CODE:

```
from elasticsearch import Elasticsearch
from elasticsearch.exceptions import NotFoundError
import csv


es = Elasticsearch("http://localhost:9200/")


def createCollection(p_collection_name):
    if not es.indices.exists(index=p_collection_name):
        es.indices.create(index=p_collection_name)
        print(f"Index {p_collection_name} created.")
    else:
        print(f"Index {p_collection_name} already exists.")


def indexData(p_collection_name, p_exclude_column):


    with open('C://Users//Prithvi//OneDrive//Desktop//Employee.csv', newline='') as csvfile:
        reader = csv.DictReader(csvfile)



        for row in reader:
            if p_exclude_column in row:
                del row[p_exclude_column]
            es.index(index=p_collection_name, document=row)
        print(f"Data indexed into {p_collection_name}, excluding column {p_exclude_column}.")


def searchByColumn(p_collection_name, p_column_name, p_column_value):
    query = {
        "query": {
            "match": {
                p_column_name: p_column_value
            }
        }
    }
    print(f"Running query: {query}")
    result = es.search(index=p_collection_name, body=query)
    print(f"Search results for {p_column_name} = {p_column_value}:")
    for hit in result['hits']['hits']:
        print(hit['_source'])
    if not result['hits']['hits']:
        print("No results found.")

def getEmpCount(p_collection_name):
    count = es.count(index=p_collection_name)['count']
    print(f"Total employees in {p_collection_name}: {count}")
    return count

def checkMapping(p_collection_name):
    mapping = es.indices.get_mapping(index=p_collection_name)
    print(f"Mapping for {p_collection_name}:")
    print(mapping)

def checkEmployeeExists(p_collection_name, p_employee_id):
    query = {
        "query": {
            "term": {
                "Employee ID": p_employee_id
            }
        }
    }

    result = es.search(index=p_collection_name, body=query)
    if result['hits']['total']['value'] > 0:
        print(f"Found {result['hits']['total']['value']} document(s) with Employee ID {p_employee_id}.")
        for hit in result['hits']['hits']:
            print(f"Document ID: {hit['_id']}, Document: {hit['_source']}")
    else:
        print(f"No documents found with Employee ID {p_employee_id}.")
```

```
def deleteByEmployeeId(p_collection_name, p_employee_id):

    checkEmployeeExists(p_collection_name, p_employee_id)

    query = {
        "query": {
            "match": {
                "Employee ID": p_employee_id
            }
        }
    }

    response = es.delete_by_query(index=p_collection_name, body=query)
    print("Delete by query response:", response)

    if response['deleted'] > 0:
        print(f"Deleted {response['deleted']} document(s) with Employee ID {p_employee_id}.")
    else:
        print(f"No documents found with Employee ID {p_employee_id} to delete.")

def getDepFacet(p_collection_name):
    query = {
        "size": 0,
        "aggs": {
            "department_count": {
                "terms": {
                    "field": "Department.keyword"
                }
            }
        }
    }
    result = es.search(index=p_collection_name, body=query)
    print("Department facet results:")
    for bucket in result['aggregations']['department_count']['buckets']:
        print(f"Department: {bucket['key']}, Count: {bucket['doc_count']}")

v_nameCollection = 'hash_dinesh_raghul'
v_phoneCollection = 'hash_4425'

createCollection(v_nameCollection)
createCollection(v_phoneCollection)

getEmpCount(v_nameCollection)

indexData(v_nameCollection, 'Department')
indexData(v_phoneCollection, 'Gender')

checkMapping(v_nameCollection)
deleteByEmployeeId(v_nameCollection, 'E02003')

getEmpCount(v_nameCollection)

searchByColumn(v_nameCollection, 'Department', 'IT')
searchByColumn(v_nameCollection, 'Gender', 'Male')
searchByColumn(v_phoneCollection, 'Department', 'IT')

getDepFacet(v_nameCollection)
getDepFacet(v_phoneCollection)
```

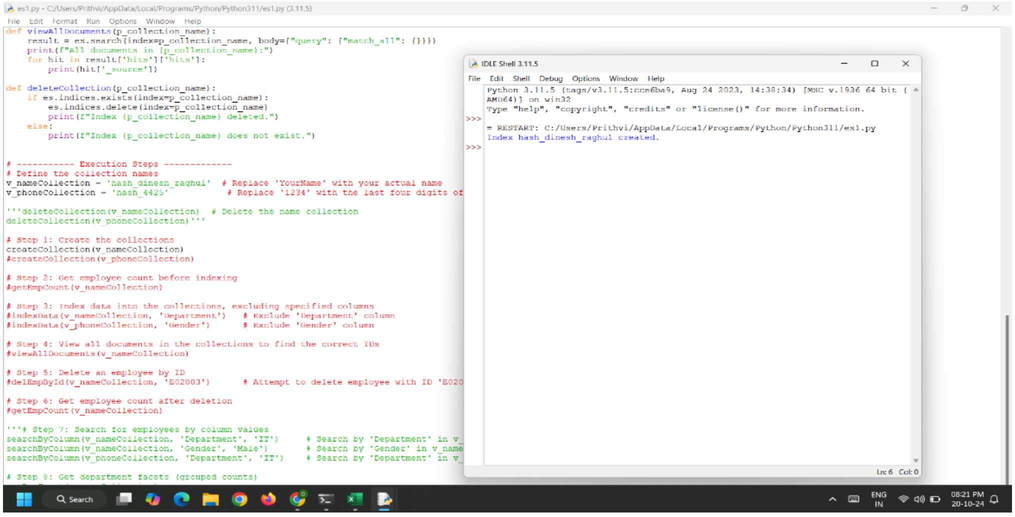
VARIABLE NAME:

v_nameCollection = ‘hash_dinesh_raghul’

v_phoneCollection = ‘hash_4425’

OUTPUT SCREENSHOTS:

1.createCollection(v_nameCollection)



```
def viewAllDocuments(p_collection_name):
    result = es.search(index=p_collection_name, body={"query": {"match_all": {}}})
    print(f"All documents in {p_collection_name}:")
    for hit in result['hits']['hits']:
        print(hit['_source'])

def deleteCollection(p_collection_name):
    if es.indices.exists(index=p_collection_name):
        es.indices.delete(index=p_collection_name)
        print(f"Index {p_collection_name} deleted.")
    else:
        print(f"Index {p_collection_name} does not exist.")


# ----------- Execution Steps -------------
# Define the collection names
v_nameCollection = 'hash_dinesh_raghul'  # Replace 'YourName' with your actual name
v_phoneCollection = 'hash_4425'           # Replace '1234' with the last four digits of

'''deleteCollection(v_nameCollection)  # Delete the name collection
deleteCollection(v_phoneCollection)'''

# Step 1: Create the collections
createCollection(v_nameCollection)
#createCollection(v_phoneCollection)

# Step 2: Get employee count before indexing
#getEmpCount(v_nameCollection)

# Step 3: Index data into the collections, excluding specified columns
#indexData(v_nameCollection, 'Department')   # Exclude 'Department' column
#indexData(v_phoneCollection, 'Gender')      # Exclude 'Gender' column

# Step 4: View all documents in the collections to find the correct IDs
#viewAllDocuments(v_nameCollection)

# Step 5: Delete an employee by ID
#delEmpById(v_nameCollection, 'E02003')      # Attempt to delete employee with ID 'E020

# Step 6: Get employee count after deletion
#getEmpCount(v_nameCollection)

'''# Step 7: Search for employees by column values
searchByColumn(v_nameCollection, 'Department', 'IT')     # Search by 'Department' in v_
searchByColumn(v_nameCollection, 'Gender', 'Male')       # Search by 'Gender' in v_name
searchByColumn(v_phoneCollection, 'Department', 'IT')    # Search by 'Department' in v_

# Step 8: Get department facets (grouped counts)
```

```
Python 3.11.5 (tags/v3.11.5:cce6ba9, Aug 24 2023, 14:38:34) [MSC v.1936 64 bit (
AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: C:/Users/Prithvi/AppData/Local/Programs/Python/Python311/es1.py
Index hash_dinesh_raghul created.
>>>
```

es1.py - C:/Users/Prithvi/AppData/Local/Programs/Python/Python311/es1.py (3.11.5)
File Edit Format Run Options Window Help
IDLE Shell 3.11.5
File Edit Shell Debug Options Window Help
Ln: 6 Col: 0
Search
ENG IN
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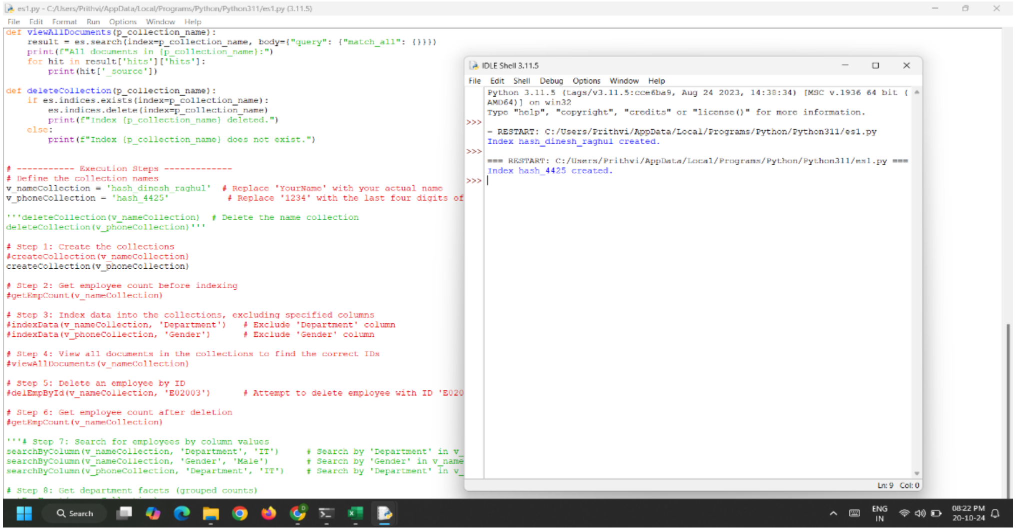
2. createCollection(v_phoneCollection)



```
def viewAllDocuments(p_collection_name):
    result = es.search(index=p_collection_name, body={"query": {"match_all": {}}})
    print(f"All documents in {p_collection_name}:")
    for hit in result['hits']['hits']:
        print(hit['_source'])

def deleteCollection(p_collection_name):
    if es.indices.exists(index=p_collection_name):
        es.indices.delete(index=p_collection_name)
        print(f"Index {p_collection_name} deleted.")
    else:
        print(f"Index {p_collection_name} does not exist.")


# ----------- Execution Steps -------------
# Define the collection names
v_nameCollection = 'hash_dinesh_raghul'  # Replace 'YourName' with your actual name
v_phoneCollection = 'hash_4425'           # Replace '1234' with the last four digits of

'''deleteCollection(v_nameCollection)  # Delete the name collection
deleteCollection(v_phoneCollection)'''

# Step 1: Create the collections
#createCollection(v_nameCollection)
createCollection(v_phoneCollection)

# Step 2: Get employee count before indexing
#getEmpCount(v_nameCollection)

# Step 3: Index data into the collections, excluding specified columns
#indexData(v_nameCollection, 'Department')   # Exclude 'Department' column
#indexData(v_phoneCollection, 'Gender')      # Exclude 'Gender' column

# Step 4: View all documents in the collections to find the correct IDs
#viewAllDocuments(v_nameCollection)

# Step 5: Delete an employee by ID
#delEmpById(v_nameCollection, 'E02003')      # Attempt to delete employee with ID 'E020

# Step 6: Get employee count after deletion
#getEmpCount(v_nameCollection)

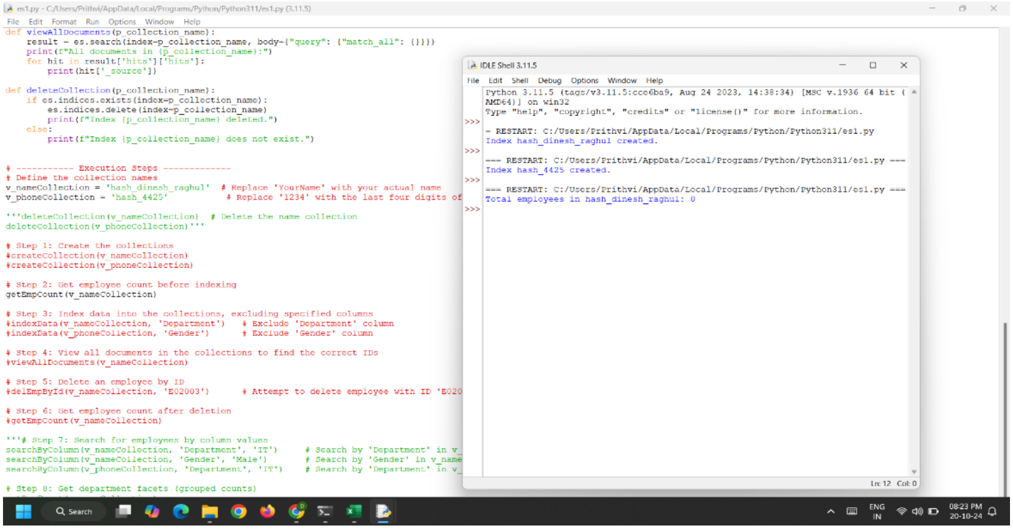
'''# Step 7: Search for employees by column values
searchByColumn(v_nameCollection, 'Department', 'IT')     # Search by 'Department' in v_
searchByColumn(v_nameCollection, 'Gender', 'Male')       # Search by 'Gender' in v_name
searchByColumn(v_phoneCollection, 'Department', 'IT')    # Search by 'Department' in v_

# Step 8: Get department facets (grouped counts)
```

```
Python 3.11.5 (tags/v3.11.5:cce6ba9, Aug 24 2023, 14:38:34) [MSC v.1936 64 bit (
AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: C:/Users/Prithvi/AppData/Local/Programs/Python/Python311/es1.py
Index hash_dinesh_raghul created.
>>>
=== RESTART: C:/Users/Prithvi/AppData/Local/Programs/Python/Python311/es1.py ===
Index hash_4425 created.
>>>
```

