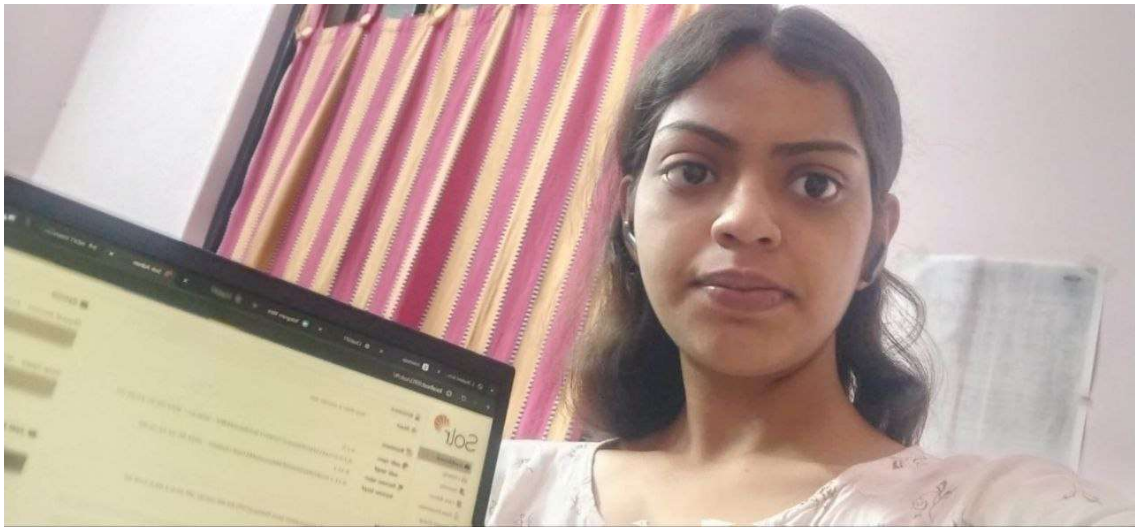
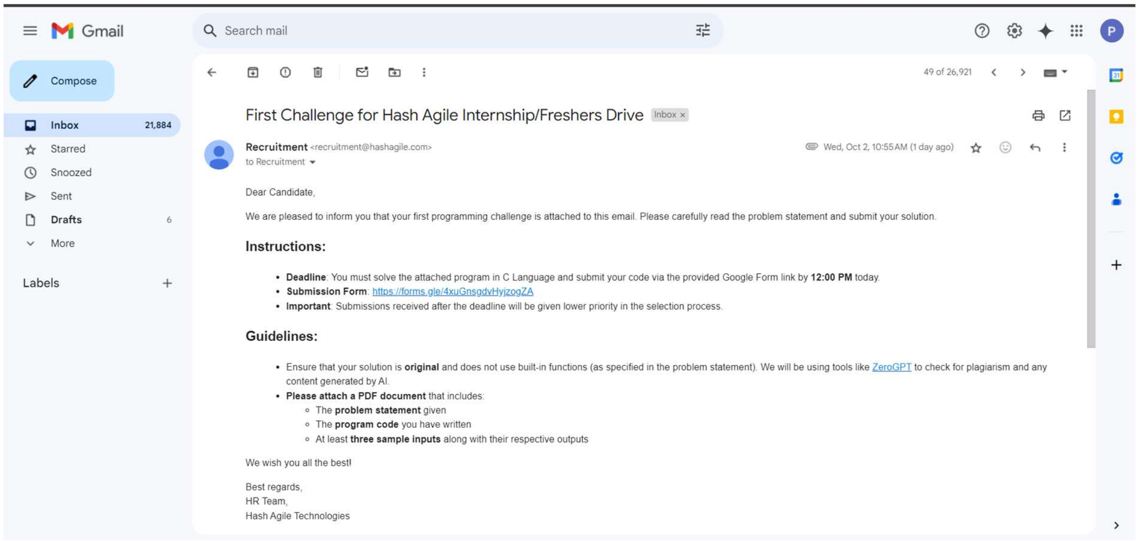
Submission:+

- Full Name: **Poulomi Bhattachrya**
- **Emai: poulomibhattacharya03@gmail.com**
- **Selfie:**



- **First Task Email Screenshot:**



First Challenge for Hash Agile Internship/Freshers Drive

Recruitment <recruitment@hashagile.com>
to Recruitment

Wed, Oct 2, 10:55 AM (1 day ago)

Dear Candidate,

We are pleased to inform you that your first programming challenge is attached to this email. Please carefully read the problem statement and submit your solution.

Instructions:

- **Deadline**: You must solve the attached program in C Language and submit your code via the provided Google Form link by **12:00 PM** today.
- **Submission Form**: https://forms.gle/4xuGnsgdvHyjzogZA
- **Important**: Submissions received after the deadline will be given lower priority in the selection process.

Guidelines:

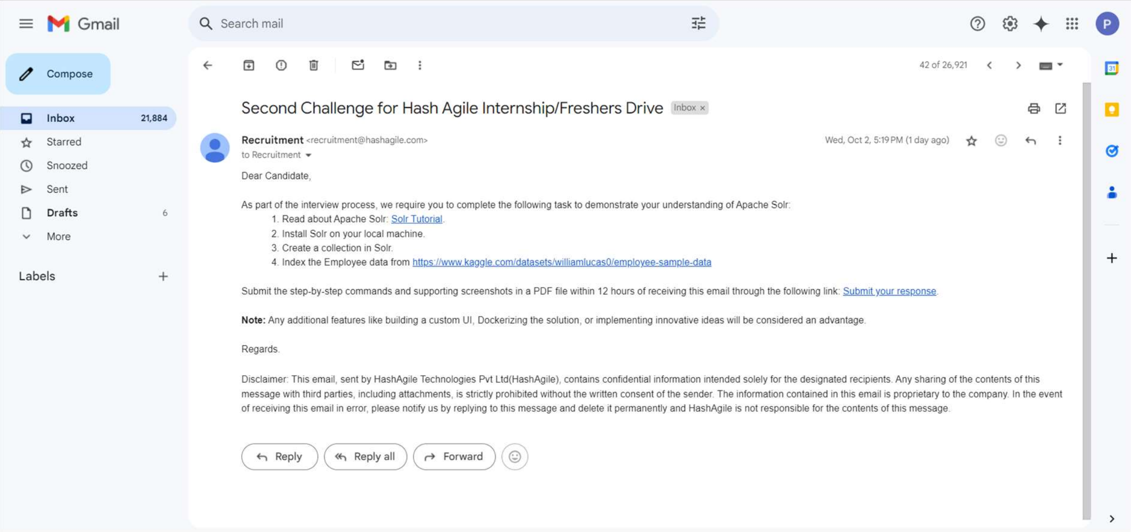
- Ensure that your solution is **original** and does not use built-in functions (as specified in the problem statement). We will be using tools like ZeroGPT to check for plagiarism and any content generated by AI.
- **Please attach a PDF document** that includes:
  - The **problem statement** given
  - The **program code** you have written
  - At least **three sample inputs** along with their respective outputs

We wish you all the best!

Best regards,
HR Team,
Hash Agile Technologies

-

- **Second Task Email Screenshot:**



Second Challenge for Hash Agile Internship/Freshers Drive

Recruitment <recruitment@hashagile.com>
to Recruitment
Wed, Oct 2, 5:19 PM (1 day ago)

Dear Candidate,

As part of the interview process, we require you to complete the following task to demonstrate your understanding of Apache Solr:

1. Read about Apache Solr: Solr Tutorial.
2. Install Solr on your local machine.
3. Create a collection in Solr.
4. Index the Employee data from https://www.kaggle.com/datasets/williamlucas0/employee-sample-data

Submit the step-by-step commands and supporting screenshots in a PDF file within 12 hours of receiving this email through the following link: Submit your response.

Note: Any additional features like building a custom UI, Dockerizing the solution, or implementing innovative ideas will be considered an advantage.

Regards.

Disclaimer: This email, sent by HashAgile Technologies Pvt Ltd(HashAgile), contains confidential information intended solely for the designated recipients. Any sharing of the contents of this message with third parties, including attachments, is strictly prohibited without the written consent of the sender. The information contained in this email is proprietary to the company. In the event of receiving this email in error, please notify us by replying to this message and delete it permanently and HashAgile is not responsible for the contents of this message.

