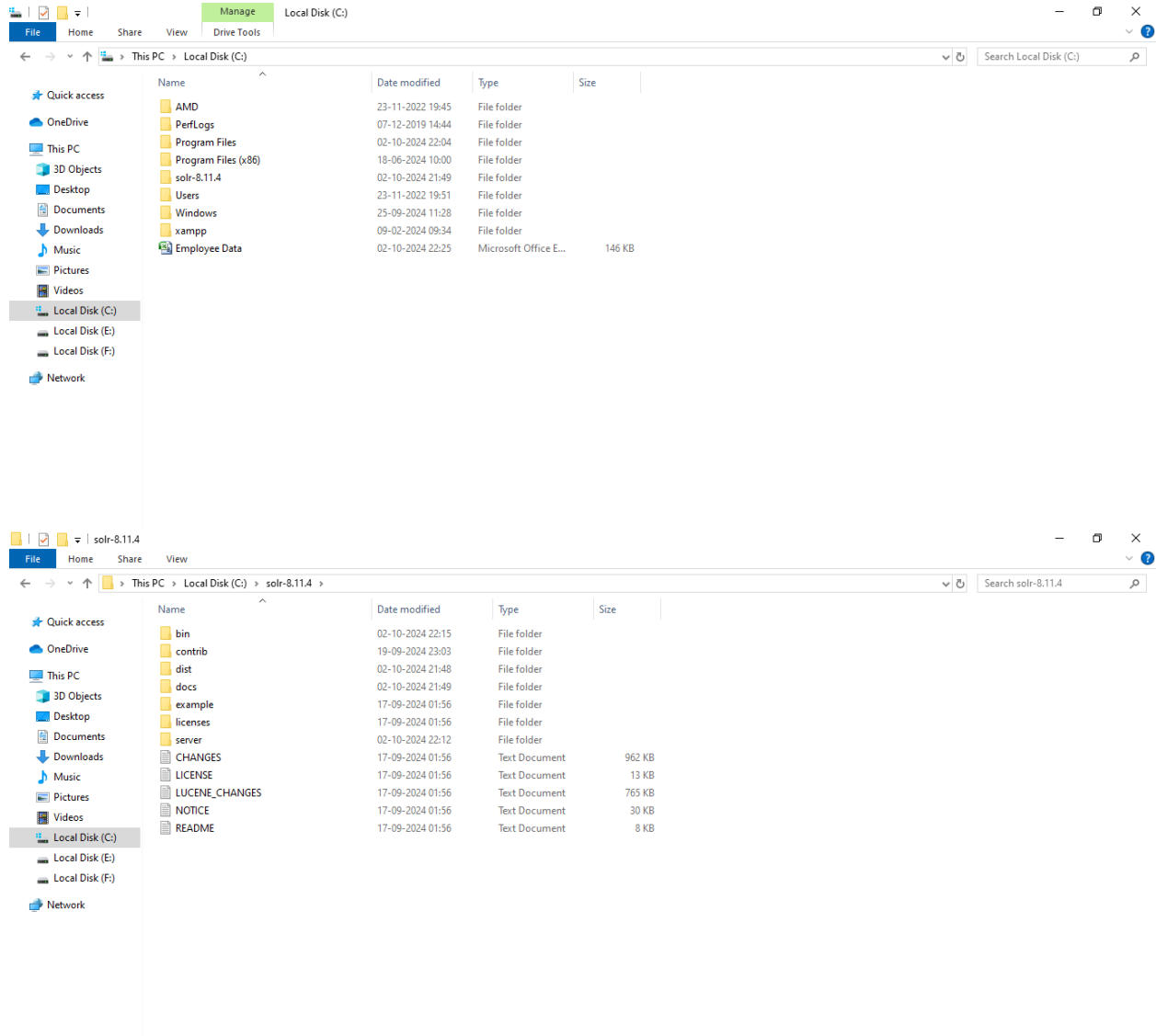