es1.py - C:/Users/Prithvi/AppData/Local/Programs/Python/Python311/es1.py (3.11.5)
File Edit Format Run Options Window Help
IDLE Shell 3.11.5
File Edit Shell Debug Options Window Help
Ln: 9 Col: 0
Search
ENG IN
08:22 PM 20-10-24

3. getEmpCount(v_nameCollection)



```
def viewAllDocuments(p_collection_name):
    result = es.search(index=p_collection_name, body={"query": {"match_all": {}}})
    print(f"All documents in {p_collection_name}:")
    for hit in result['hits']['hits']:
        print(hit['_source'])

def deleteCollection(p_collection_name):
    if es.indices.exists(index=p_collection_name):
        es.indices.delete(index=p_collection_name)
        print(f"Index {p_collection_name} deleted.")
    else:
        print(f"Index {p_collection_name} does not exist.")


# ----------- Execution Steps -------------
# Define the collection names
v_nameCollection = 'hash_dinesh_raghul'  # Replace 'YourName' with your actual name
v_phoneCollection = 'hash_4425'           # Replace '1234' with the last four digits of

'''deleteCollection(v_nameCollection)  # Delete the name collection
deleteCollection(v_phoneCollection)'''

# Step 1: Create the collections
#createCollection(v_nameCollection)
#createCollection(v_phoneCollection)

# Step 2: Get employee count before indexing
getEmpCount(v_nameCollection)

# Step 3: Index data into the collections, excluding specified columns
#indexData(v_nameCollection, 'Department')   # Exclude 'Department' column
#indexData(v_phoneCollection, 'Gender')      # Exclude 'Gender' column

# Step 4: View all documents in the collections to find the correct IDs
#viewAllDocuments(v_nameCollection)

# Step 5: Delete an employee by ID
#delEmpById(v_nameCollection, 'E02003')      # Attempt to delete employee with ID 'E020

# Step 6: Get employee count after deletion
#getEmpCount(v_nameCollection)

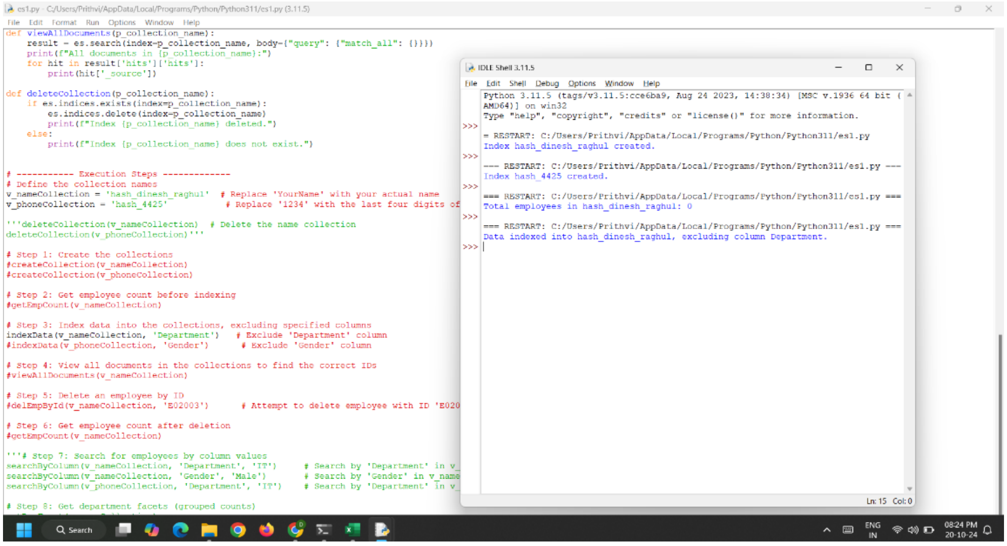
'''# Step 7: Search for employees by column values
searchByColumn(v_nameCollection, 'Department', 'IT')     # Search by 'Department' in v_
searchByColumn(v_nameCollection, 'Gender', 'Male')       # Search by 'Gender' in v_name
searchByColumn(v_phoneCollection, 'Department', 'IT')    # Search by 'Department' in v_

# Step 8: Get department facets (grouped counts)
```

```
Python 3.11.5 (tags/v3.11.5:cce6ba9, Aug 24 2023, 14:38:34) [MSC v.1936 64 bit (
AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: C:/Users/Prithvi/AppData/Local/Programs/Python/Python311/es1.py
Index hash_dinesh_raghul created.
>>>
=== RESTART: C:/Users/Prithvi/AppData/Local/Programs/Python/Python311/es1.py ===
Index hash_4425 created.
>>>
=== RESTART: C:/Users/Prithvi/AppData/Local/Programs/Python/Python311/es1.py ===
Total employees in hash_dinesh_raghul: 0
>>>
```

es1.py - C:/Users/Prithvi/AppData/Local/Programs/Python/Python311/es1.py (3.11.5)
File Edit Format Run Options Window Help
IDLE Shell 3.11.5
File Edit Shell Debug Options Window Help
Ln: 12 Col: 0
Search
ENG IN
08:23 PM 20-10-24

4. indexData(v_nameCollection, 'Department')


es1.py - C:/Users/Prithvi/AppData/Local/Programs/Python/Python311/es1.py (3.11.5)
File Edit Format Run Options Window Help
IDLE Shell 3.11.5
File Edit Shell Debug Options Window Help
Ln: 15 Col: 0
Search
ENG IN
08:24 PM 20-10-24

```
def viewAllDocuments(p_collection_name):
    result = es.search(index=p_collection_name, body={"query": {"match_all": {}}})
    print(f"All documents in {p_collection_name}:")
    for hit in result['hits']['hits']:
        print(hit['_source'])

def deleteCollection(p_collection_name):
    if es.indices.exists(index=p_collection_name):
        es.indices.delete(index=p_collection_name)
        print(f"Index {p_collection_name} deleted.")
    else:
        print(f"Index {p_collection_name} does not exist.")


# ----------- Execution Steps -------------
# Define the collection names
v_nameCollection = 'hash_dinesh_raghul'  # Replace 'YourName' with your actual name
v_phoneCollection = 'hash_4425'           # Replace '1234' with the last four digits of

'''deleteCollection(v_nameCollection)  # Delete the name collection
deleteCollection(v_phoneCollection)'''

# Step 1: Create the collections
#createCollection(v_nameCollection)
#createCollection(v_phoneCollection)

# Step 2: Get employee count before indexing
#getEmpCount(v_nameCollection)

# Step 3: Index data into the collections, excluding specified columns
indexData(v_nameCollection, 'Department')   # Exclude 'Department' column
#indexData(v_phoneCollection, 'Gender')      # Exclude 'Gender' column

# Step 4: View all documents in the collections to find the correct IDs
#viewAllDocuments(v_nameCollection)

# Step 5: Delete an employee by ID
#delEmpById(v_nameCollection, 'E02003')      # Attempt to delete employee with ID 'E020

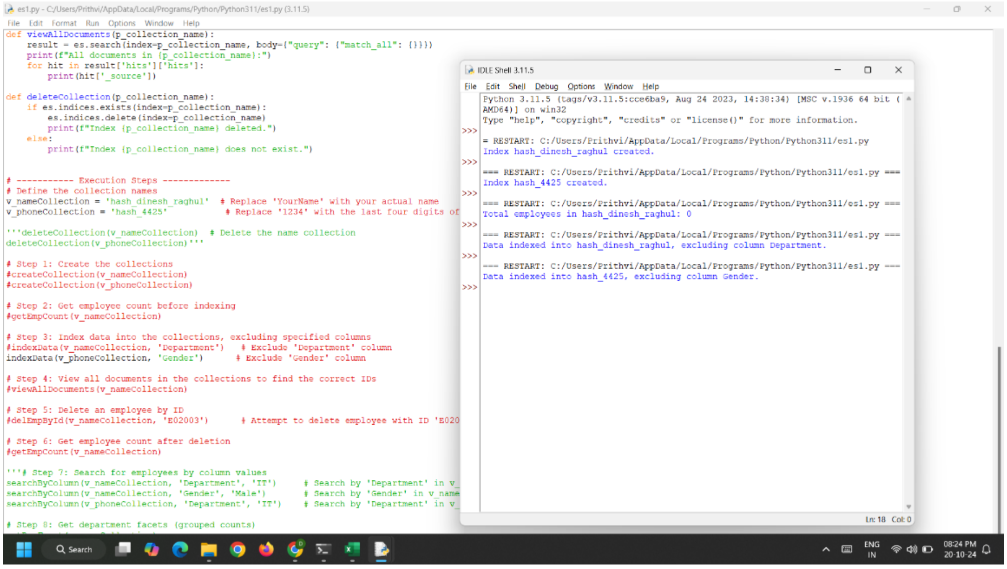
# Step 6: Get employee count after deletion
#getEmpCount(v_nameCollection)

'''# Step 7: Search for employees by column values
searchByColumn(v_nameCollection, 'Department', 'IT')     # Search by 'Department' in v_
searchByColumn(v_nameCollection, 'Gender', 'Male')       # Search by 'Gender' in v_name
searchByColumn(v_phoneCollection, 'Department', 'IT')    # Search by 'Department' in v_

# Step 8: Get department facets (grouped counts)
```

```
Python 3.11.5 (tags/v3.11.5:cce6ba9, Aug 24 2023, 14:38:34) [MSC v.1936 64 bit (
AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: C:/Users/Prithvi/AppData/Local/Programs/Python/Python311/es1.py
Index hash_dinesh_raghul created.
>>>
=== RESTART: C:/Users/Prithvi/AppData/Local/Programs/Python/Python311/es1.py ===
Index hash_4425 created.
>>>
=== RESTART: C:/Users/Prithvi/AppData/Local/Programs/Python/Python311/es1.py ===
Total employees in hash_dinesh_raghul: 0
>>>
=== RESTART: C:/Users/Prithvi/AppData/Local/Programs/Python/Python311/es1.py ===
Data indexed into hash_dinesh_raghul, excluding column Department.
>>> |
```