- GitHub URL for Round 1:

  https://github.com/poulomi-03/hashagile-assignment-poulomi-bhattacharya/blob/main/Poulomi_Bhattacharya_First_Round_Challenge.pdf

- GitHub URL for Assignment:

  https://github.com/poulomi-03/hashagile-assignment-poulomi-bhattacharya/blob/main/Poulomi_Bhattacharya_Second_Round_Challenge_with_additions.pdf

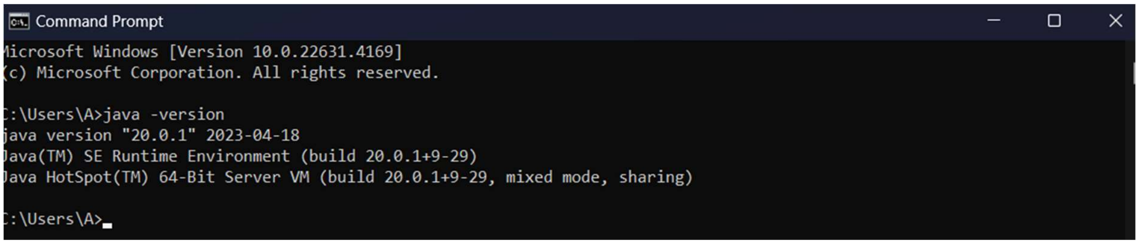
Second round challenge

Problem Statement:

1. Read about Apache Solr: Solr Tutorial.
2. Install Solr on your local machine.
3. Create a collection in Solr.
4. Index the Employee data from https://www.kaggle.com/datasets/williamlucas0/employee-sample-data

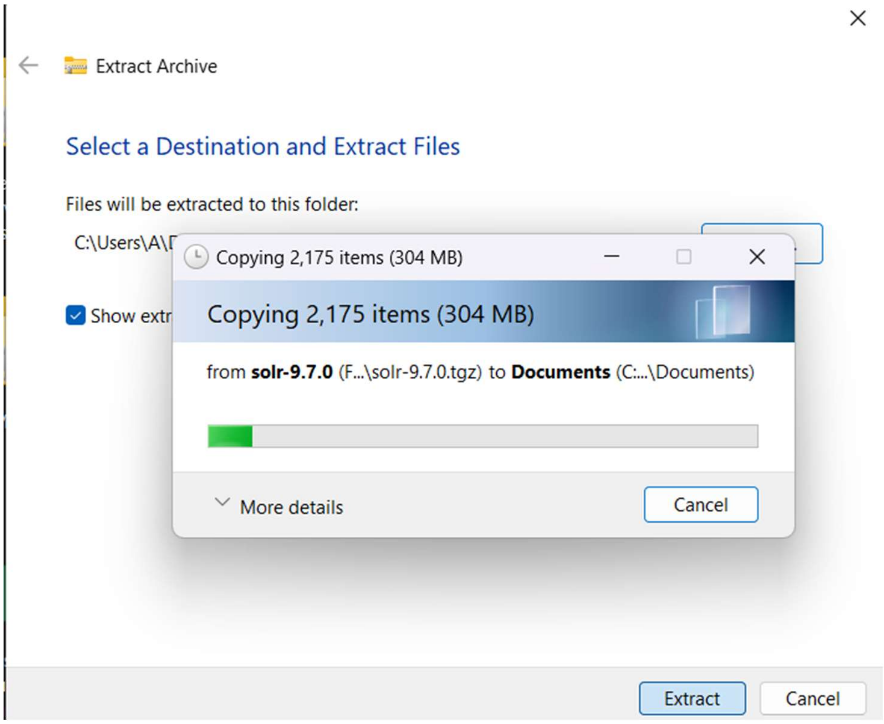
Step 01: Since Apache Solr requires Java 1.8 or higher, it's important to verify if Java is installed and set up correctly.

- Open a command prompt (Windows) or terminal (Linux/macOS) and run the following command:



```
icrosoft Windows [Version 10.0.22631.4169]
(c) Microsoft Corporation. All rights reserved.

:\Users\A>java -version
java version "20.0.1" 2023-04-18
Java(TM) SE Runtime Environment (build 20.0.1+9-29)
Java HotSpot(TM) 64-Bit Server VM (build 20.0.1+9-29, mixed mode, sharing)

:\Users\A>
```

Step02: Download and Extract Solr



Select a Destination and Extract Files

Files will be extracted to this folder:

C:\Users\A\D

☑ Show extr

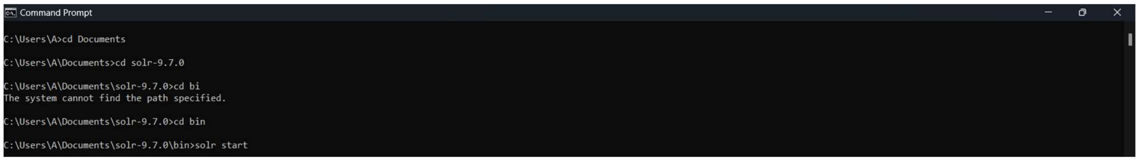
Copying 2,175 items (304 MB)

Copying 2,175 items (304 MB)

from **solr-9.7.0** (F...\solr-9.7.0.tgz) to **Documents** (C:...\Documents)

Step 03: Navigate to the Solr bin directory where you extracted Solr.

- **Windows** (PowerShell)/Command Line

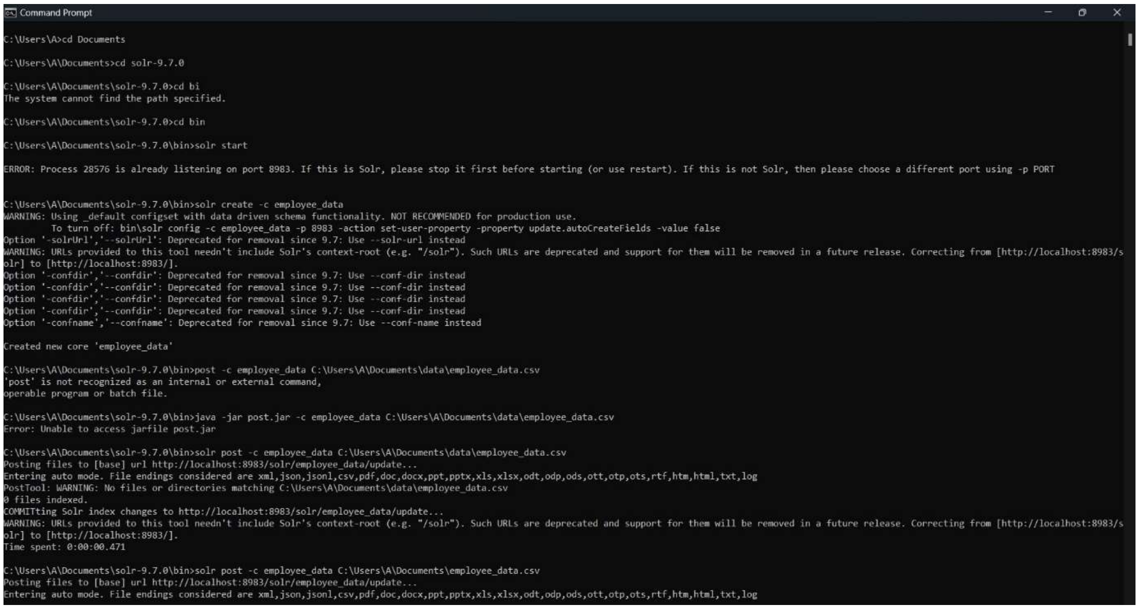


```
C:\Users\A>cd Documents

C:\Users\A\Documents>cd solr-9.7.0

C:\Users\A\Documents\solr-9.7.0>cd bi
The system cannot find the path specified.

C:\Users\A\Documents\solr-9.7.0>cd bin

C:\Users\A\Documents\solr-9.7.0\bin>solr start
```

Step 04: Create a Collection in Solr

To create a collection in Solr, use the create command. This will create a new collection named employee_data.