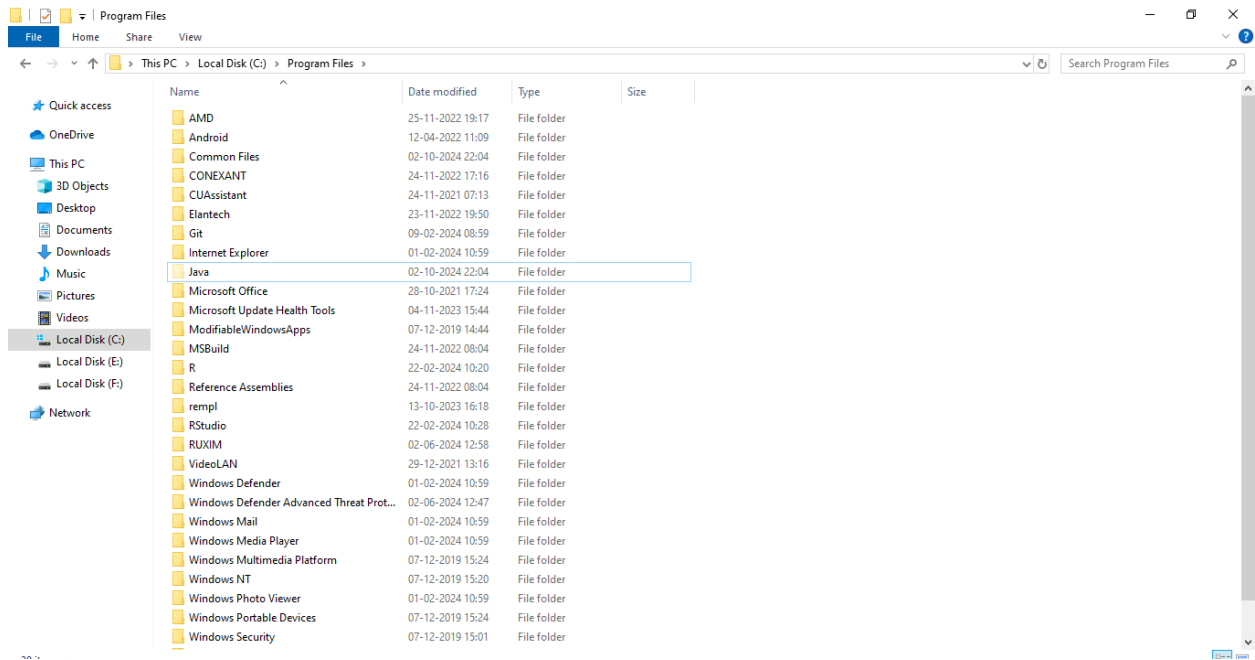