5. indexData(v_phoneCollection, 'Gender')


es1.py - C:/Users/Prithvi/AppData/Local/Programs/Python/Python311/es1.py (3.11.5)
File Edit Format Run Options Window Help
IDLE Shell 3.11.5
File Edit Shell Debug Options Window Help
Ln: 18 Col: 0
Search
ENG IN
08:24 PM 20-10-24

```
def viewAllDocuments(p_collection_name):
    result = es.search(index=p_collection_name, body={"query": {"match_all": {}}})
    print(f"All documents in {p_collection_name}:")
    for hit in result['hits']['hits']:
        print(hit['_source'])

def deleteCollection(p_collection_name):
    if es.indices.exists(index=p_collection_name):
        es.indices.delete(index=p_collection_name)
        print(f"Index {p_collection_name} deleted.")
    else:
        print(f"Index {p_collection_name} does not exist.")


# ----------- Execution Steps -------------
# Define the collection names
v_nameCollection = 'hash_dinesh_raghul'  # Replace 'YourName' with your actual name
v_phoneCollection = 'hash_4425'           # Replace '1234' with the last four digits of

'''deleteCollection(v_nameCollection)  # Delete the name collection
deleteCollection(v_phoneCollection)'''

# Step 1: Create the collections
#createCollection(v_nameCollection)
#createCollection(v_phoneCollection)

# Step 2: Get employee count before indexing
#getEmpCount(v_nameCollection)

# Step 3: Index data into the collections, excluding specified columns
#indexData(v_nameCollection, 'Department')   # Exclude 'Department' column
indexData(v_phoneCollection, 'Gender')       # Exclude 'Gender' column

# Step 4: View all documents in the collections to find the correct IDs
#viewAllDocuments(v_nameCollection)

# Step 5: Delete an employee by ID
#delEmpById(v_nameCollection, 'E02003')      # Attempt to delete employee with ID 'E020

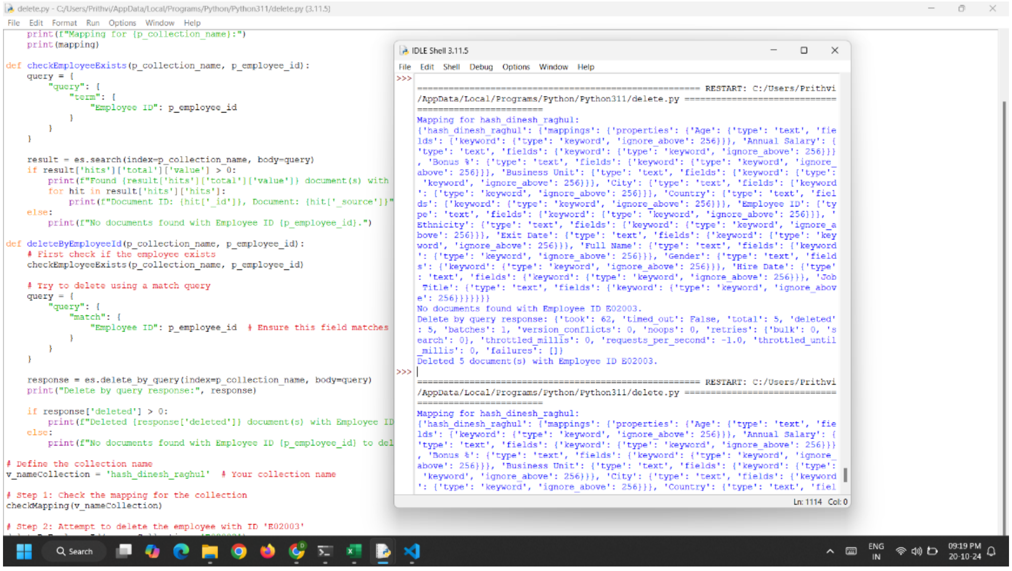
# Step 6: Get employee count after deletion
#getEmpCount(v_nameCollection)

'''# Step 7: Search for employees by column values
searchByColumn(v_nameCollection, 'Department', 'IT')     # Search by 'Department' in v_
searchByColumn(v_nameCollection, 'Gender', 'Male')       # Search by 'Gender' in v_name
searchByColumn(v_phoneCollection, 'Department', 'IT')    # Search by 'Department' in v_

# Step 8: Get department facets (grouped counts)
```

```
Python 3.11.5 (tags/v3.11.5:cce6ba9, Aug 24 2023, 14:38:34) [MSC v.1936 64 bit (
AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: C:/Users/Prithvi/AppData/Local/Programs/Python/Python311/es1.py
Index hash_dinesh_raghul created.
>>>
=== RESTART: C:/Users/Prithvi/AppData/Local/Programs/Python/Python311/es1.py ===
Index hash_4425 created.
>>>
=== RESTART: C:/Users/Prithvi/AppData/Local/Programs/Python/Python311/es1.py ===
Total employees in hash_dinesh_raghul: 0
>>>
=== RESTART: C:/Users/Prithvi/AppData/Local/Programs/Python/Python311/es1.py ===
Data indexed into hash_dinesh_raghul, excluding column Department.
>>>
=== RESTART: C:/Users/Prithvi/AppData/Local/Programs/Python/Python311/es1.py ===
Data indexed into hash_4425, excluding column Gender.
>>>
```

6. deleteByEmployeeId(v_nameCollection, 'E02003')


delete.py - C:/Users/Prithvi/AppData/Local/Programs/Python/Python311/delete.py (3.11.5)
File Edit Format Run Options Window Help
IDLE Shell 3.11.5
File Edit Shell Debug Options Window Help
Ln: 1114 Col: 0
Search
ENG IN
09:19 PM 20-10-24

```
    print(f"Mapping for {p_collection_name}:")
    print(mapping)

def checkEmployeeExists(p_collection_name, p_employee_id):
    query = {
        "query": {
            "term": {
                "Employee ID": p_employee_id
            }
        }
    }

    result = es.search(index=p_collection_name, body=query)
    if result['hits']['total']['value'] > 0:
        print(f"Found {result['hits']['total']['value']} document(s) with
        for hit in result['hits']['hits']:
            print(f"Document ID: {hit['_id']}, Document: {hit['_source']}"
    else:
        print(f"No documents found with Employee ID {p_employee_id}.")

def deleteByEmployeeId(p_collection_name, p_employee_id):
    # First check if the employee exists
    checkEmployeeExists(p_collection_name, p_employee_id)

    # Try to delete using a match query
    query = {
        "query": {
            "match": {
                "Employee ID": p_employee_id  # Ensure this field matches
            }
        }
    }

    response = es.delete_by_query(index=p_collection_name, body=query)
    print("Delete by query response:", response)

    if response['deleted'] > 0:
        print(f"Deleted {response['deleted']} document(s) with Employee ID
    else:
        print(f"No documents found with Employee ID {p_employee_id} to del

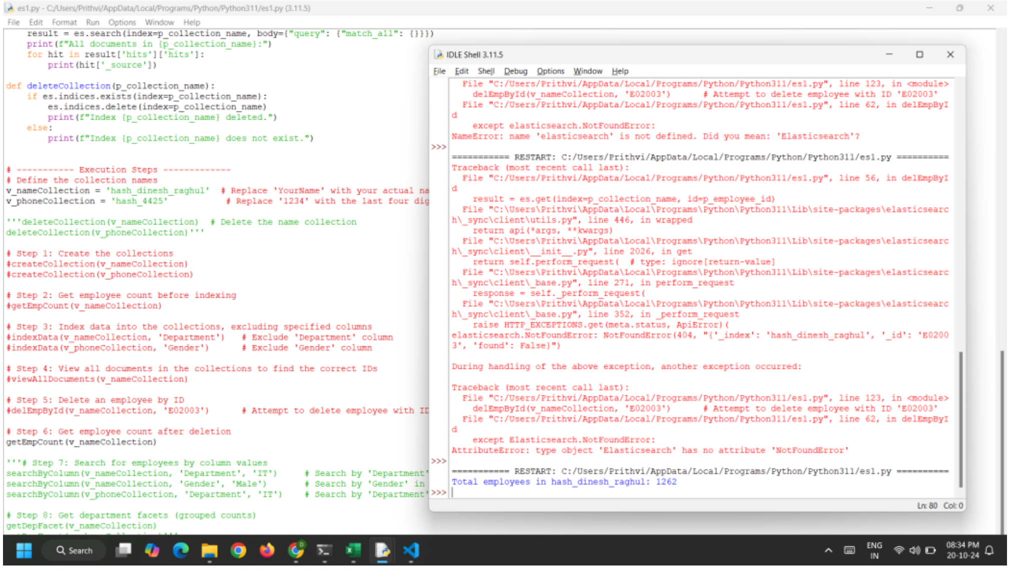
# Define the collection name
v_nameCollection = 'hash_dinesh_raghul'  # Your collection name

# Step 1: Check the mapping for the collection
checkMapping(v_nameCollection)

# Step 2: Attempt to delete the employee with ID 'E02003'
```

```
>>>
=========================================================== RESTART: C:/Users/Prithvi
/AppData/Local/Programs/Python/Python311/delete.py ==============================
========================
Mapping for hash_dinesh_raghul:
{'hash_dinesh_raghul': {'mappings': {'properties': {'Age': {'type': 'text', 'fie
lds': {'keyword': {'type': 'keyword', 'ignore_above': 256}}}, 'Annual Salary': {
'type': 'text', 'fields': {'keyword': {'type': 'keyword', 'ignore_above': 256}}}
, 'Bonus %': {'type': 'text', 'fields': {'keyword': {'type': 'keyword', 'ignore_
above': 256}}}, 'Business Unit': {'type': 'text', 'fields': {'keyword': {'type':
 'keyword', 'ignore_above': 256}}}, 'City': {'type': 'text', 'fields': {'keyword
': {'type': 'keyword', 'ignore_above': 256}}}, 'Country': {'type': 'text', 'fiel
ds': {'keyword': {'type': 'keyword', 'ignore_above': 256}}}, 'Employee ID': {'ty
pe': 'text', 'fields': {'keyword': {'type': 'keyword', 'ignore_above': 256}}}, '
Ethnicity': {'type': 'text', 'fields': {'keyword': {'type': 'keyword', 'ignore_a
bove': 256}}}, 'Exit Date': {'type': 'text', 'fields': {'keyword': {'type': 'key
word', 'ignore_above': 256}}}, 'Full Name': {'type': 'text', 'fields': {'keyword
': {'type': 'keyword', 'ignore_above': 256}}}, 'Gender': {'type': 'text', 'field
s': {'keyword': {'type': 'keyword', 'ignore_above': 256}}}, 'Hire Date': {'type'
: 'text', 'fields': {'keyword': {'type': 'keyword', 'ignore_above': 256}}}, 'Job
 Title': {'type': 'text', 'fields': {'keyword': {'type': 'keyword', 'ignore_abov
e': 256}}}}}}}
No documents found with Employee ID E02003.
Delete by query response: {'took': 62, 'timed_out': False, 'total': 5, 'deleted'
: 5, 'batches': 1, 'version_conflicts': 0, 'noops': 0, 'retries': {'bulk': 0, 's
earch': 0}, 'throttled_millis': 0, 'requests_per_second': -1.0, 'throttled_until
_millis': 0, 'failures': []}
Deleted 5 document(s) with Employee ID E02003.
>>> |
=========================================================== RESTART: C:/Users/Prithvi
/AppData/Local/Programs/Python/Python311/delete.py ==============================
========================
Mapping for hash_dinesh_raghul:
{'hash_dinesh_raghul': {'mappings': {'properties': {'Age': {'type': 'text', 'fie
lds': {'keyword': {'type': 'keyword', 'ignore_above': 256}}}, 'Annual Salary': {
'type': 'text', 'fields': {'keyword': {'type': 'keyword', 'ignore_above': 256}}}
, 'Bonus %': {'type': 'text', 'fields': {'keyword': {'type': 'keyword', 'ignore_
above': 256}}}, 'Business Unit': {'type': 'text', 'fields': {'keyword': {'type':
 'keyword', 'ignore_above': 256}}}, 'City': {'type': 'text', 'fields': {'keyword
': {'type': 'keyword', 'ignore_above': 256}}}, 'Country': {'type': 'text', 'fiel
```

