  "_index" : "employee_data",
  "_type" : "doc",
  "_id" : "Q3jRTZIBCj5gN-HRKdj",
  "_score" : 1.0,
  "_source" : {
    "Employee ID" : "E02006",
    "Full Name" : "Harper Dominguez",
    "Job Title" : "Director",
    "Department" : "Engineering",
    "Business Unit" : "Corporate",
    "Gender" : "Female",
    "Ethnicity" : "Latino",
    "Age" : "42",
    "Hire Date" : "6/18/2005",
    "Annual Salary" : "$175,391 ",
    "Bonus %" : "24%",
    "Country" : "United States",
    "City" : "Austin",
    "Exit Date" : ""
  }
},
}

Activate Windows
Go to Settings to activate Windows.
```

```
Command Prompt

{
  "_index" : "employee_data",
  "_type" : "doc",
  "_id" : "Rn3RTZIBCj5gN-HRKem",
  "_score" : 1.0,
  "_source" : {
    "Employee ID" : "E02009",
    "Full Name" : "Miles Chang",
    "Job Title" : "Analyst II",
    "Department" : "Finance",
    "Business Unit" : "Corporate",
    "Gender" : "Male",
    "Ethnicity" : "Asian",
    "Age" : "62",
    "Hire Date" : "2/19/1999",
    "Annual Salary" : "$69,674 ",
    "Bonus %" : "0%",
    "Country" : "China",
    "City" : "Chengdu",
    "Exit Date" : ""
  }
},
{
  "_index" : "employee_data",
  "_type" : "doc",
  "_id" : "R3jRTZIBCj5gN-HRKe0",
  "_score" : 1.0,
  "_source" : {
    "Employee ID" : "E02010",
    "Full Name" : "Gianna Holmes",
    "Job Title" : "System Administrator ",
    "Department" : "IT",
    "Business Unit" : "Manufacturing",
    "Gender" : "Female",
    "Ethnicity" : "Caucasian",
    "Age" : "38",
    "Hire Date" : "9/9/2011",
    "Annual Salary" : "$97,630 ",
    "Bonus %" : "0%",
    "Country" : "United States",
    "City" : "Seattle",
    "Exit Date" : ""
  }
},
}

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```

```
Command Prompt

    "Country" : "United States",
    "City" : "Seattle",
    "Exit Date" : ""
  }
},
{
  "_index" : "employee_data",
  "_type" : "doc",
  "_id" : "SH3RTZIBCj5gN-HRKfu",
  "_score" : 1.0,
  "_source" : {
    "Employee ID" : "E02011",
    "Full Name" : "Jameson Thomas",
    "Job Title" : "Manager",
    "Department" : "Finance",
    "Business Unit" : "Specialty Products",
    "Gender" : "Male",
    "Ethnicity" : "Caucasian",
    "Age" : "52",
    "Hire Date" : "2/5/2015",
    "Annual Salary" : "$105,879 ",
    "Bonus %" : "10%",
    "Country" : "United States",
    "City" : "Miami",
    "Exit Date" : ""
  }
},
}
}
}

C:\Users\admin>

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Go to Settings to activate Windows.
```