Round 2-Apache Solr Assessment

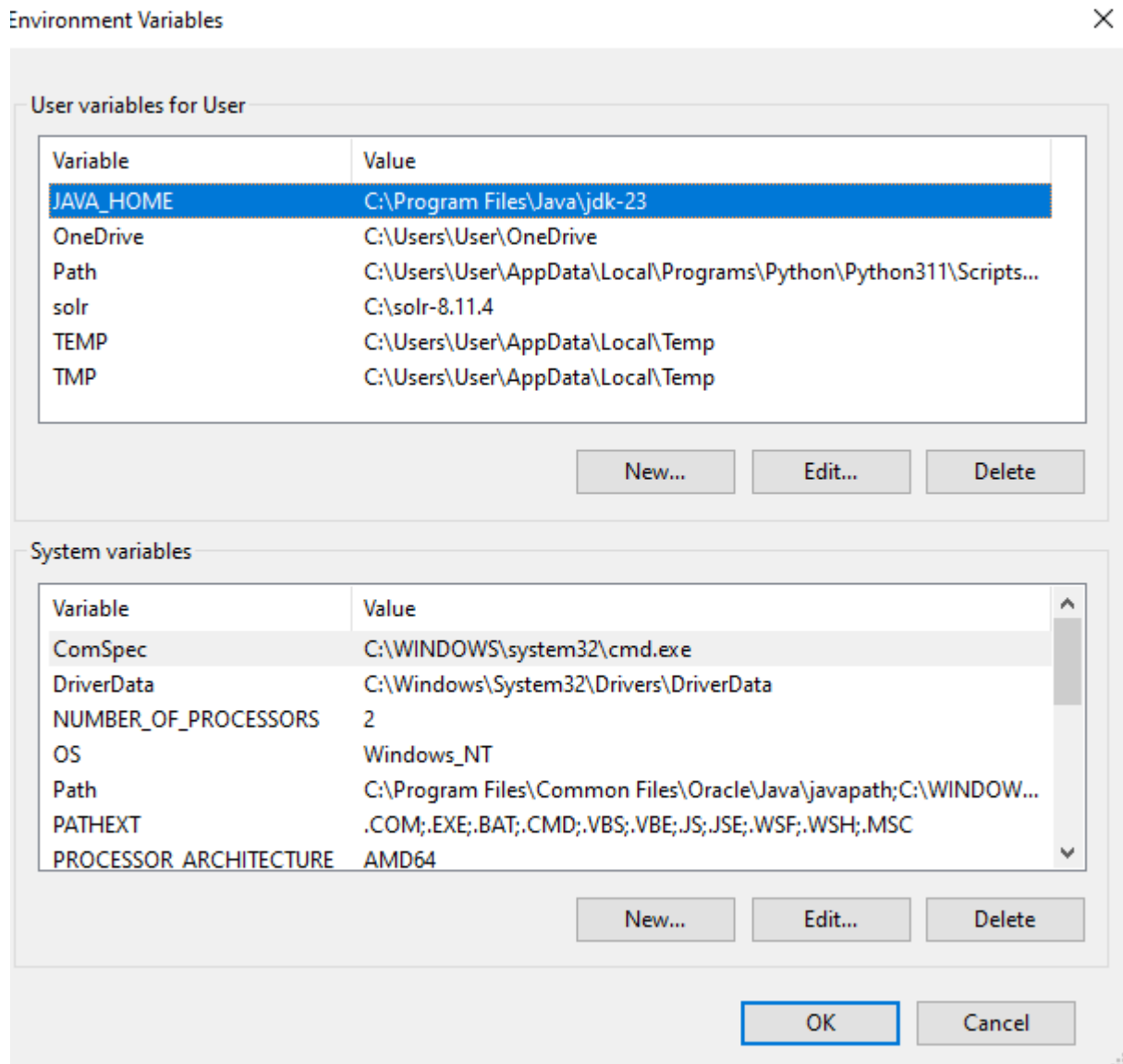
Step 1: Install the apache solr tar file from official site and extract that file using Rar Software.



Step 2: Install Java JDK software from official site and install it on windows.



Step 3: Set path for Apache solr and Java jdk.



```
Microsoft Windows [Version 10.0.19045.4291]
(c) Microsoft Corporation. All rights reserved.

C:\Users\User>solr -v
8.11.4

C:\Users\User>java --version
java 23 2024-09-17
Java(TM) SE Runtime Environment (build 23+37-2369)
Java HotSpot(TM) 64-Bit Server VM (build 23+37-2369, mixed mode, sharing)

C:\Users\User>_
```

Step 4: Open Command line interface and redirect to the Solr directory and start Apache Solr server.