7. getEmpCount(v_nameCollection)


es1.py - C:/Users/Prithvi/AppData/Local/Programs/Python/Python311/es1.py (3.11.5)
File Edit Format Run Options Window Help

```
    result = es.search(index=p_collection_name, body={"query": {"match_all": {}}})
    print(f"All documents in {p_collection_name}:")
    for hit in result['hits']['hits']:
        print(hit['_source'])

def deleteCollection(p_collection_name):
    if es.indices.exists(index=p_collection_name):
        es.indices.delete(index=p_collection_name)
        print(f"Index {p_collection_name} deleted.")
    else:
        print(f"Index {p_collection_name} does not exist.")


# ----------- Execution Steps -------------
# Define the collection names
v_nameCollection = 'hash_dinesh_raghul'  # Replace 'YourName' with your actual na
v_phoneCollection = 'hash_4425'           # Replace '1234' with the last four dig

'''deleteCollection(v_nameCollection)  # Delete the name collection
deleteCollection(v_phoneCollection)'''

# Step 1: Create the collections
#createCollection(v_nameCollection)
#createCollection(v_phoneCollection)

# Step 2: Get employee count before indexing
#getEmpCount(v_nameCollection)

# Step 3: Index data into the collections, excluding specified columns
#indexData(v_nameCollection, 'Department')   # Exclude 'Department' column
#indexData(v_phoneCollection, 'Gender')      # Exclude 'Gender' column

# Step 4: View all documents in the collections to find the correct IDs
#viewAllDocuments(v_nameCollection)

# Step 5: Delete an employee by ID
#delEmpById(v_nameCollection, 'E02003')      # Attempt to delete employee with ID

# Step 6: Get employee count after deletion
getEmpCount(v_nameCollection)

'''# Step 7: Search for employees by column values
searchByColumn(v_nameCollection, 'Department', 'IT')     # Search by 'Department'
searchByColumn(v_nameCollection, 'Gender', 'Male')       # Search by 'Gender' in
searchByColumn(v_phoneCollection, 'Department', 'IT')    # Search by 'Department'

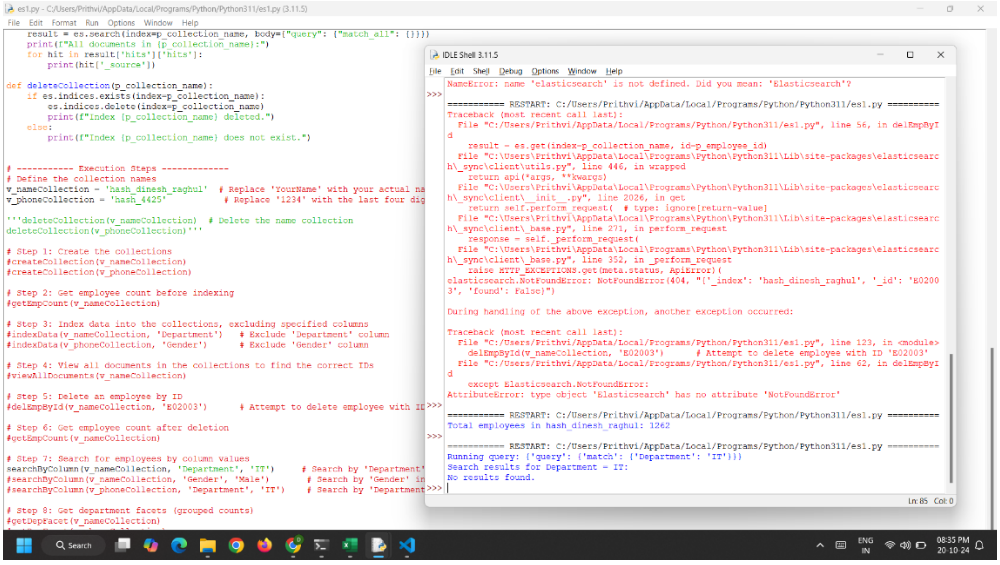
# Step 8: Get department facets (grouped counts)
getDepFacet(v_nameCollection)
```

```
  File "C:/Users/Prithvi/AppData/Local/Programs/Python/Python311/es1.py", line 123, in <module>
    delEmpById(v_nameCollection, 'E02003')      # Attempt to delete employee with ID 'E02003'
  File "C:/Users/Prithvi/AppData/Local/Programs/Python/Python311/es1.py", line 62, in delEmpByI
d
    except elasticsearch.NotFoundError:
NameError: name 'elasticsearch' is not defined. Did you mean: 'Elasticsearch'?
>>> 
=========== RESTART: C:/Users/Prithvi/AppData/Local/Programs/Python/Python311/es1.py ==========
Traceback (most recent call last):
  File "C:/Users/Prithvi/AppData/Local/Programs/Python/Python311/es1.py", line 56, in delEmpByI
d
    result = es.get(index=p_collection_name, id=p_employee_id)
  File "C:\Users\Prithvi\AppData\Local\Programs\Python\Python311\Lib\site-packages\elasticsearc
h\_sync\client\utils.py", line 446, in wrapped
    return api(*args, **kwargs)
  File "C:\Users\Prithvi\AppData\Local\Programs\Python\Python311\Lib\site-packages\elasticsearc
h\_sync\client\__init__.py", line 2026, in get
    return self.perform_request(  # type: ignore[return-value]
  File "C:\Users\Prithvi\AppData\Local\Programs\Python\Python311\Lib\site-packages\elasticsearc
h\_sync\client\_base.py", line 271, in perform_request
    response = self._perform_request(
  File "C:\Users\Prithvi\AppData\Local\Programs\Python\Python311\Lib\site-packages\elasticsearc
h\_sync\client\_base.py", line 352, in _perform_request
    raise HTTP_EXCEPTIONS.get(meta.status, ApiError)(
elasticsearch.NotFoundError: NotFoundError(404, "{'_index': 'hash_dinesh_raghul', '_id': 'E0200
3', 'found': False}")

During handling of the above exception, another exception occurred:

Traceback (most recent call last):
  File "C:/Users/Prithvi/AppData/Local/Programs/Python/Python311/es1.py", line 123, in <module>
    delEmpById(v_nameCollection, 'E02003')      # Attempt to delete employee with ID 'E02003'
  File "C:/Users/Prithvi/AppData/Local/Programs/Python/Python311/es1.py", line 62, in delEmpByI
d
    except Elasticsearch.NotFoundError:
AttributeError: type object 'Elasticsearch' has no attribute 'NotFoundError'
>>> 
=========== RESTART: C:/Users/Prithvi/AppData/Local/Programs/Python/Python311/es1.py ==========
Total employees in hash_dinesh_raghul: 1262
>>> 
```

8. searchByColumn(v_nameCollection, 'Department', 'IT')