- Run the following command in your terminal or PowerShell/CMD:



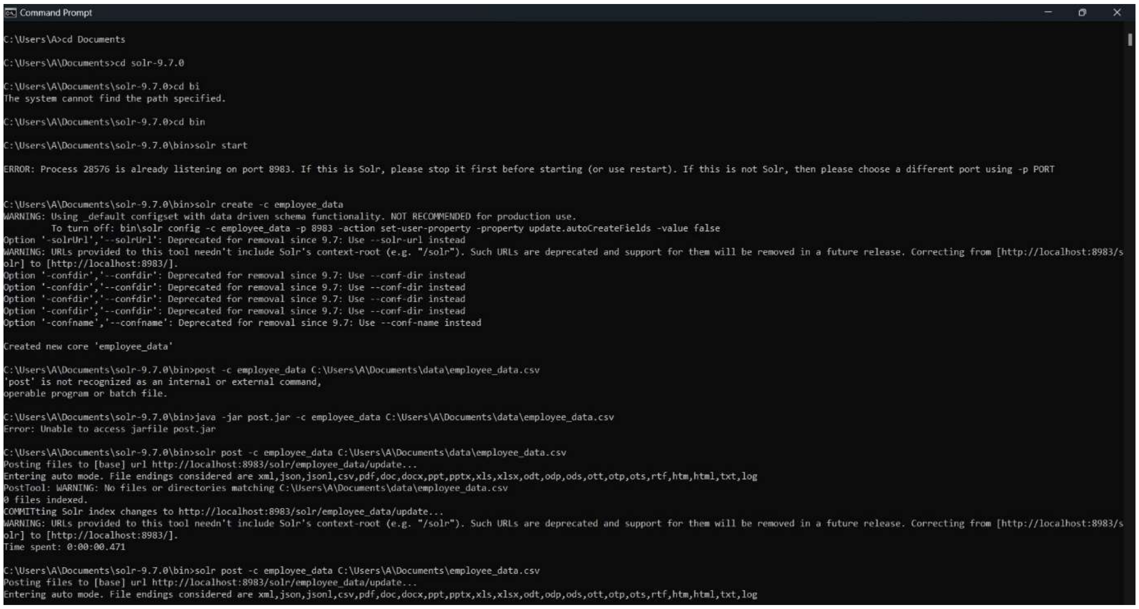
```
C:\Users\A>cd Documents

C:\Users\A\Documents>cd solr-9.7.0

C:\Users\A\Documents\solr-9.7.0>cd bi
The system cannot find the path specified.

C:\Users\A\Documents\solr-9.7.0>cd bin

C:\Users\A\Documents\solr-9.7.0\bin>solr start

ERROR: Process 28576 is already listening on port 8983. If this is Solr, please stop it first before starting (or use restart). If this is not Solr, then please choose a different port using -p PORT


C:\Users\A\Documents\solr-9.7.0\bin>solr create -c employee_data
WARNING: Using _default configset with data driven schema functionality. NOT RECOMMENDED for production use.
         To turn off: bin\solr config -c employee_data -p 8983 -action set-user-property -property update.autoCreateFields -value false
Option '-solrUrl','--solrUrl': Deprecated for removal since 9.7: Use --solr-url instead
WARNING: URLs provided to this tool needn't include Solr's context-root (e.g. "/solr"). Such URLs are deprecated and support for them will be removed in a future release. Correcting from [http://localhost:8983/s
olr] to [http://localhost:8983/].
Option '-confdir','--confdir': Deprecated for removal since 9.7: Use --conf-dir instead
Option '-confdir','--confdir': Deprecated for removal since 9.7: Use --conf-dir instead
Option '-confdir','--confdir': Deprecated for removal since 9.7: Use --conf-dir instead
Option '-confdir','--confdir': Deprecated for removal since 9.7: Use --conf-dir instead
Option '-confname','--confname': Deprecated for removal since 9.7: Use --conf-name instead

Created new core 'employee_data'

C:\Users\A\Documents\solr-9.7.0\bin>post -c employee_data C:\Users\A\Documents\data\employee_data.csv
'post' is not recognized as an internal or external command,
operable program or batch file.

C:\Users\A\Documents\solr-9.7.0\bin>java -jar post.jar -c employee_data C:\Users\A\Documents\data\employee_data.csv
Error: Unable to access jarfile post.jar

C:\Users\A\Documents\solr-9.7.0\bin>solr post -c employee_data C:\Users\A\Documents\data\employee_data.csv
Posting files to [base] url http://localhost:8983/solr/employee_data/update...
Entering auto mode. File endings considered are xml,json,jsonl,csv,pdf,doc,docx,ppt,pptx,xls,xlsx,odt,odp,ods,ott,otp,ots,rtf,htm,html,txt,log
PostTool: WARNING: No files or directories matching C:\Users\A\Documents\data\employee_data.csv
0 files indexed.
COMMITting Solr index changes to http://localhost:8983/solr/employee_data/update...
WARNING: URLs provided to this tool needn't include Solr's context-root (e.g. "/solr"). Such URLs are deprecated and support for them will be removed in a future release. Correcting from [http://localhost:8983/s
olr] to [http://localhost:8983/].
Time spent: 0:00:00.471

C:\Users\A\Documents\solr-9.7.0\bin>solr post -c employee_data C:\Users\A\Documents\employee_data.csv
Posting files to [base] url http://localhost:8983/solr/employee_data/update...
Entering auto mode. File endings considered are xml,json,jsonl,csv,pdf,doc,docx,ppt,pptx,xls,xlsx,odt,odp,ods,ott,otp,ots,rtf,htm,html,txt,log
```

Step 5: Index Employee Data from Kaggle

1. Download the employee dataset from Kaggle. Convert it into a JSON or CSV format if necessary.
2. Upload/Index the data to Solr:

Solr provides a tool called post to upload data easily. Assuming your data is in a CSV file named employee_data.csv, run the following command to index it:

./post -c employee_data /path/to/employee_data.csv

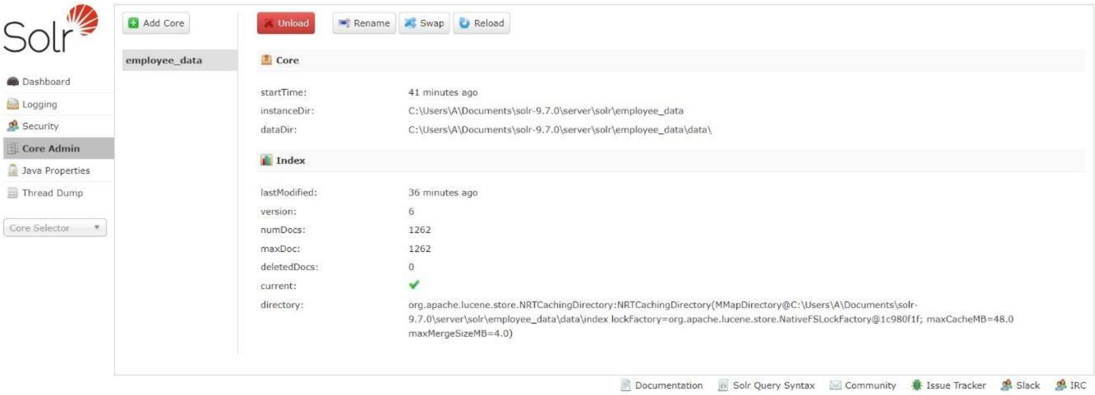


```
C:\Users\A>cd Documents

C:\Users\A\Documents>cd solr-9.7.0

C:\Users\A\Documents\solr-9.7.0>cd bi
The system cannot find the path specified.

C:\Users\A\Documents\solr-9.7.0>cd bin

C:\Users\A\Documents\solr-9.7.0\bin>solr start

ERROR: Process 28576 is already listening on port 8983. If this is Solr, please stop it first before starting (or use restart). If this is not Solr, then please choose a different port using -p PORT


C:\Users\A\Documents\solr-9.7.0\bin>solr create -c employee_data
WARNING: Using _default configset with data driven schema functionality. NOT RECOMMENDED for production use.
         To turn off: bin\solr config -c employee_data -p 8983 -action set-user-property -property update.autoCreateFields -value false
Option '-solrUrl','--solrUrl': Deprecated for removal since 9.7: Use --solr-url instead
WARNING: URLs provided to this tool needn't include Solr's context-root (e.g. "/solr"). Such URLs are deprecated and support for them will be removed in a future release. Correcting from [http://localhost:8983/s
olr] to [http://localhost:8983/].
Option '-confdir','--confdir': Deprecated for removal since 9.7: Use --conf-dir instead
Option '-confdir','--confdir': Deprecated for removal since 9.7: Use --conf-dir instead
Option '-confdir','--confdir': Deprecated for removal since 9.7: Use --conf-dir instead
Option '-confdir','--confdir': Deprecated for removal since 9.7: Use --conf-dir instead
Option '-confname','--confname': Deprecated for removal since 9.7: Use --conf-name instead

Created new core 'employee_data'

C:\Users\A\Documents\solr-9.7.0\bin>post -c employee_data C:\Users\A\Documents\data\employee_data.csv
'post' is not recognized as an internal or external command,
operable program or batch file.

C:\Users\A\Documents\solr-9.7.0\bin>java -jar post.jar -c employee_data C:\Users\A\Documents\data\employee_data.csv
Error: Unable to access jarfile post.jar

C:\Users\A\Documents\solr-9.7.0\bin>solr post -c employee_data C:\Users\A\Documents\data\employee_data.csv
Posting files to [base] url http://localhost:8983/solr/employee_data/update...
Entering auto mode. File endings considered are xml,json,jsonl,csv,pdf,doc,docx,ppt,pptx,xls,xlsx,odt,odp,ods,ott,otp,ots,rtf,htm,html,txt,log
PostTool: WARNING: No files or directories matching C:\Users\A\Documents\data\employee_data.csv
0 files indexed.
COMMITting Solr index changes to http://localhost:8983/solr/employee_data/update...
WARNING: URLs provided to this tool needn't include Solr's context-root (e.g. "/solr"). Such URLs are deprecated and support for them will be removed in a future release. Correcting from [http://localhost:8983/s
olr] to [http://localhost:8983/].
Time spent: 0:00:00.471

C:\Users\A\Documents\solr-9.7.0\bin>solr post -c employee_data C:\Users\A\Documents\employee_data.csv
Posting files to [base] url http://localhost:8983/solr/employee_data/update...
Entering auto mode. File endings considered are xml,json,jsonl,csv,pdf,doc,docx,ppt,pptx,xls,xlsx,odt,odp,ods,ott,otp,ots,rtf,htm,html,txt,log
```