Comment Line: `solr start -c`

```
Microsoft Windows [Version 10.0.19045.4291]
(c) Microsoft Corporation. All rights reserved.

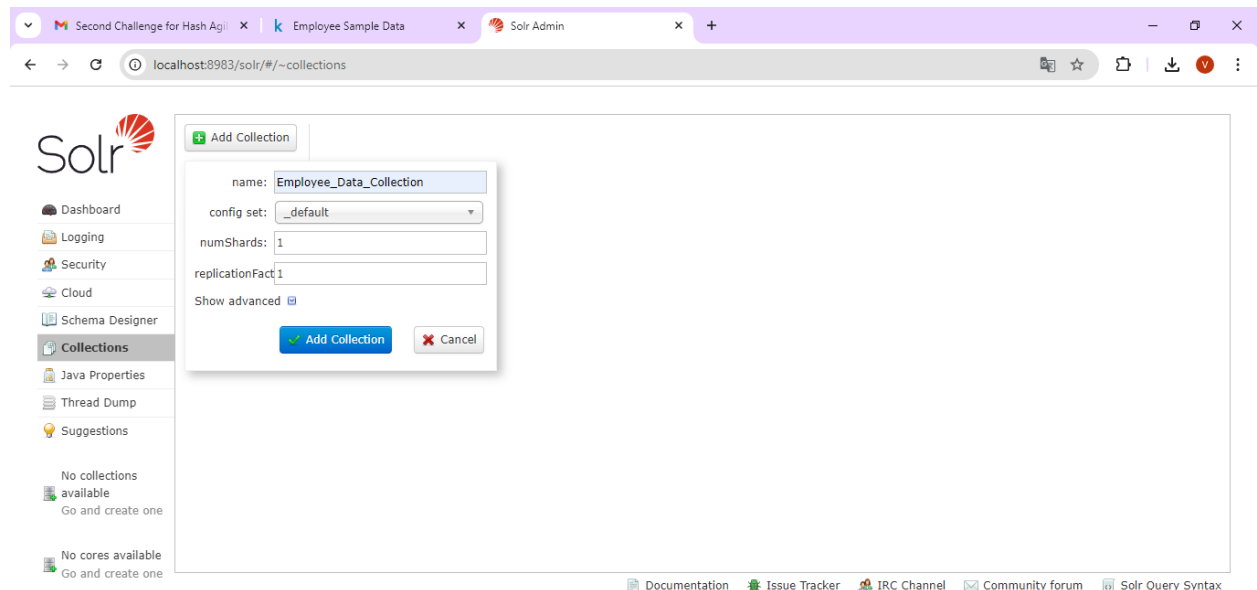
C:\Users\User>solr -v
8.11.4

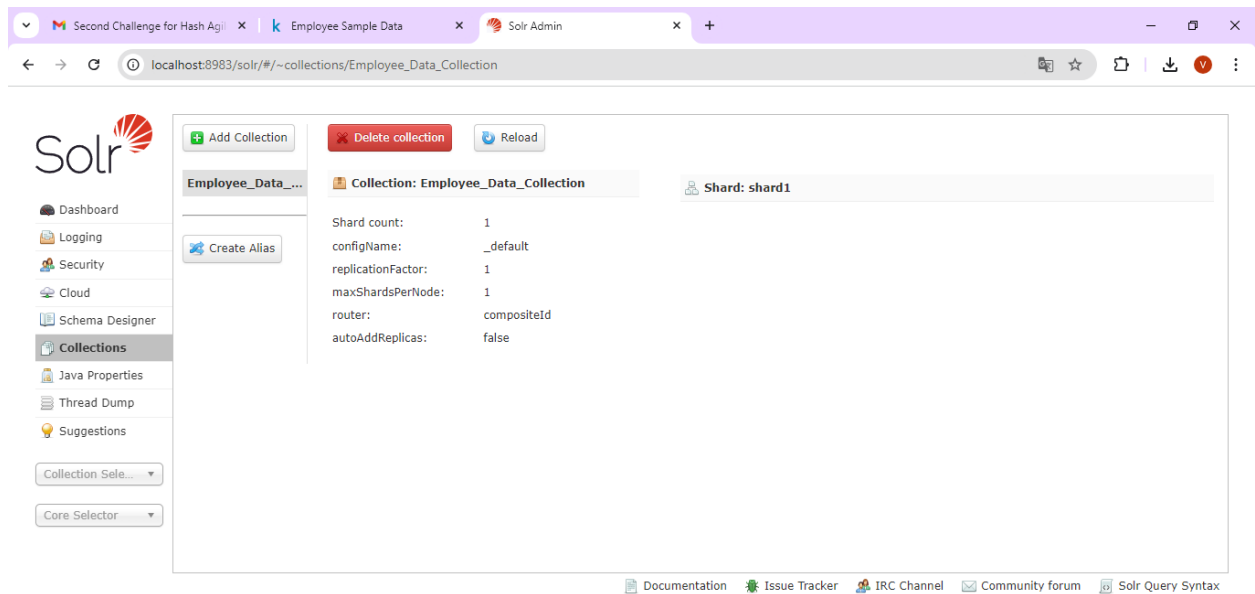
C:\Users\User>java --version
java 23 2024-09-17
Java(TM) SE Runtime Environment (build 23+37-2369)
Java HotSpot(TM) 64-Bit Server VM (build 23+37-2369, mixed mode, sharing)

C:\Users\User>solr start -c
Java HotSpot(TM) 64-Bit Server VM warning: JVM cannot use large page memory because it does not have enough privilege to lock pages in memory.
Waiting up to 30 to see Solr running on port 8983
Started Solr server on port 8983. Happy searching!

C:\Users\User>
```