es1.py - C:/Users/Prithvi/AppData/Local/Programs/Python/Python311/es1.py (3.11.5)
File Edit Format Run Options Window Help

```
    result = es.search(index=p_collection_name, body={"query": {"match_all": {}}})
    print(f"All documents in {p_collection_name}:")
    for hit in result['hits']['hits']:
        print(hit['_source'])

def deleteCollection(p_collection_name):
    if es.indices.exists(index=p_collection_name):
        es.indices.delete(index=p_collection_name)
        print(f"Index {p_collection_name} deleted.")
    else:
        print(f"Index {p_collection_name} does not exist.")


# ----------- Execution Steps -------------
# Define the collection names
v_nameCollection = 'hash_dinesh_raghul'  # Replace 'YourName' with your actual na
v_phoneCollection = 'hash_4425'           # Replace '1234' with the last four dig

'''deleteCollection(v_nameCollection)  # Delete the name collection
deleteCollection(v_phoneCollection)'''

# Step 1: Create the collections
#createCollection(v_nameCollection)
#createCollection(v_phoneCollection)

# Step 2: Get employee count before indexing
#getEmpCount(v_nameCollection)

# Step 3: Index data into the collections, excluding specified columns
#indexData(v_nameCollection, 'Department')   # Exclude 'Department' column
#indexData(v_phoneCollection, 'Gender')      # Exclude 'Gender' column

# Step 4: View all documents in the collections to find the correct IDs
#viewAllDocuments(v_nameCollection)

# Step 5: Delete an employee by ID
#delEmpById(v_nameCollection, 'E02003')      # Attempt to delete employee with ID

# Step 6: Get employee count after deletion
#getEmpCount(v_nameCollection)

# Step 7: Search for employees by column values
searchByColumn(v_nameCollection, 'Department', 'IT')     # Search by 'Department'
#searchByColumn(v_nameCollection, 'Gender', 'Male')       # Search by 'Gender' in
#searchByColumn(v_phoneCollection, 'Department', 'IT')    # Search by 'Department

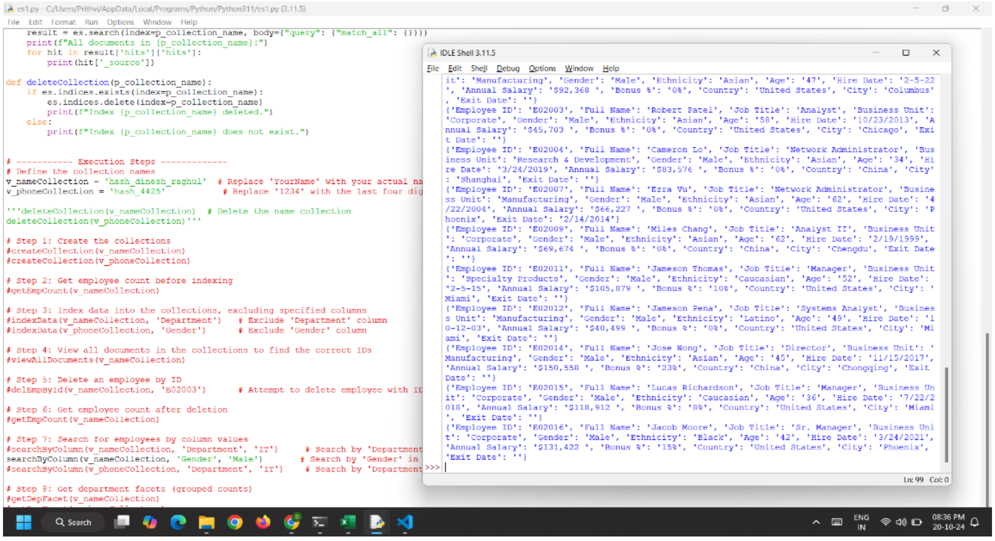
# Step 8: Get department facets (grouped counts)
#getDepFacet(v_nameCollection)
```

```
NameError: name 'elasticsearch' is not defined. Did you mean: 'Elasticsearch'?
>>> 
=========== RESTART: C:/Users/Prithvi/AppData/Local/Programs/Python/Python311/es1.py ==========
Traceback (most recent call last):
  File "C:/Users/Prithvi/AppData/Local/Programs/Python/Python311/es1.py", line 56, in delEmpByI
d
    result = es.get(index=p_collection_name, id=p_employee_id)
  File "C:\Users\Prithvi\AppData\Local\Programs\Python\Python311\Lib\site-packages\elasticsearc
h\_sync\client\utils.py", line 446, in wrapped
    return api(*args, **kwargs)
  File "C:\Users\Prithvi\AppData\Local\Programs\Python\Python311\Lib\site-packages\elasticsearc
h\_sync\client\__init__.py", line 2026, in get
    return self.perform_request(  # type: ignore[return-value]
  File "C:\Users\Prithvi\AppData\Local\Programs\Python\Python311\Lib\site-packages\elasticsearc
h\_sync\client\_base.py", line 271, in perform_request
    response = self._perform_request(
  File "C:\Users\Prithvi\AppData\Local\Programs\Python\Python311\Lib\site-packages\elasticsearc
h\_sync\client\_base.py", line 352, in _perform_request
    raise HTTP_EXCEPTIONS.get(meta.status, ApiError)(
elasticsearch.NotFoundError: NotFoundError(404, "{'_index': 'hash_dinesh_raghul', '_id': 'E0200
3', 'found': False}")

During handling of the above exception, another exception occurred:

Traceback (most recent call last):
  File "C:/Users/Prithvi/AppData/Local/Programs/Python/Python311/es1.py", line 123, in <module>
    delEmpById(v_nameCollection, 'E02003')      # Attempt to delete employee with ID 'E02003'
  File "C:/Users/Prithvi/AppData/Local/Programs/Python/Python311/es1.py", line 62, in delEmpByI
d
    except Elasticsearch.NotFoundError:
AttributeError: type object 'Elasticsearch' has no attribute 'NotFoundError'
>>> 
=========== RESTART: C:/Users/Prithvi/AppData/Local/Programs/Python/Python311/es1.py ==========
Total employees in hash_dinesh_raghul: 1262
>>> 
=========== RESTART: C:/Users/Prithvi/AppData/Local/Programs/Python/Python311/es1.py ==========
Running query: {'query': {'match': {'Department': 'IT'}}}
Search results for Department = IT:
No results found.
>>> 
```

9. searchByColumn(v_nameCollection, 'Gender', 'Male')


es1.py - C:/Users/Prithvi/AppData/Local/Programs/Python/Python311/es1.py (3.11.5)
File Edit Format Run Options Window Help

```
    result = es.search(index=p_collection_name, body={"query": {"match_all": {}}})
    print(f"All documents in {p_collection_name}:")
    for hit in result['hits']['hits']:
        print(hit['_source'])

def deleteCollection(p_collection_name):
    if es.indices.exists(index=p_collection_name):
        es.indices.delete(index=p_collection_name)
        print(f"Index {p_collection_name} deleted.")
    else:
        print(f"Index {p_collection_name} does not exist.")


# ----------- Execution Steps -------------
# Define the collection names
v_nameCollection = 'hash_dinesh_raghul'  # Replace 'YourName' with your actual na
v_phoneCollection = 'hash_4425'           # Replace '1234' with the last four dig

'''deleteCollection(v_nameCollection)  # Delete the name collection
deleteCollection(v_phoneCollection)'''

# Step 1: Create the collections
#createCollection(v_nameCollection)
#createCollection(v_phoneCollection)

# Step 2: Get employee count before indexing
#getEmpCount(v_nameCollection)

# Step 3: Index data into the collections, excluding specified columns
#indexData(v_nameCollection, 'Department')   # Exclude 'Department' column
#indexData(v_phoneCollection, 'Gender')      # Exclude 'Gender' column

# Step 4: View all documents in the collections to find the correct IDs
#viewAllDocuments(v_nameCollection)

# Step 5: Delete an employee by ID
#delEmpById(v_nameCollection, 'E02003')      # Attempt to delete employee with ID

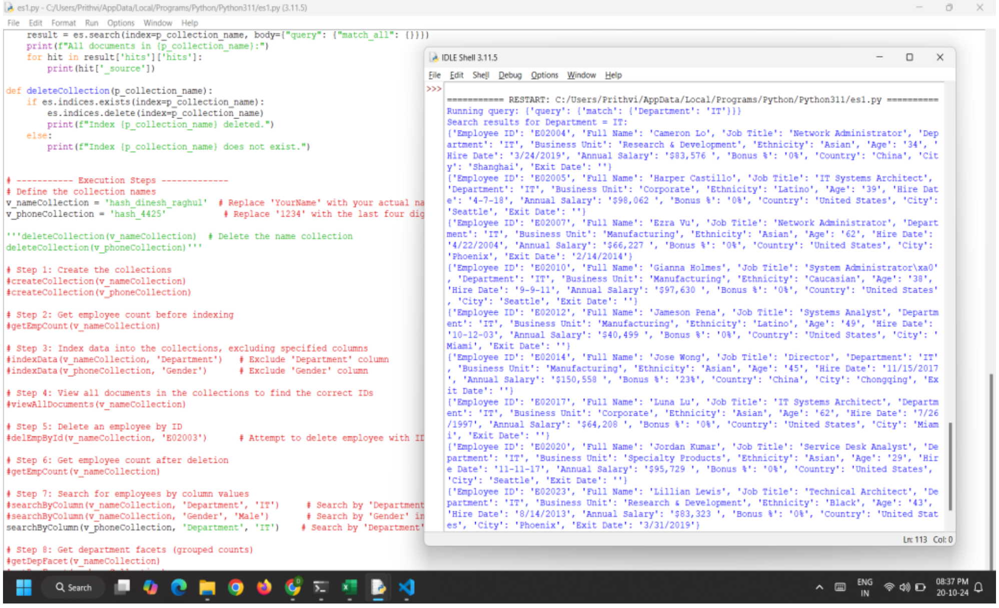
# Step 6: Get employee count after deletion
#getEmpCount(v_nameCollection)

# Step 7: Search for employees by column values
#searchByColumn(v_nameCollection, 'Department', 'IT')     # Search by 'Department
searchByColumn(v_nameCollection, 'Gender', 'Male')       # Search by 'Gender' in
#searchByColumn(v_phoneCollection, 'Department', 'IT')    # Search by 'Department

# Step 8: Get department facets (grouped counts)
#getDepFacet(v_nameCollection)
```

```
it': 'Manufacturing', 'Gender': 'Male', 'Ethnicity': 'Asian', 'Age': '47', 'Hire Date': '2-5-22
', 'Annual Salary': '$92,368 ', 'Bonus %': '0%', 'Country': 'United States', 'City': 'Columbus'
, 'Exit Date': ''}
{'Employee ID': 'E02003', 'Full Name': 'Robert Patel', 'Job Title': 'Analyst', 'Business Unit':
'Corporate', 'Gender': 'Male', 'Ethnicity': 'Asian', 'Age': '58', 'Hire Date': '10/23/2013', 'A
nnual Salary': '$45,703 ', 'Bonus %': '0%', 'Country': 'United States', 'City': 'Chicago', 'Exi
t Date': ''}
{'Employee ID': 'E02004', 'Full Name': 'Cameron Lo', 'Job Title': 'Network Administrator', 'Bus
iness Unit': 'Research & Development', 'Gender': 'Male', 'Ethnicity': 'Asian', 'Age': '34', 'Hi
re Date': '3/24/2019', 'Annual Salary': '$83,576 ', 'Bonus %': '0%', 'Country': 'China', 'City'
: 'Shanghai', 'Exit Date': ''}
{'Employee ID': 'E02007', 'Full Name': 'Ezra Vu', 'Job Title': 'Network Administrator', 'Busine
ss Unit': 'Manufacturing', 'Gender': 'Male', 'Ethnicity': 'Asian', 'Age': '62', 'Hire Date': '4
/22/2004', 'Annual Salary': '$66,227 ', 'Bonus %': '0%', 'Country': 'United States', 'City': 'P
hoenix', 'Exit Date': '2/14/2014'}
{'Employee ID': 'E02009', 'Full Name': 'Miles Chang', 'Job Title': 'Analyst II', '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
': ''}
{'Employee ID': 'E02011', 'Full Name': 'Jameson Thomas', 'Job Title': 'Manager', 'Business Unit
': 'Specialty Products', 'Gender': 'Male', 'Ethnicity': 'Caucasian', 'Age': '52', 'Hire Date':
'2-5-15', 'Annual Salary': '$105,879 ', 'Bonus %': '10%', 'Country': 'United States', 'City': '
Miami', 'Exit Date': ''}
{'Employee ID': 'E02012', 'Full Name': 'Jameson Pena', 'Job Title': 'Systems Analyst', 'Busines
s Unit': 'Manufacturing', 'Gender': 'Male', 'Ethnicity': 'Latino', 'Age': '49', 'Hire Date': '1
0-12-03', 'Annual Salary': '$40,499 ', 'Bonus %': '0%', 'Country': 'United States', 'City': 'Mi
ami', 'Exit Date': ''}
{'Employee ID': 'E02014', 'Full Name': 'Jose Wong', 'Job Title': 'Director', 'Business Unit': '
Manufacturing', 'Gender': 'Male', 'Ethnicity': 'Asian', 'Age': '45', 'Hire Date': '11/15/2017',
'Annual Salary': '$150,558 ', 'Bonus %': '23%', 'Country': 'China', 'City': 'Chongqing', 'Exit
Date': ''}
{'Employee ID': 'E02015', 'Full Name': 'Lucas Richardson', 'Job Title': 'Manager', 'Business Un
it': 'Corporate', 'Gender': 'Male', 'Ethnicity': 'Caucasian', 'Age': '36', 'Hire Date': '7/22/2
018', 'Annual Salary': '$118,912 ', 'Bonus %': '8%', 'Country': 'United States', 'City': 'Miami
', 'Exit Date': ''}
{'Employee ID': 'E02016', 'Full Name': 'Jacob Moore', 'Job Title': 'Sr. Manager', 'Business Uni
t': 'Corporate', 'Gender': 'Male', 'Ethnicity': 'Black', 'Age': '42', 'Hire Date': '3/24/2021',
'Annual Salary': '$131,422 ', 'Bonus %': '15%', 'Country': 'United States', 'City': 'Phoenix',
'Exit Date': ''}
>>> 
```