Step 05: Verify the data is indexed:

- Go to the Solr Admin UI (http://localhost:8983/solr/).
- Select the employee_data collection from the left sidebar.
- Navigate to the Query section.
- Perform a query to fetch all indexed documents by entering *:* and clicking Execute Query.

You should see a list of documents returned from the indexed data.



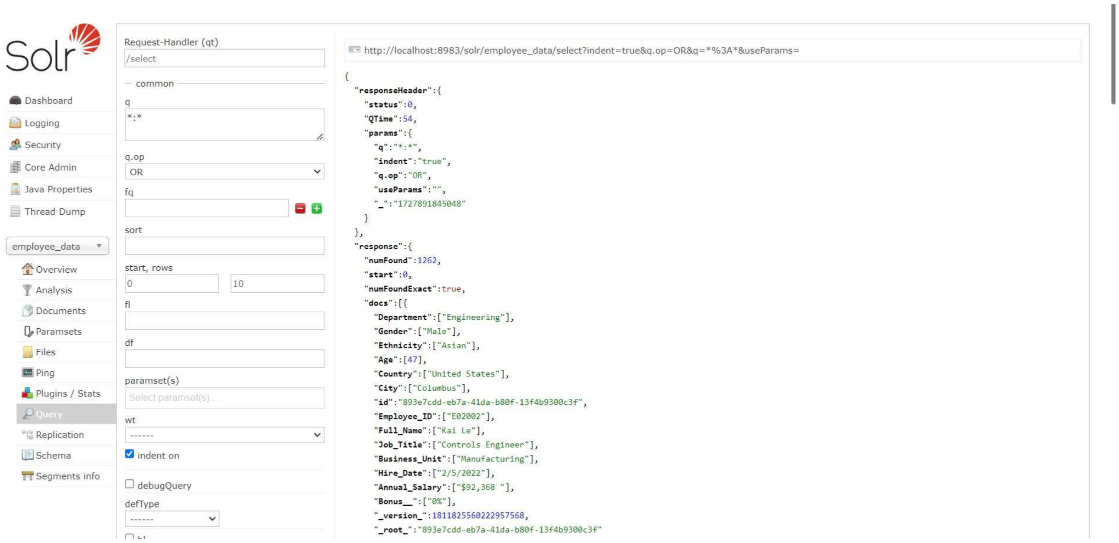
employee_data

Core

```
startTime:      41 minutes ago
instanceDir:    C:\Users\A\Documents\solr-9.7.0\server\solr\employee_data
dataDir:        C:\Users\A\Documents\solr-9.7.0\server\solr\employee_data\data\
```

Index

```
lastModified:   36 minutes ago
version:        6
numDocs:        1262
maxDoc:         1262
deletedDocs:    0
current:        ✓
directory:      org.apache.lucene.store.NRTCachingDirectory:NRTCachingDirectory(MMapDirectory@C:\Users\A\Documents\solr-
                9.7.0\server\solr\employee_data\data\index lockFactory=org.apache.lucene.store.NativeFSLockFactory@1c980f1f; maxCacheMB=48.0
                maxMergeSizeMB=4.0)
```



Request-Handler (qt)
/select

q
:

q.op
OR

fq

sort

start, rows
0 10

fl

df

paramset(s)

wt

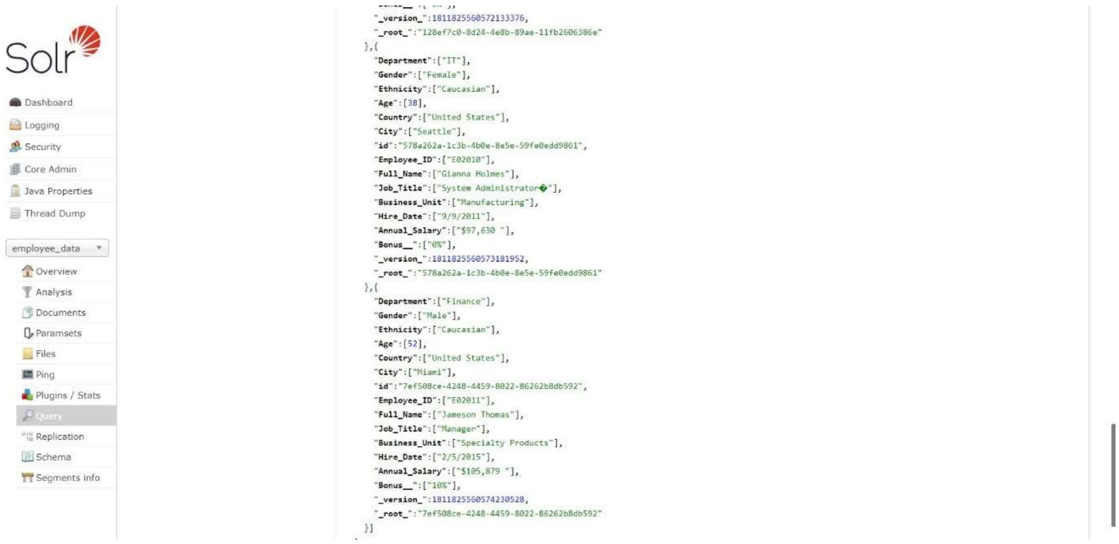
☑ indent on

□ debugQuery

defType
------

http://localhost:8983/solr/employee_data/select?indent=true&q.op=OR&q=*%3A*&useParams=

```
{
  "responseHeader":{
    "status":0,
    "QTime":54,
    "params":{
      "q":"*:*",
      "indent":"true",
      "q.op":"OR",
      "useParams":"",
      "_":"1727891845048"
    }
  },
  "response":{
    "numFound":1262,
    "start":0,
    "numFoundExact":true,
    "docs":[{
      "Department":["Engineering"],
      "Gender":["Male"],
      "Ethnicity":["Asian"],
      "Age":[47],
      "Country":["United States"],
      "City":["Columbus"],
      "id":"893e7cdd-eb7a-41da-b80f-13f4b9300c3f",
      "Employee_ID":["E02002"],
      "Full_Name":["Kai Le"],
      "Job_Title":["Controls Engineer"],
      "Business_Unit":["Manufacturing"],
      "Hire_Date":["2/5/2022"],
      "Annual_Salary":["$92,368 "],
      "Bonus__":["0%"],
      "_version_":1811825560222957568,
      "_root_":"893e7cdd-eb7a-41da-b80f-13f4b9300c3f"
```