Step 5: Now you can see the solr server is running on port no localhost: 8983 redirect to the host and you will see the admin panel.





Step 6: Lets get start to indexing the Employee Data on Solr.

(i) Create a collection using comment line

Example: `solr create -c Employee_Data_collection`

```
Microsoft Windows [Version 10.0.19045.4291]
(c) Microsoft Corporation. All rights reserved.

C:\Users\User>solr start -c
Java HotSpot(TM) 64-Bit Server VM warning: JVM cannot use large page memory because it does not have enough privilege to lock pages in memory.
Waiting up to 30 to see Solr running on port 8983

ERROR: Solr at http://localhost:8983/solr did not come online within 30 seconds!

C:\Users\User>solr start -c

ERROR: Process 24908 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\User>curl -X POST "http://localhost:8983/solr/Employee_Data_Collection/update/csv?commit=true" -H "Content-Type:text/csv" --data-binary @"C:/Employee Data.csv"
curl: option --data.binary: is unknown
curl: try 'curl --help' for more information

C:\Users\User>curl -X POST "http://localhost:8983/solr/Employee_Data_Collection/update/csv?commit=true" -H "Content-Type:text/csv" --data-binary @"C:/Employee Data.csv"
{
  "responseHeader":{
    "nf":1,
    "status":0,
    "QTime":5455}}

C:\Users\User>
C:\Users\User>
```

- (ii) Now indexing our employee data to a solr Employee_Data_collection using comment line.