10. searchByColumn(v_phoneCollection, 'Department', 'IT')


es1.py - C:/Users/Prithvi/AppData/Local/Programs/Python/Python311/es1.py (3.11.5)
File Edit Format Run Options Window Help
IDLE Shell 3.11.5
File Edit Shell Debug Options Window Help
Ln: 113 Col: 0
ENG IN
08:37 PM 20-10-24

```
    result = es.search(index=p_collection_name, body={"query": {"match_all": {}}})
    print(f"All documents in {p_collection_name}:")
    for hit in result['hits']['hits']:
        print(hit['_source'])

def deleteCollection(p_collection_name):
    if es.indices.exists(index=p_collection_name):
        es.indices.delete(index=p_collection_name)
        print(f"Index {p_collection_name} deleted.")
    else:
        print(f"Index {p_collection_name} does not exist.")


# ----------- Execution Steps -------------
# Define the collection names
v_nameCollection = 'hash_dinesh_raghul'  # Replace 'YourName' with your actual na
v_phoneCollection = 'hash_4425'            # Replace '1234' with the last four dig

'''deleteCollection(v_nameCollection)  # Delete the name collection
deleteCollection(v_phoneCollection)'''

# Step 1: Create the collections
#createCollection(v_nameCollection)
#createCollection(v_phoneCollection)

# Step 2: Get employee count before indexing
#getEmpCount(v_nameCollection)

# Step 3: Index data into the collections, excluding specified columns
#indexData(v_nameCollection, 'Department')   # Exclude 'Department' column
#indexData(v_phoneCollection, 'Gender')      # Exclude 'Gender' column

# Step 4: View all documents in the collections to find the correct IDs
#viewAllDocuments(v_nameCollection)

# Step 5: Delete an employee by ID
#delEmpById(v_nameCollection, 'E02003')      # Attempt to delete employee with ID

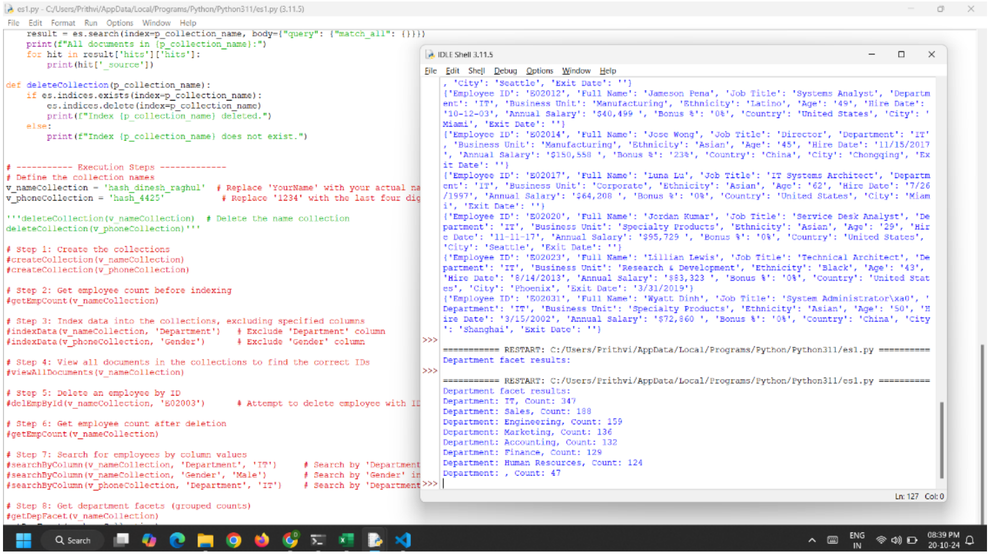
# Step 6: Get employee count after deletion
#getEmpCount(v_nameCollection)

# Step 7: Search for employees by column values
#searchByColumn(v_nameCollection, 'Department', 'IT')     # Search by 'Department
#searchByColumn(v_nameCollection, 'Gender', 'Male')       # Search by 'Gender' in
searchByColumn(v_phoneCollection, 'Department', 'IT')    # Search by 'Department'

# Step 8: Get department facets (grouped counts)
#getDepFacet(v_nameCollection)
```

```
>>>
=========== RESTART: C:/Users/Prithvi/AppData/Local/Programs/Python/Python311/es1.py ==========
Running query: {'query': {'match': {'Department': 'IT'}}}
Search results for Department = IT:
{'Employee ID': 'E02004', 'Full Name': 'Cameron Lo', 'Job Title': 'Network Administrator', 'Dep
artment': 'IT', 'Business Unit': 'Research & Development', 'Ethnicity': 'Asian', 'Age': '34', '
Hire Date': '3/24/2019', 'Annual Salary': '$83,576 ', 'Bonus %': '0%', 'Country': 'China', 'Cit
y': 'Shanghai', 'Exit Date': ''}
{'Employee ID': 'E02005', 'Full Name': 'Harper Castillo', 'Job Title': 'IT Systems Architect',
'Department': 'IT', 'Business Unit': 'Corporate', 'Ethnicity': 'Latino', 'Age': '39', 'Hire Dat
e': '4-7-18', 'Annual Salary': '$98,062 ', 'Bonus %': '0%', 'Country': 'United States', 'City':
'Seattle', 'Exit Date': ''}
{'Employee ID': 'E02007', 'Full Name': 'Ezra Vu', 'Job Title': 'Network Administrator', 'Depart
ment': 'IT', 'Business Unit': 'Manufacturing', 'Ethnicity': 'Asian', 'Age': '62', 'Hire Date':
'4/22/2004', 'Annual Salary': '$66,227 ', 'Bonus %': '0%', 'Country': 'United States', 'City':
'Phoenix', 'Exit Date': '2/14/2014'}
{'Employee ID': 'E02010', 'Full Name': 'Gianna Holmes', 'Job Title': 'System Administrator\xa0'
, 'Department': 'IT', 'Business Unit': 'Manufacturing', 'Ethnicity': 'Caucasian', 'Age': '38',
'Hire Date': '9-9-11', 'Annual Salary': '$97,630 ', 'Bonus %': '0%', 'Country': 'United States'
, 'City': 'Seattle', 'Exit Date': ''}
{'Employee ID': 'E02012', 'Full Name': 'Jameson Pena', 'Job Title': 'Systems Analyst', 'Departm
ent': 'IT', 'Business Unit': 'Manufacturing', 'Ethnicity': 'Latino', 'Age': '49', 'Hire Date':
'10-12-03', 'Annual Salary': '$40,499 ', 'Bonus %': '0%', 'Country': 'United States', 'City': '
Miami', 'Exit Date': ''}
{'Employee ID': 'E02014', 'Full Name': 'Jose Wong', 'Job Title': 'Director', 'Department': 'IT'
, 'Business Unit': 'Manufacturing', 'Ethnicity': 'Asian', 'Age': '45', 'Hire Date': '11/15/2017
', 'Annual Salary': '$150,558 ', 'Bonus %': '23%', 'Country': 'China', 'City': 'Chongqing', 'Ex
it Date': ''}
{'Employee ID': 'E02017', 'Full Name': 'Luna Lu', 'Job Title': 'IT Systems Architect', 'Departm
ent': 'IT', 'Business Unit': 'Corporate', 'Ethnicity': 'Asian', 'Age': '62', 'Hire Date': '7/26
/1997', 'Annual Salary': '$64,208 ', 'Bonus %': '0%', 'Country': 'United States', 'City': 'Miam
i', 'Exit Date': ''}
{'Employee ID': 'E02020', 'Full Name': 'Jordan Kumar', 'Job Title': 'Service Desk Analyst', 'De
partment': 'IT', 'Business Unit': 'Specialty Products', 'Ethnicity': 'Asian', 'Age': '29', 'Hir
e Date': '11-11-17', 'Annual Salary': '$95,729 ', 'Bonus %': '0%', 'Country': 'United States',
'City': 'Seattle', 'Exit Date': ''}
{'Employee ID': 'E02023', 'Full Name': 'Lillian Lewis', 'Job Title': 'Technical Architect', 'De
partment': 'IT', 'Business Unit': 'Research & Development', 'Ethnicity': 'Black', 'Age': '43',
'Hire Date': '8/14/2013', 'Annual Salary': '$83,323 ', 'Bonus %': '0%', 'Country': 'United Stat
es', 'City': 'Phoenix', 'Exit Date': '3/31/2019'}
```

11. getDepFacet(v_nameCollection)