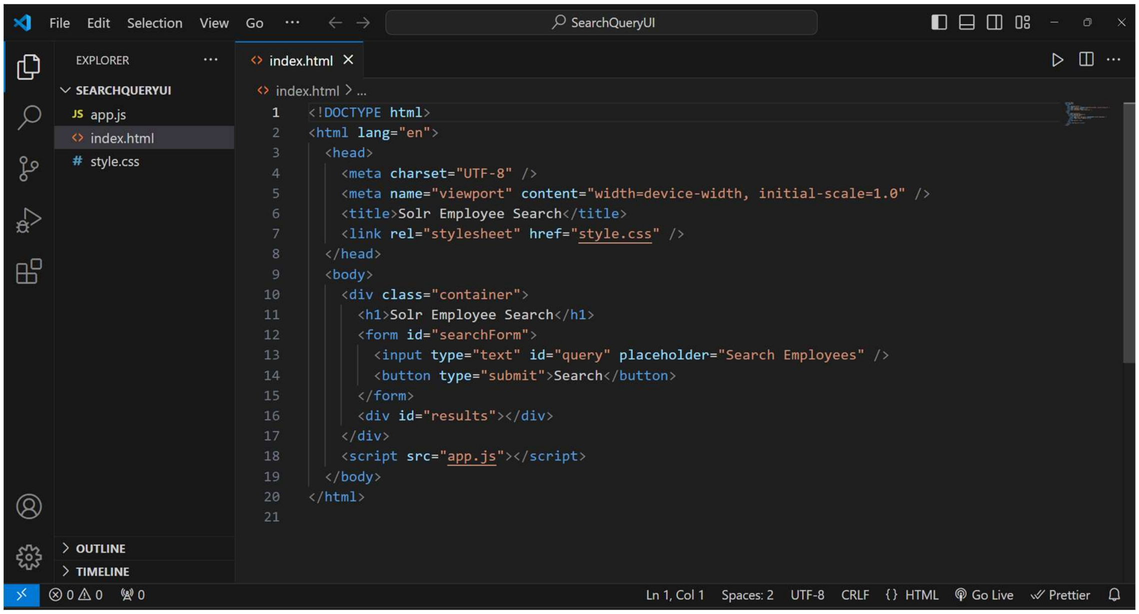
```
      "_version_":1811825560572133376,
      "_root_":"128ef7c0-8d24-4e8b-89ae-11fb2606386e"
    },{
      "Department":["IT"],
      "Gender":["Female"],
      "Ethnicity":["Caucasian"],
      "Age":[38],
      "Country":["United States"],
      "City":["Seattle"],
      "id":"578a262a-1c3b-4b0e-8e5e-59fe0edd9861",
      "Employee_ID":["E02010"],
      "Full_Name":["Gianna Holmes"],
      "Job_Title":["System Administrator�"],
      "Business_Unit":["Manufacturing"],
      "Hire_Date":["9/9/2011"],
      "Annual_Salary":["$97,630 "],
      "Bonus__":["0%"],
      "_version_":1811825560573181952,
      "_root_":"578a262a-1c3b-4b0e-8e5e-59fe0edd9861"
    },{
      "Department":["Finance"],
      "Gender":["Male"],
      "Ethnicity":["Caucasian"],
      "Age":[52],
      "Country":["United States"],
      "City":["Miami"],
      "id":"7ef508ce-4248-4459-8022-86262b8db592",
      "Employee_ID":["E02011"],
      "Full_Name":["Jameson Thomas"],
      "Job_Title":["Manager"],
      "Business_Unit":["Specialty Products"],
      "Hire_Date":["2/5/2015"],
      "Annual_Salary":["$105,879 "],
      "Bonus__":["10%"],
      "_version_":1811825560574230528,
      "_root_":"7ef508ce-4248-4459-8022-86262b8db592"
    }]
```

Additional Feature:

Apache Solr Search UI with HTML, CSS, and JavaScript

<u>Building a user interface that interacts with an Apache Solr backend, allowing users to query a Solr collection and display results on the frontend.</u>

Step 01: Create index.html



```html
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="UTF-8" />
    <meta name="viewport" content="width=device-width, initial-scale=1.0" />
    <title>Solr Employee Search</title>
    <link rel="stylesheet" href="style.css" />
  </head>
  <body>
    <div class="container">
      <h1>Solr Employee Search</h1>
      <form id="searchForm">
        <input type="text" id="query" placeholder="Search Employees" />
        <button type="submit">Search</button>
      </form>
      <div id="results"></div>
    </div>
    <script src="app.js"></script>
  </body>
</html>
```

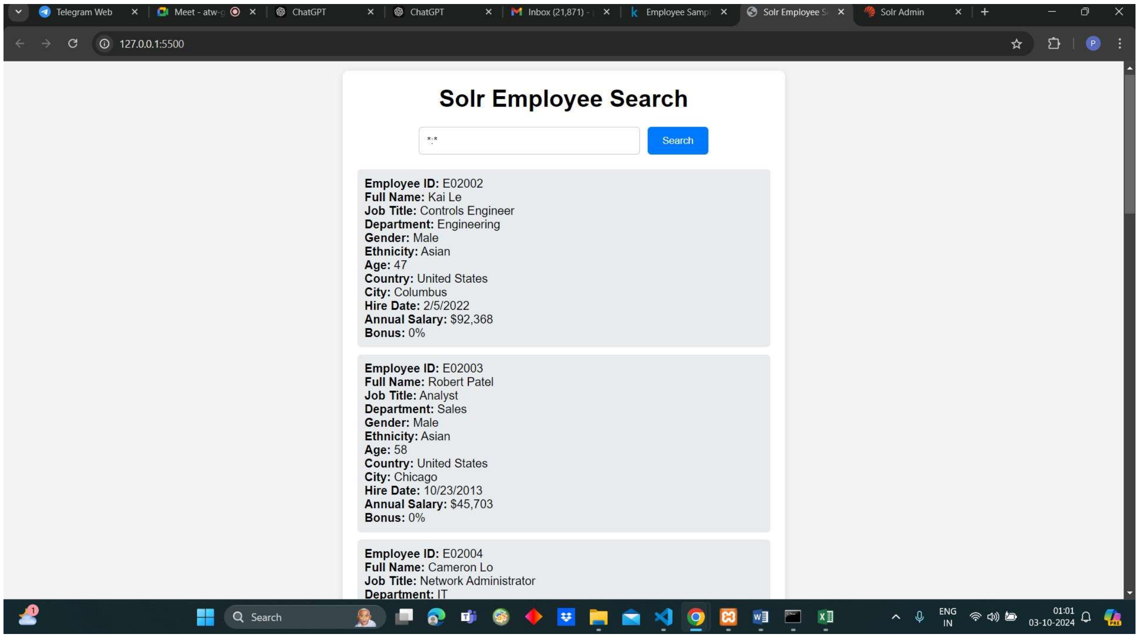
Step 02: Create style.css

```css
* {
  box-sizing: border-box;
  margin: 0;
  padding: 0;
}

body {
  font-family: Arial, sans-serif;
  background-color: #f4f4f4;
  padding: 20px;
}

.container {
  max-width: 600px;
  margin: 0 auto;
  background: #fff;
  padding: 20px;
  border-radius: 8px;
  box-shadow: 0 2px 10px rgba(0, 0, 0, 0.1);
}

h1 {
  text-align: center;
  margin-bottom: 20px;
}

form {
  display: flex;
  justify-content: center;
}

input {
  padding: 10px;
  width: 300px;
  margin-right: 10px;
  border-radius: 5px;
  border: 1px solid #ccc;
}

button {
  padding: 10px 20px;
  border: none;
  background-color: #007bff;
  color: white;
  border-radius: 5px;
  cursor: pointer;
}

button:hover {
  background-color: #0056b3;
}

#results {
  margin-top: 20px;
}

.result-item {
  background-color: #e9ecef;
  padding: 10px;
  margin-bottom: 10px;
  border-radius: 5px;
}
```