Example: curl -X POST http://localhost:8983/solr/Employee_Data_collection/update/csv?commit=true"
-H "Content-Type: text/csv" --data-binary @"C:/Employee Data.csv"

```
{
  "Department":["IT"],
  "Gender":["Male"],
  "Ethnicity":["Asian"],
  "Age":[34],
  "Country":["China"],
  "City":["Shanghai"],
  "id":["8c52a2a3-a69a-4758-90f3-d1f247329967"],
  "Employee_ID":["E02004"],
  "Full_Name":["Cameron Lo"],
  "Job_Title":["Network Administrator"],
  "Business_Unit":["Research & Development"],
  "Hire_Date":["3/24/2019"],
  "Annual_Salary":["$83,576 "],
  "Bonus_":["0%"],
  "_version_":1811823510543138816),
  {
    "Department":["IT"],
    "Gender":["Female"],
    "Ethnicity":["Latino"],
    "Age":[39],
    "Country":["United States"],
    "City":["Seattle"],
    "id":["6dd80598-7684-4b30-811c-022575a291c0"],
    "Employee_ID":["E02005"],
    "Full_Name":["Harper Castillo"],
    "Job_Title":["IT Systems Architect"],
    "Business_Unit":["Corporate"],
    "Hire_Date":["4/7/2018"],
    "Annual_Salary":["$98,062 "],
    "Bonus_":["0%"],
    "_version_":1811823510559916032),
  {
    "Department":["Engineering"],
    "Gender":["Female"],
    "Ethnicity":["Latino"],
    "Age":[42],
    "Country":["United States"],
    "City":["Austin"],
    "id":["8cee8f47-51f1-4c8d-bd90-24948b6672ae"],
    "Employee_ID":["E02006"],
    "Full_Name":["Harper Dominguez"],
    "Job_Title":["Director"],
    "Business_Unit":["Corporate"],
```

```
C:\Users\User>curl "http://localhost:8983/solr/Employee_Data_Collection/select?q=*:*&wt=json"
```

```
{
  "responseHeader":{
    "zkConnected":true,
    "status":0,
    "QTime":374,
    "params":{
      "q":"*:*",
      "wt":"json"}},
  "response":{"numFound":2524,"start":0,"numFoundExact":true,"docs":[
    {
      "Department":["Engineering"],
      "Gender":["Male"],
      "Ethnicity":["Asian"],
      "Age":[47],
      "Country":["United States"],
      "City":["Columbus"],
      "id":["71f1f54-c8fc-4a0c-b3d8-64f3f3a365d7"],
      "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_":1811823510007316480),
    {
      "Department":["Sales"],
      "Gender":["Male"],
      "Ethnicity":["Asian"],
      "Age":[58],
      "Country":["United States"],
      "City":["Chicago"],
      "id":["fe039a13-f13e-4890-8008-0bb7b574993d"],
      "Employee_ID":["E02003"],
      "Full_Name":["Robert Patel"],
      "Job_Title":["Analyst"],
      "Business_Unit":["Corporate"],
      "Hire_Date":["10/23/2013"],
      "Annual_Salary":["$45,703 "],
      "Bonus_":["0%"],
      "_version_":1811823510510632960),
  ]}
```

```

"Hire_Date":["6/18/2005"],
"Annual_Salary":["$175,391 "],
"Bonus_":["24%"],
"_version_":1811823510576693248},
{
  "Department":["IT"],
  "Gender":["Male"],
  "Ethnicity":["Asian"],
  "Age":[62],
  "Country":["United States"],
  "City":["Phoenix"],
  "id":["3e767dd6-a64e-42cc-91a6-11065b3c2f64"],
  "Employee_ID":["E02007"],
  "Full_Name":["Ezra Vu"],
  "Job_Title":["Network Administrator"],
  "Business_Unit":["Manufacturing"],
  "Hire_Date":["4/22/2004"],
  "Annual_Salary":["$66,227 "],
  "Bonus_":["0%"],
  "Exit_Date":["2/14/2014"],
  "_version_":1811823511083155456},
{
  "Department":["Accounting"],
  "Gender":["Female"],
  "Ethnicity":["Asian"],
  "Age":[58],
  "Country":["China"],
  "City":["Chongqing"],
  "id":["099a5e5e-768c-47c8-b0f2-af6484c2ccdb"],
  "Employee_ID":["E02008"],
  "Full_Name":["Jade Hu"],
  "Job_Title":["Sr. Analyst"],
  "Business_Unit":["Specialty Products"],
  "Hire_Date":["6/27/2009"],
  "Annual_Salary":["$89,744 "],
  "Bonus_":["0%"],
  "_version_":1811823511096786944},
{
  "Department":["Finance"],
  "Gender":["Male"],
  "Ethnicity":["Asian"],
  "Age":[62],
  "Country":["China"],
  "City":["Chengdu"],

```

```

  "id":["9a14f68a-1ebe-4dd9-98bf-43e9683e675b"],
  "Employee_ID":["E02009"],
  "Full_Name":["Miles Chang"],
  "Job_Title":["Analyst II"],
  "Business_Unit":["Corporate"],
  "Hire_Date":["2/19/1999"],
  "Annual_Salary":["$69,674 "],
  "Bonus_":["0%"],
  "_version_":1811823511120904192},
{
  "Department":["IT"],
  "Gender":["Female"],
  "Ethnicity":["Caucasian"],
  "Age":[38],
  "Country":["United States"],
  "City":["Seattle"],
  "id":["6a04983a-68be-4acb-93f6-80a1fa3226cc"],
  "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_":1811823511123001344},
{
  "Department":["Finance"],
  "Gender":["Male"],
  "Ethnicity":["Caucasian"],
  "Age":[52],
  "Country":["United States"],
  "City":["Miami"],
  "id":["bde01040-21a1-4704-90cf-88a92f3f1fd9"],
  "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_":1811823511123001345}}
}}
```