es1.py - C:/Users/Prithvi/AppData/Local/Programs/Python/Python311/es1.py (3.11.5)
File Edit Format Run Options Window Help
IDLE Shell 3.11.5
File Edit Shell Debug Options Window Help
Ln: 127 Col: 0
ENG IN
08:39 PM 20-10-24

```
    result = es.search(index=p_collection_name, body={"query": {"match_all": {}}})
    print(f"All documents in {p_collection_name}:")
    for hit in result['hits']['hits']:
        print(hit['_source'])

def deleteCollection(p_collection_name):
    if es.indices.exists(index=p_collection_name):
        es.indices.delete(index=p_collection_name)
        print(f"Index {p_collection_name} deleted.")
    else:
        print(f"Index {p_collection_name} does not exist.")


# ----------- Execution Steps -------------
# Define the collection names
v_nameCollection = 'hash_dinesh_raghul'  # Replace 'YourName' with your actual na
v_phoneCollection = 'hash_4425'            # Replace '1234' with the last four dig

'''deleteCollection(v_nameCollection)  # Delete the name collection
deleteCollection(v_phoneCollection)'''

# Step 1: Create the collections
#createCollection(v_nameCollection)
#createCollection(v_phoneCollection)

# Step 2: Get employee count before indexing
#getEmpCount(v_nameCollection)

# Step 3: Index data into the collections, excluding specified columns
#indexData(v_nameCollection, 'Department')   # Exclude 'Department' column
#indexData(v_phoneCollection, 'Gender')      # Exclude 'Gender' column

# Step 4: View all documents in the collections to find the correct IDs
#viewAllDocuments(v_nameCollection)

# Step 5: Delete an employee by ID
#delEmpById(v_nameCollection, 'E02003')      # Attempt to delete employee with ID

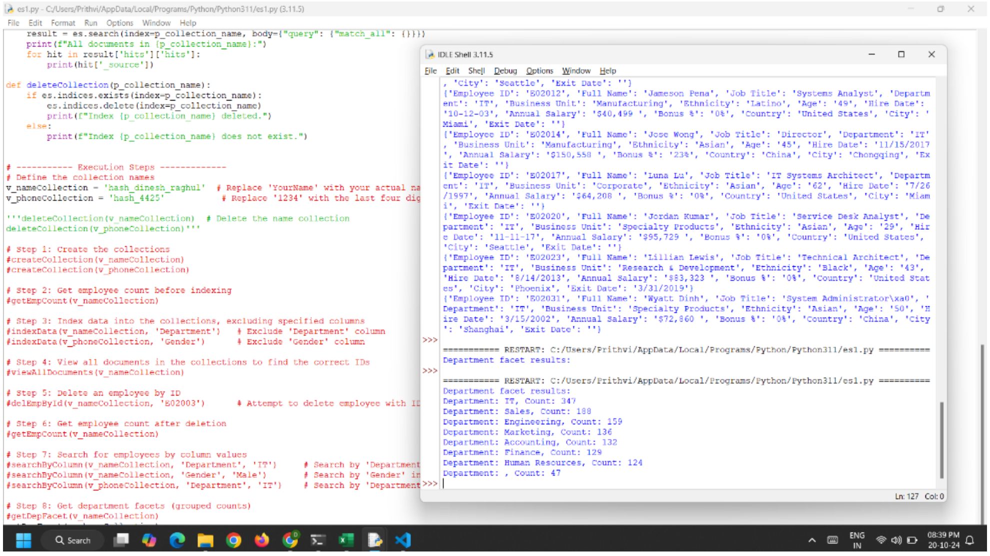
# Step 6: Get employee count after deletion
#getEmpCount(v_nameCollection)

# Step 7: Search for employees by column values
#searchByColumn(v_nameCollection, 'Department', 'IT')     # Search by 'Department
#searchByColumn(v_nameCollection, 'Gender', 'Male')       # Search by 'Gender' in
#searchByColumn(v_phoneCollection, 'Department', 'IT')    # Search by 'Department

# Step 8: Get department facets (grouped counts)
#getDepFacet(v_nameCollection)
```

```
, 'City': 'Seattle', 'Exit Date': ''}
{'Employee ID': 'E02012', 'Full Name': 'Jameson Pena', 'Job Title': 'Systems Analyst', 'Departm
ent': 'IT', 'Business Unit': 'Manufacturing', 'Ethnicity': 'Latino', 'Age': '49', 'Hire Date':
'10-12-03', 'Annual Salary': '$40,499 ', 'Bonus %': '0%', 'Country': 'United States', 'City': '
Miami', 'Exit Date': ''}
{'Employee ID': 'E02014', 'Full Name': 'Jose Wong', 'Job Title': 'Director', 'Department': 'IT'
, 'Business Unit': 'Manufacturing', 'Ethnicity': 'Asian', 'Age': '45', 'Hire Date': '11/15/2017
', 'Annual Salary': '$150,558 ', 'Bonus %': '23%', 'Country': 'China', 'City': 'Chongqing', 'Ex
it Date': ''}
{'Employee ID': 'E02017', 'Full Name': 'Luna Lu', 'Job Title': 'IT Systems Architect', 'Departm
ent': 'IT', 'Business Unit': 'Corporate', 'Ethnicity': 'Asian', 'Age': '62', 'Hire Date': '7/26
/1997', 'Annual Salary': '$64,208 ', 'Bonus %': '0%', 'Country': 'United States', 'City': 'Miam
i', 'Exit Date': ''}
{'Employee ID': 'E02020', 'Full Name': 'Jordan Kumar', 'Job Title': 'Service Desk Analyst', 'De
partment': 'IT', 'Business Unit': 'Specialty Products', 'Ethnicity': 'Asian', 'Age': '29', 'Hir
e Date': '11-11-17', 'Annual Salary': '$95,729 ', 'Bonus %': '0%', 'Country': 'United States',
'City': 'Seattle', 'Exit Date': ''}
{'Employee ID': 'E02023', 'Full Name': 'Lillian Lewis', 'Job Title': 'Technical Architect', 'De
partment': 'IT', 'Business Unit': 'Research & Development', 'Ethnicity': 'Black', 'Age': '43',
'Hire Date': '8/14/2013', 'Annual Salary': '$83,323 ', 'Bonus %': '0%', 'Country': 'United Stat
es', 'City': 'Phoenix', 'Exit Date': '3/31/2019'}
{'Employee ID': 'E02031', 'Full Name': 'Wyatt Dinh', 'Job Title': 'System Administrator\xa0', '
Department': 'IT', 'Business Unit': 'Specialty Products', 'Ethnicity': 'Asian', 'Age': '50', 'H
ire Date': '3/15/2002', 'Annual Salary': '$72,860 ', 'Bonus %': '0%', 'Country': 'China', 'City
': 'Shanghai', 'Exit Date': ''}
>>>
=========== RESTART: C:/Users/Prithvi/AppData/Local/Programs/Python/Python311/es1.py ==========
Department facet results:
>>>
=========== RESTART: C:/Users/Prithvi/AppData/Local/Programs/Python/Python311/es1.py ==========
Department facet results:
Department: IT, Count: 347
Department: Sales, Count: 188
Department: Engineering, Count: 159
Department: Marketing, Count: 136
Department: Accounting, Count: 132
Department: Finance, Count: 129
Department: Human Resources, Count: 124
Department: , Count: 47
>>>
```

12. getDepFacet(v_phoneCollection)


es1.py - C:/Users/Prithvi/AppData/Local/Programs/Python/Python311/es1.py (3.11.5)
File Edit Format Run Options Window Help
IDLE Shell 3.11.5
File Edit Shell Debug Options Window Help
Ln: 127 Col: 0
ENG IN
08:39 PM 20-10-24

```
    result = es.search(index=p_collection_name, body={"query": {"match_all": {}}})
    print(f"All documents in {p_collection_name}:")
    for hit in result['hits']['hits']:
        print(hit['_source'])

def deleteCollection(p_collection_name):
    if es.indices.exists(index=p_collection_name):
        es.indices.delete(index=p_collection_name)
        print(f"Index {p_collection_name} deleted.")
    else:
        print(f"Index {p_collection_name} does not exist.")


# ----------- Execution Steps -------------
# Define the collection names
v_nameCollection = 'hash_dinesh_raghul'  # Replace 'YourName' with your actual na
v_phoneCollection = 'hash_4425'            # Replace '1234' with the last four dig

'''deleteCollection(v_nameCollection)  # Delete the name collection
deleteCollection(v_phoneCollection)'''

# Step 1: Create the collections
#createCollection(v_nameCollection)
#createCollection(v_phoneCollection)

# Step 2: Get employee count before indexing
#getEmpCount(v_nameCollection)

# Step 3: Index data into the collections, excluding specified columns
#indexData(v_nameCollection, 'Department')   # Exclude 'Department' column
#indexData(v_phoneCollection, 'Gender')      # Exclude 'Gender' column

# Step 4: View all documents in the collections to find the correct IDs
#viewAllDocuments(v_nameCollection)

# Step 5: Delete an employee by ID
#delEmpById(v_nameCollection, 'E02003')      # Attempt to delete employee with ID

# Step 6: Get employee count after deletion
#getEmpCount(v_nameCollection)

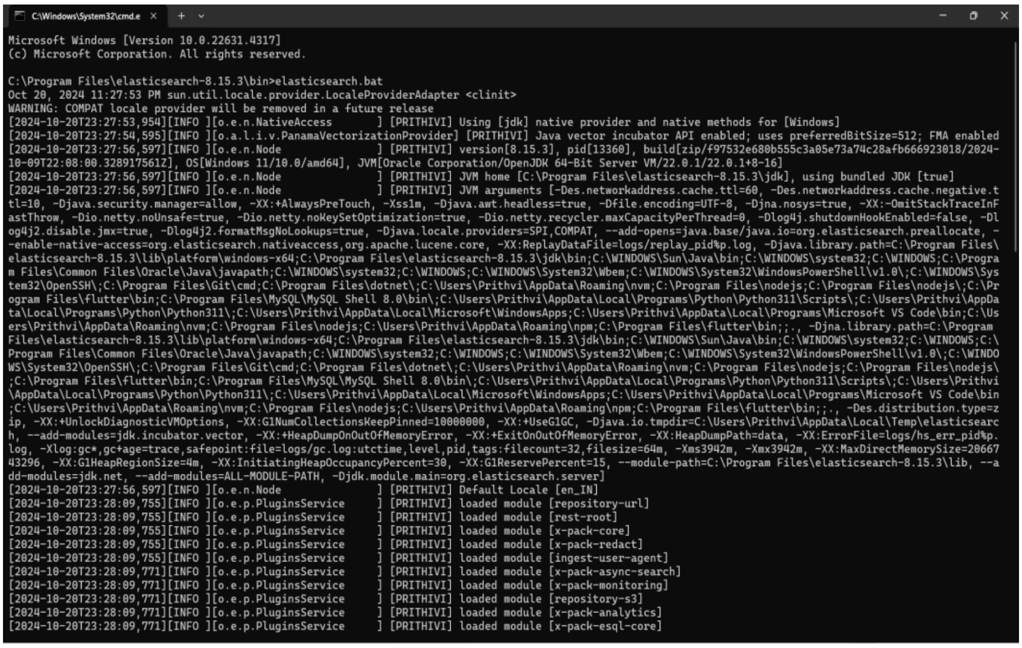
# Step 7: Search for employees by column values
#searchByColumn(v_nameCollection, 'Department', 'IT')     # Search by 'Department
#searchByColumn(v_nameCollection, 'Gender', 'Male')       # Search by 'Gender' in
#searchByColumn(v_phoneCollection, 'Department', 'IT')    # Search by 'Department

# Step 8: Get department facets (grouped counts)
#getDepFacet(v_nameCollection)
```

```
, 'City': 'Seattle', 'Exit Date': ''}
{'Employee ID': 'E02012', 'Full Name': 'Jameson Pena', 'Job Title': 'Systems Analyst', 'Departm
ent': 'IT', 'Business Unit': 'Manufacturing', 'Ethnicity': 'Latino', 'Age': '49', 'Hire Date':
'10-12-03', 'Annual Salary': '$40,499 ', 'Bonus %': '0%', 'Country': 'United States', 'City': '
Miami', 'Exit Date': ''}
{'Employee ID': 'E02014', 'Full Name': 'Jose Wong', 'Job Title': 'Director', 'Department': 'IT'
, 'Business Unit': 'Manufacturing', 'Ethnicity': 'Asian', 'Age': '45', 'Hire Date': '11/15/2017
', 'Annual Salary': '$150,558 ', 'Bonus %': '23%', 'Country': 'China', 'City': 'Chongqing', 'Ex
it Date': ''}
{'Employee ID': 'E02017', 'Full Name': 'Luna Lu', 'Job Title': 'IT Systems Architect', 'Departm
ent': 'IT', 'Business Unit': 'Corporate', 'Ethnicity': 'Asian', 'Age': '62', 'Hire Date': '7/26
/1997', 'Annual Salary': '$64,208 ', 'Bonus %': '0%', 'Country': 'United States', 'City': 'Miam
i', 'Exit Date': ''}
{'Employee ID': 'E02020', 'Full Name': 'Jordan Kumar', 'Job Title': 'Service Desk Analyst', 'De
partment': 'IT', 'Business Unit': 'Specialty Products', 'Ethnicity': 'Asian', 'Age': '29', 'Hir
e Date': '11-11-17', 'Annual Salary': '$95,729 ', 'Bonus %': '0%', 'Country': 'United States',
'City': 'Seattle', 'Exit Date': ''}
{'Employee ID': 'E02023', 'Full Name': 'Lillian Lewis', 'Job Title': 'Technical Architect', 'De
partment': 'IT', 'Business Unit': 'Research & Development', 'Ethnicity': 'Black', 'Age': '43',
'Hire Date': '8/14/2013', 'Annual Salary': '$83,323 ', 'Bonus %': '0%', 'Country': 'United Stat
es', 'City': 'Phoenix', 'Exit Date': '3/31/2019'}
{'Employee ID': 'E02031', 'Full Name': 'Wyatt Dinh', 'Job Title': 'System Administrator\xa0', '
Department': 'IT', 'Business Unit': 'Specialty Products', 'Ethnicity': 'Asian', 'Age': '50', 'H
ire Date': '3/15/2002', 'Annual Salary': '$72,860 ', 'Bonus %': '0%', 'Country': 'China', 'City
': 'Shanghai', 'Exit Date': ''}
>>>
=========== RESTART: C:/Users/Prithvi/AppData/Local/Programs/Python/Python311/es1.py ==========
Department facet results:
>>>
=========== RESTART: C:/Users/Prithvi/AppData/Local/Programs/Python/Python311/es1.py ==========
Department facet results:
Department: IT, Count: 347
Department: Sales, Count: 188
Department: Engineering, Count: 159
Department: Marketing, Count: 136
Department: Accounting, Count: 132
Department: Finance, Count: 129
Department: Human Resources, Count: 124
Department: , Count: 47
>>>
```