Step 03: Create app.js

```
document
  .getElementById("searchForm")
  .addEventListener("submit", async function (e) {
    e.preventDefault();

    // Get the query from the input field
    const query = document.getElementById("query").value;

    // Make sure there's a query entered
    if (query.trim() === "") {
      alert("Please enter a search term");
      return;
    }

    // Solr query URL
    const solrUrl = `http://localhost:8983/solr/employee_data/select?q=${query}&wt=json`;

    try {
      // Fetch data from Solr
      const response = await fetch(solrUrl);
      const data = await response.json();

      // Display results
      displayResults(data.response.docs);
    } catch (error) {
      console.error("Error fetching data:", error);
      alert("Failed to fetch data from Solr");
    }
  });

function displayResults(docs) {
  const resultsDiv = document.getElementById("results");
  resultsDiv.innerHTML = "";

  if (docs.length === 0) {
    resultsDiv.innerHTML = "<p>No results found</p>";
    return;
  }

  docs.forEach((doc) => {
    const resultItem = document.createElement("div");
    resultItem.classList.add("result-item");

    // Extract fields from the document, ensuring to access the first item in arrays
    resultItem.innerHTML = `
      <p><strong>Employee ID:</strong> ${doc.Employee_ID[0]}</p>
      <p><strong>Full Name:</strong> ${doc.Full_Name[0]}</p>
      <p><strong>Job Title:</strong> ${doc.Job_Title[0]}</p>
      <p><strong>Department:</strong> ${doc.Department[0]}</p>
      <p><strong>Gender:</strong> ${doc.Gender[0]}</p>
      <p><strong>Ethnicity:</strong> ${doc.Ethnicity[0]}</p>
      <p><strong>Age:</strong> ${doc.Age[0]}</p>
      <p><strong>Country:</strong> ${doc.Country[0]}</p>
      <p><strong>City:</strong> ${doc.City[0]}</p>
      <p><strong>Hire Date:</strong> ${doc.Hire_Date[0]}</p>
      <p><strong>Annual Salary:</strong> ${doc.Annual_Salary[0]}</p>
      <p><strong>Bonus:</strong> ${doc.Bonus__[0]}</p>
    `;

    resultsDiv.appendChild(resultItem);
  });
}
```

Result:



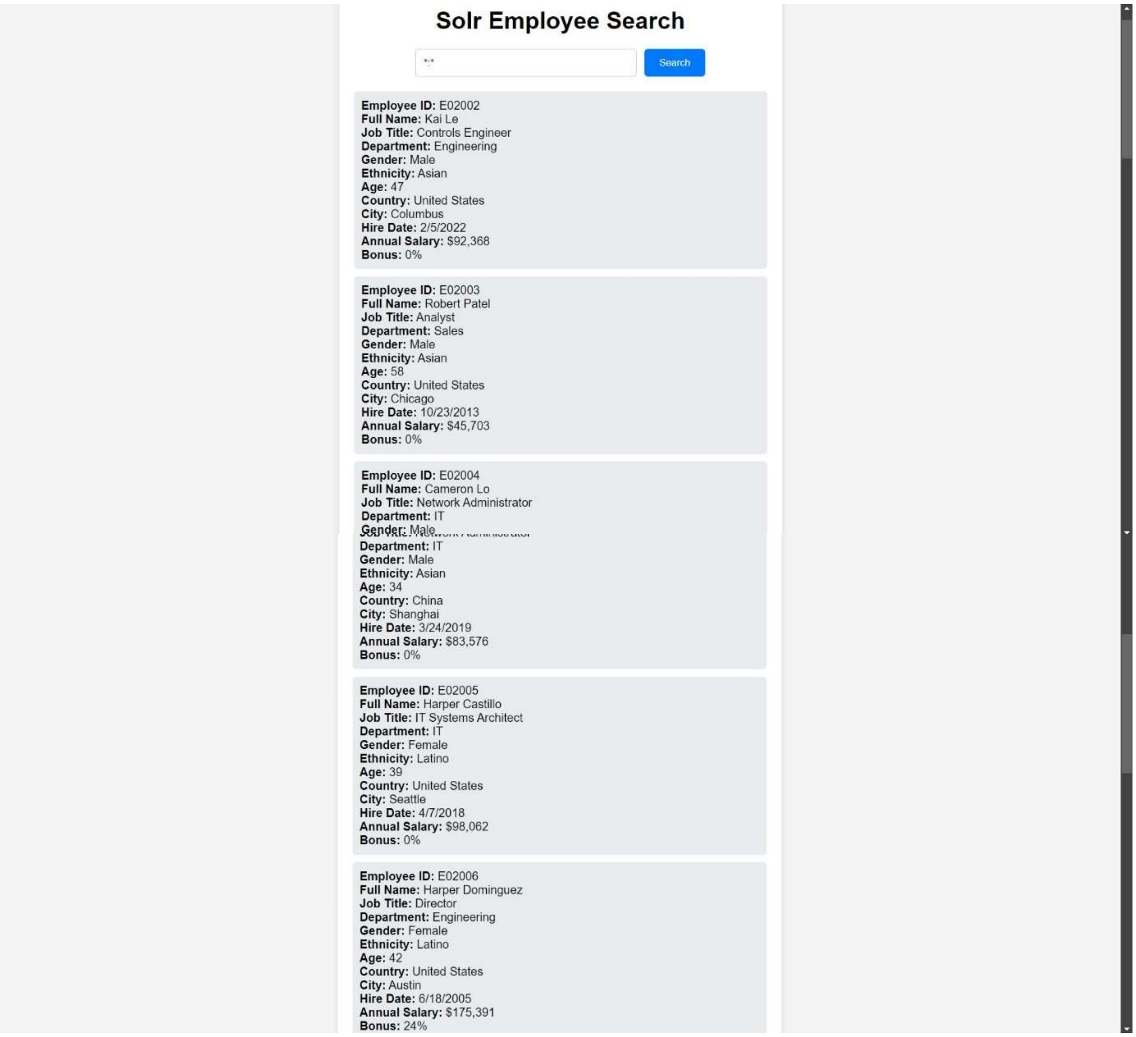
Solr Employee Search

: Search

Employee ID: E02002
Full Name: Kai Le
Job Title: Controls Engineer
Department: Engineering
Gender: Male
Ethnicity: Asian
Age: 47
Country: United States
City: Columbus
Hire Date: 2/5/2022
Annual Salary: $92,368
Bonus: 0%

Employee ID: E02003
Full Name: Robert Patel
Job Title: Analyst
Department: Sales
Gender: Male
Ethnicity: Asian
Age: 58
Country: United States
City: Chicago
Hire Date: 10/23/2013
Annual Salary: $45,703
Bonus: 0%

Employee ID: E02004
Full Name: Cameron Lo
Job Title: Network Administrator
Department: IT



Solr Employee Search

: Search

Employee ID: E02002
Full Name: Kai Le
Job Title: Controls Engineer
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Gender: Male
Ethnicity: Asian
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Annual Salary: $92,368
Bonus: 0%

Employee ID: E02003
Full Name: Robert Patel
Job Title: Analyst
Department: Sales
Gender: Male
Ethnicity: Asian
Age: 58
Country: United States
City: Chicago
Hire Date: 10/23/2013
Annual Salary: $45,703
Bonus: 0%

Employee ID: E02004
Full Name: Cameron Lo
Job Title: Network Administrator
Department: IT
Gender: Male
Department: IT

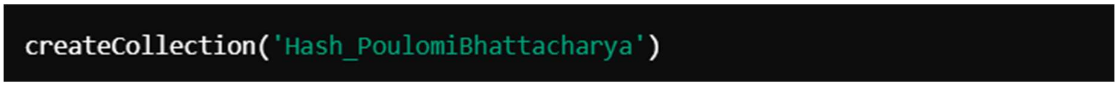
Gender: Male
Ethnicity: Asian
Age: 34
Country: China
City: Shanghai
Hire Date: 3/24/2019
Annual Salary: $83,576
Bonus: 0%

Employee ID: E02005
Full Name: Harper Castillo
Job Title: IT Systems Architect
Department: IT
Gender: Female
Ethnicity: Latino
Age: 39
Country: United States
City: Seattle
Hire Date: 4/7/2018
Annual Salary: $98,062
Bonus: 0%

Employee ID: E02006
Full Name: Harper Dominguez
Job Title: Director
Department: Engineering
Gender: Female
Ethnicity: Latino
Age: 42
Country: United States
City: Austin
Hire Date: 6/18/2005
Annual Salary: $175,391
Bonus: 24%