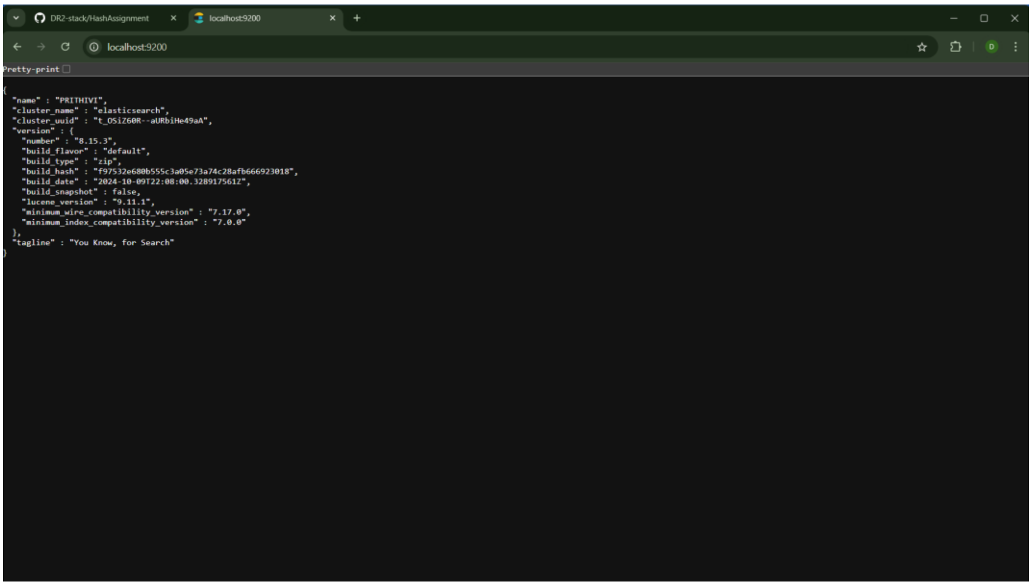
- **Execution:**

  -ElasticSearch:



```
Microsoft Windows [Version 10.0.22631.4317]
(c) Microsoft Corporation. All rights reserved.

C:\Program Files\elasticsearch-8.15.3\bin>elasticsearch.bat
Oct 20, 2024 11:27:53 PM sun.util.locale.provider.LocaleProviderAdapter <clinit>
WARNING: COMPAT locale provider will be removed in a future release
[2024-10-20T23:27:53,954][INFO ][o.e.n.NativeAccess       ] [PRITHIVI] Using [jdk] native provider and native methods for [Windows]
[2024-10-20T23:27:54,595][INFO ][o.a.l.i.v.PanamaVectorizationProvider] [PRITHIVI] Java vector incubator API enabled; uses preferredBitSize=512; FMA enabled
[2024-10-20T23:27:56,597][INFO ][o.e.n.Node               ] [PRITHIVI] version[8.15.3], pid[13360], build[zip/f97532e680b555c3a05e73a74c28afb666923018/2024-
10-09T22:08:00.328917561Z], OS[Windows 11/10.0/amd64], JVM[Oracle Corporation/OpenJDK 64-Bit Server VM/22.0.1/22.0.1+8-16]
[2024-10-20T23:27:56,597][INFO ][o.e.n.Node               ] [PRITHIVI] JVM home [C:\Program Files\elasticsearch-8.15.3\jdk], using bundled JDK [true]
[2024-10-20T23:27:56,597][INFO ][o.e.n.Node               ] [PRITHIVI] JVM arguments [-Des.networkaddress.cache.ttl=60, -Des.networkaddress.cache.negative.t
tl=10, -Djava.security.manager=allow, -XX:+AlwaysPreTouch, -Xss1m, -Djava.awt.headless=true, -Dfile.encoding=UTF-8, -Djna.nosys=true, -XX:-OmitStackTraceInF
astThrow, -Dio.netty.noUnsafe=true, -Dio.netty.noKeySetOptimization=true, -Dio.netty.recycler.maxCapacityPerThread=0, -Dlog4j.shutdownHookEnabled=false, -Dl
og4j2.disable.jmx=true, -Dlog4j2.formatMsgNoLookups=true, -Djava.locale.providers=SPI,COMPAT, --add-opens=java.base/java.io=org.elasticsearch.preallocate, -
-enable-native-access=org.elasticsearch.nativeaccess,org.apache.lucene.core, -XX:ReplayDataFile=logs/replay_pid%p.log, -Djava.library.path=C:\Program Files\
elasticsearch-8.15.3\lib\platform\windows-x64;C:\Program Files\elasticsearch-8.15.3\jdk\bin;C:\WINDOWS\Sun\Java\bin;C:\WINDOWS\system32;C:\WINDOWS;C:\Progra
m Files\Common Files\Oracle\Java\javapath;C:\WINDOWS\system32;C:\WINDOWS;C:\WINDOWS\System32\Wbem;C:\WINDOWS\System32\WindowsPowerShell\v1.0\;C:\WINDOWS\Sys
tem32\OpenSSH\;C:\Program Files\Git\cmd;C:\Program Files\dotnet\;C:\Users\Prithvi\AppData\Roaming\nvm;C:\Program Files\nodejs;C:\Program Files\nodejs\;C:\Pr
ogram Files\flutter\bin;C:\Program Files\MySQL\MySQL Shell 8.0\bin\;C:\Users\Prithvi\AppData\Local\Programs\Python\Python311\Scripts\;C:\Users\Prithvi\AppDa
ta\Local\Programs\Python\Python311\;C:\Users\Prithvi\AppData\Local\Microsoft\WindowsApps;C:\Users\Prithvi\AppData\Local\Programs\Microsoft VS Code\bin;C:\Us
ers\Prithvi\AppData\Roaming\nvm;C:\Program Files\nodejs;C:\Users\Prithvi\AppData\Roaming\npm;C:\Program Files\flutter\bin;;., -Djna.library.path=C:\Program
Files\elasticsearch-8.15.3\lib\platform\windows-x64;C:\Program Files\elasticsearch-8.15.3\jdk\bin;C:\WINDOWS\Sun\Java\bin;C:\WINDOWS\system32;C:\WINDOWS;C:\
Program Files\Common Files\Oracle\Java\javapath;C:\WINDOWS\system32;C:\WINDOWS;C:\WINDOWS\System32\Wbem;C:\WINDOWS\System32\WindowsPowerShell\v1.0\;C:\WINDO
WS\System32\OpenSSH\;C:\Program Files\Git\cmd;C:\Program Files\dotnet\;C:\Users\Prithvi\AppData\Roaming\nvm;C:\Program Files\nodejs;C:\Program Files\nodejs\
;C:\Program Files\flutter\bin;C:\Program Files\MySQL\MySQL Shell 8.0\bin\;C:\Users\Prithvi\AppData\Local\Programs\Python\Python311\Scripts\;C:\Users\Prithvi
\AppData\Local\Programs\Python\Python311\;C:\Users\Prithvi\AppData\Local\Microsoft\WindowsApps;C:\Users\Prithvi\AppData\Local\Programs\Microsoft VS Code\bin
;C:\Users\Prithvi\AppData\Roaming\nvm;C:\Program Files\nodejs;C:\Users\Prithvi\AppData\Roaming\npm;C:\Program Files\flutter\bin;;., -Des.distribution.type=z
ip, -XX:+UnlockDiagnosticVMOptions, -XX:G1NumCollectionsKeepPinned=10000000, -XX:+UseG1GC, -Djava.io.tmpdir=C:\Users\Prithvi\AppData\Local\Temp\elasticsearc
h, --add-modules=jdk.incubator.vector, -XX:+HeapDumpOnOutOfMemoryError, -XX:+ExitOnOutOfMemoryError, -XX:HeapDumpPath=data, -XX:ErrorFile=logs/hs_err_pid%p.
log, -Xlog:gc*,gc+age=trace,safepoint:file=logs/gc.log:utctime,level,pid,tags:filecount=32,filesize=64m, -Xms3942m, -Xmx3942m, -XX:MaxDirectMemorySize=20667
43296, -XX:G1HeapRegionSize=4m, -XX:InitiatingHeapOccupancyPercent=30, -XX:G1ReservePercent=15, --module-path=C:\Program Files\elasticsearch-8.15.3\lib, --a
dd-modules=jdk.net, --add-modules=ALL-MODULE-PATH, -Djdk.module.main=org.elasticsearch.server]
[2024-10-20T23:27:56,597][INFO ][o.e.n.Node               ] [PRITHIVI] Default Locale [en_IN]
[2024-10-20T23:28:09,755][INFO ][o.e.p.PluginsService     ] [PRITHIVI] loaded module [repository-url]
[2024-10-20T23:28:09,755][INFO ][o.e.p.PluginsService     ] [PRITHIVI] loaded module [rest-root]
[2024-10-20T23:28:09,755][INFO ][o.e.p.PluginsService     ] [PRITHIVI] loaded module [x-pack-core]
[2024-10-20T23:28:09,755][INFO ][o.e.p.PluginsService     ] [PRITHIVI] loaded module [x-pack-redact]
[2024-10-20T23:28:09,755][INFO ][o.e.p.PluginsService     ] [PRITHIVI] loaded module [ingest-user-agent]
[2024-10-20T23:28:09,771][INFO ][o.e.p.PluginsService     ] [PRITHIVI] loaded module [x-pack-async-search]
[2024-10-20T23:28:09,771][INFO ][o.e.p.PluginsService     ] [PRITHIVI] loaded module [x-pack-monitoring]
[2024-10-20T23:28:09,771][INFO ][o.e.p.PluginsService     ] [PRITHIVI] loaded module [repository-s3]
[2024-10-20T23:28:09,771][INFO ][o.e.p.PluginsService     ] [PRITHIVI] loaded module [x-pack-analytics]
[2024-10-20T23:28:09,771][INFO ][o.e.p.PluginsService     ] [PRITHIVI] loaded module [x-pack-esql-core]
```



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{
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  "cluster_name" : "elasticsearch",
  "cluster_uuid" : "t_OSiZ60R--aURbiHe49aA",
  "version" : {
    "number" : "8.15.3",
    "build_flavor" : "default",
    "build_type" : "zip",
    "build_hash" : "f97532e680b555c3a05e73a74c28afb666923018",
    "build_date" : "2024-10-09T22:08:00.328917561Z",
    "build_snapshot" : false,
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    "minimum_wire_compatibility_version" : "7.17.0",
    "minimum_index_compatibility_version" : "7.0.0"
  },
  "tagline" : "You Know, for Search"
}
```