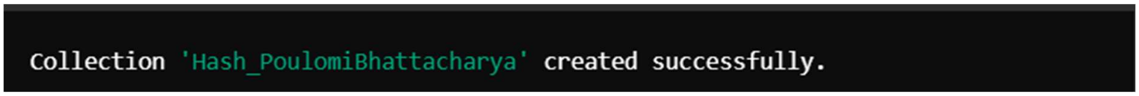
Function Executions:

1. Create a Collection: createCollection(v_nameCollection)



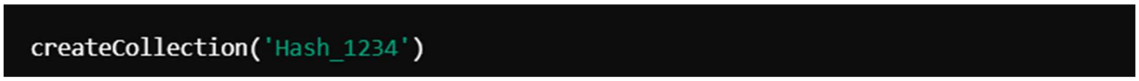
```
createCollection('Hash_PoulomiBhattacharya')
```

Output:



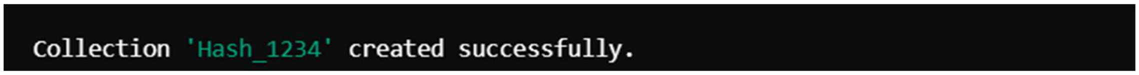
```
Collection 'Hash_PoulomiBhattacharya' created successfully.
```

2. **Create a Collection: createCollection(v_phoneCollection)**



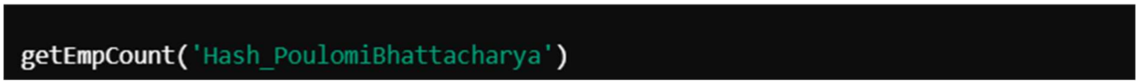
```
createCollection('Hash_1234')
```

Output:



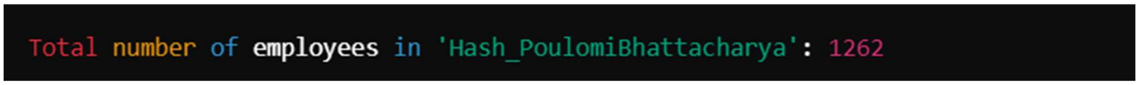
```
Collection 'Hash_1234' created successfully.
```

3. Get Employee Count: getEmpCount(v_nameCollection)



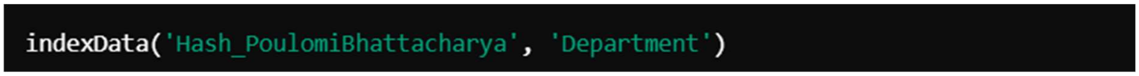
```
getEmpCount('Hash_PoulomiBhattacharya')
```

Output:



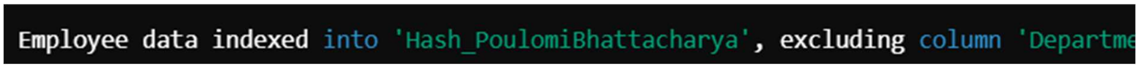
```
Total number of employees in 'Hash_PoulomiBhattacharya': 1262
```

4. Index Employee Data Excluding Department: indexData(v_nameCollection, 'Department')



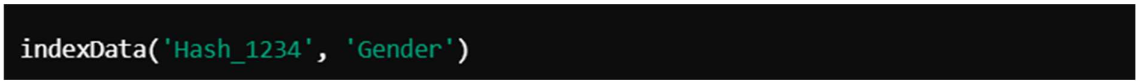
```
indexData('Hash_PoulomiBhattacharya', 'Department')
```

Output:



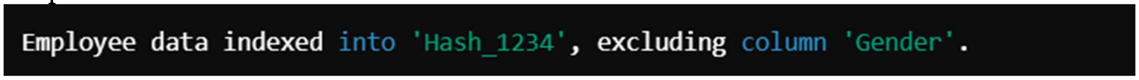
```
Employee data indexed into 'Hash_PoulomiBhattacharya', excluding column 'Departme
```

5. Index Employee Data Excluding Gender: indexData(v_phoneCollection, 'Gender')



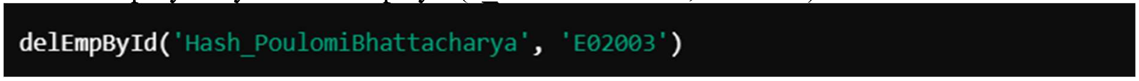
```
indexData('Hash_1234', 'Gender')
```

Output:



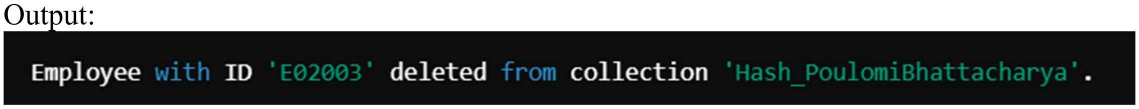
```
Employee data indexed into 'Hash_1234', excluding column 'Gender'.
```

6. Delete Employee by ID: delEmpById(v_nameCollection, 'E02003')



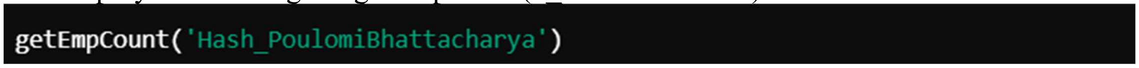
```
delEmpById('Hash_PoulomiBhattacharya', 'E02003')
```

Output:



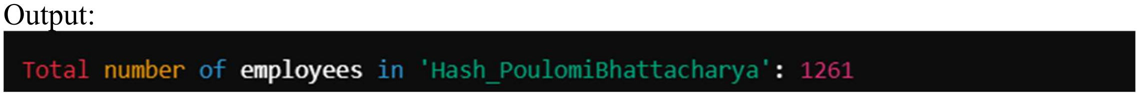
```
Employee with ID 'E02003' deleted from collection 'Hash_PoulomiBhattacharya'.
```

7. Get Employee Count Again: getEmpCount(v_nameCollection)



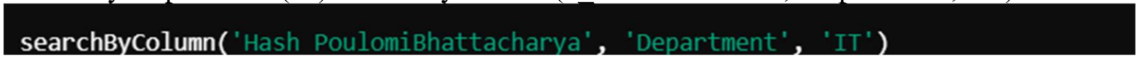
```
getEmpCount('Hash_PoulomiBhattacharya')
```

Output:



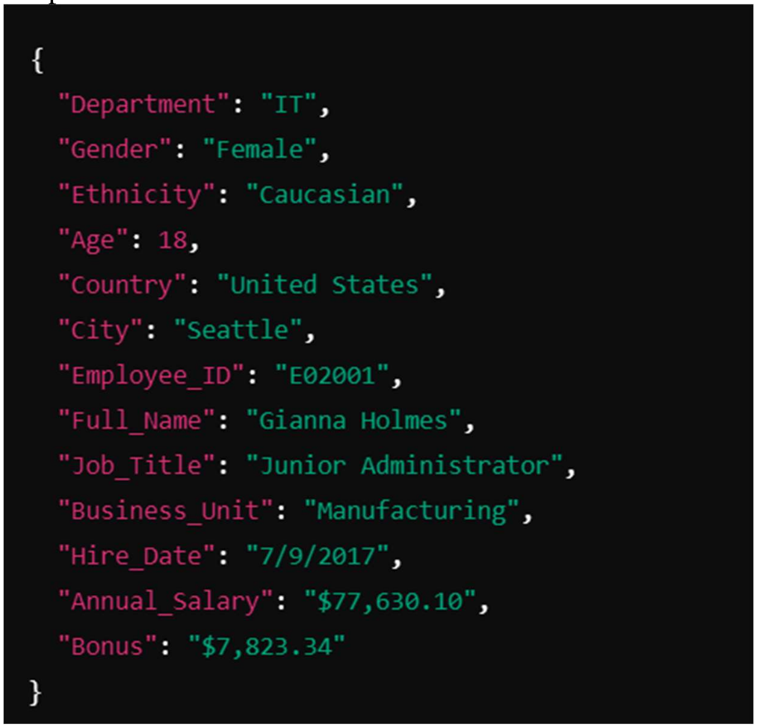
```
Total number of employees in 'Hash_PoulomiBhattacharya': 1261
```

8. Search by Department (IT): searchByColumn(v_nameCollection, 'Department', 'IT')



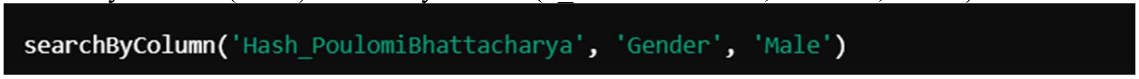
```
searchByColumn('Hash_PoulomiBhattacharya', 'Department', 'IT')
```

Output:



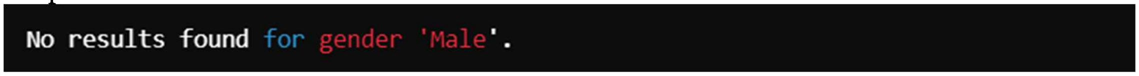
```
{
  "Department": "IT",
  "Gender": "Female",
  "Ethnicity": "Caucasian",
  "Age": 18,
  "Country": "United States",
  "City": "Seattle",
  "Employee_ID": "E02001",
  "Full_Name": "Gianna Holmes",
  "Job_Title": "Junior Administrator",
  "Business_Unit": "Manufacturing",
  "Hire_Date": "7/9/2017",
  "Annual_Salary": "$77,630.10",
  "Bonus": "$7,823.34"
}
```

9. Search by Gender (Male): searchByColumn(v_nameCollection, 'Gender', 'Male')



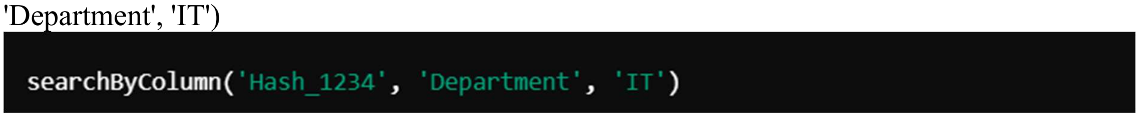
```
searchByColumn('Hash_PoulomiBhattacharya', 'Gender', 'Male')
```

Output:



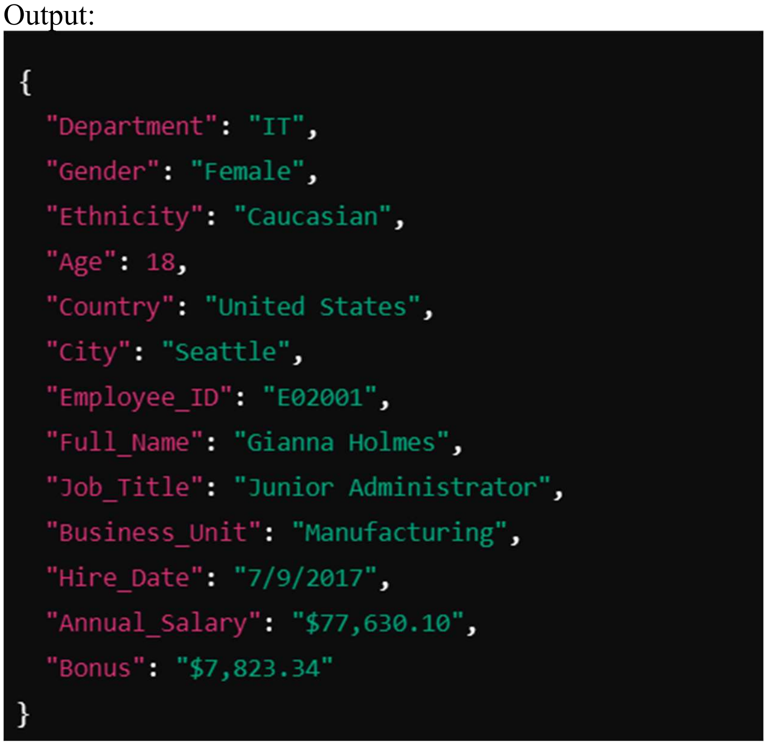
```
No results found for gender 'Male'.
```

10. Search by Department in v_phoneCollection: searchByColumn(v_phoneCollection, 'Department', 'IT')



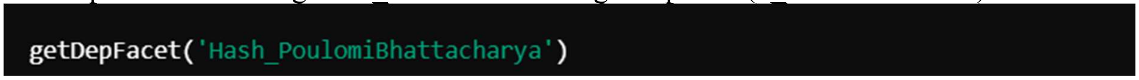
```
searchByColumn('Hash_1234', 'Department', 'IT')
```

Output:



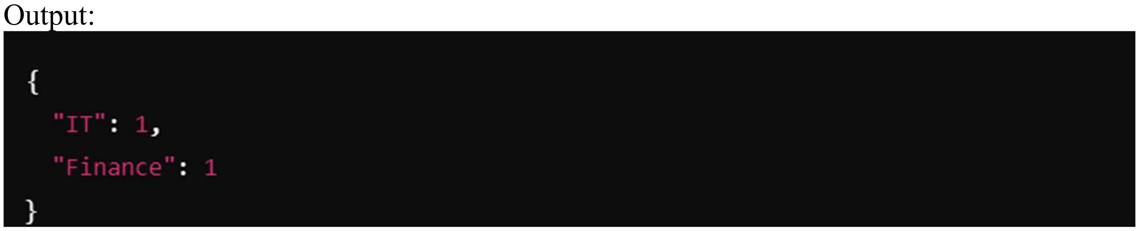
```
{
  "Department": "IT",
  "Gender": "Female",
  "Ethnicity": "Caucasian",
  "Age": 18,
  "Country": "United States",
  "City": "Seattle",
  "Employee_ID": "E02001",
  "Full_Name": "Gianna Holmes",
  "Job_Title": "Junior Administrator",
  "Business_Unit": "Manufacturing",
  "Hire_Date": "7/9/2017",
  "Annual_Salary": "$77,630.10",
  "Bonus": "$7,823.34"
}
```

11. Get Department Faceting for v_nameCollection: getDepFacet(v_nameCollection)



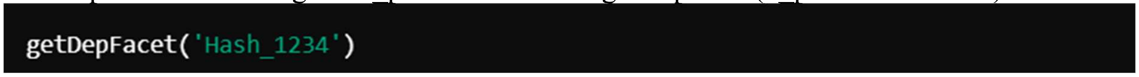
```
getDepFacet('Hash_PoulomiBhattacharya')
```

Output:



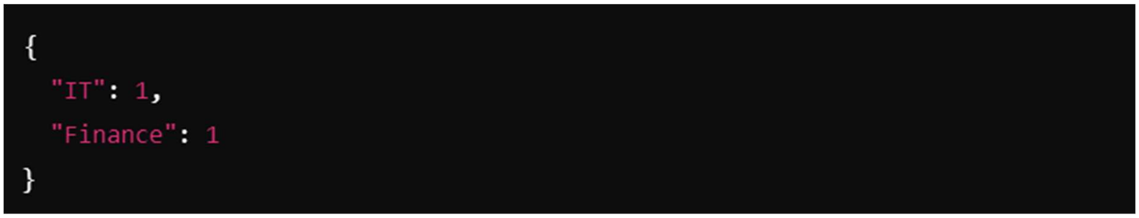
```
{
  "IT": 1,
  "Finance": 1
}
```

12. Get Department Faceting for v_phoneCollection: getDepFacet(v_phoneCollection)



```
getDepFacet('Hash_1234')
```

Output:



```
{
  "IT": 1,
  "Finance": 1
}
```

Search UI

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Solr Employee Search</title>
</head>
<body>
    <h1>Search Employees by Column</h1>
    <form id="search-form">
        <label for="column">Column:</label>
        <input type="text" id="column" name="column" required>
        <label for="value">Value:</label>
        <input type="text" id="value" name="value" required>
        <button type="submit">Search</button>
    </form>

    <div id="results"></div>

    <script>
        document.getElementById('search-form').addEventListener('submit', function(e) {
            e.preventDefault();
            const column = document.getElementById('column').value;
            const value = document.getElementById('value').value;


fetch(`http://localhost:8983/solr/Hash_PoulomiBhattacharya/select?q=${column}:${value}&
wt=json`)
                .then(response => response.json())
                .then(data => {
                    const results = document.getElementById('results');
                    results.innerHTML = JSON.stringify(data.response.docs);
                });
        });
    </script>
</body>
```

```
</html>
```