C:\Users\User>

Retrieve the only the male candidate using comment line

Example: curl http://localhost:8983/solr/Employee_Data_Collection/select?q=Gender:Male&wt=json"

```
{
  "Department": ["IT"],
  "Gender": ["Male"],
  "Ethnicity": ["Asian"],
  "Age": [34],
  "Country": ["China"],
  "City": ["Shanghai"],
  "id": "0c52a2a3-a69a-4758-90f3-d1f247329967",
  "Employee_ID": ["E02004"],
  "Full_Name": ["Cameron Lo"],
  "Job_Title": ["Network Administrator"],
  "Business_Unit": ["Research & Development"],
  "Hire_Date": ["3/24/2019"],
  "Annual_Salary": ["$83,576 "],
  "Bonus_-": ["0%"],
  "_version_-": 1811823510543138816,
  {
    "Department": ["IT"],
    "Gender": ["Male"],
    "Ethnicity": ["Asian"],
    "Age": [62],
    "Country": ["United States"],
    "City": ["Phoenix"],
    "id": "3e767dd6-a64e-42cc-91a6-11065b3c2f64",
    "Employee_ID": ["E02007"],
    "Full_Name": ["Ezra Vu"],
    "Job_Title": ["Network Administrator"],
    "Business_Unit": ["Manufacturing"],
    "Hire_Date": ["4/22/2004"],
    "Annual_Salary": ["$66,227 "],
    "Bonus_-": ["0%"],
    "Exit_Date": ["2/14/2014"],
    "_version_-": 1811823511083155456,
    {
      "Department": ["Finance"],
      "Gender": ["Male"],
      "Ethnicity": ["Asian"],
      "Age": [62],
      "Country": ["China"],
      "City": ["Chengdu"],
      "id": "9a14f68a-1e8e-4dd9-98bf-43e9683e675b",
      "Employee_ID": ["E02009"],
      "Full_Name": ["Miles Chang"],
      "Job_Title": ["Analyst II"],
```

```
C:\Users\User>curl "http://localhost:8983/solr/Employee_Data_Collection/select?q=Gender:Male&wt=json"
{
  "responseHeader": {
    "zkConnected": true,
    "status": 0,
    "QTime": 210,
    "params": {
      "q": "Gender:Male",
      "wt": "json"
    }
  },
  "response": {
    "numFound": 1162,
    "start": 0,
    "numFoundExact": true,
    "docs": [
      {
        "Department": ["Engineering"],
        "Gender": ["Male"],
        "Ethnicity": ["Asian"],
        "Age": [47],
        "Country": ["United States"],
        "City": ["Columbus"],
        "id": "7c1f1f54-c8fc-4e0c-b3d8-64f3f3a365d7",
        "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_-": 1811823510007316480,
        {
          "Department": ["Sales"],
          "Gender": ["Male"],
          "Ethnicity": ["Asian"],
          "Age": [58],
          "Country": ["United States"],
          "City": ["Chicago"],
          "id": "fe039a13-f13e-4890-8008-0bb7b574993d",
          "Employee_ID": ["E02003"],
          "Full_Name": ["Robert Patel"],
          "Job_Title": ["Analyst"],
          "Business_Unit": ["Corporate"],
          "Hire_Date": ["10/23/2013"],
          "Annual_Salary": ["$45,703 "],
          "Bonus_-": ["0%"],
          "_version_-": 1811823510510632960,
          {
```



```

    "Business_Unit":["Corporate"],
    "Hire_Date":["2/19/1999"],
    "Annual_Salary":["$69,674 "],
    "Bonus _":["0%"],
    "_version_":1811823511120904192},
  {
    "Department":["Finance"],
    "Gender":["Male"],
    "Ethnicity":["Caucasian"],
    "Age":[52],
    "Country":["United States"],
    "City":["Miami"],
    "id":["bde01949-21a1-4794-90cf-88a92f3f1fd9"],
    "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_":1811823511123001345},
  {
    "Department":["IT"],
    "Gender":["Male"],
    "Ethnicity":["Latino"],
    "Age":[49],
    "Country":["United States"],
    "City":["Miami"],
    "id":["706f433c-1d80-4950-8c7b-baae8cfe29b"],
    "Employee_ID":["E02012"],
    "Full_Name":["Jameson Pena"],
    "Job_Title":["Systems Analyst"],
    "Business_Unit":["Manufacturing"],
    "Hire_Date":["10/12/2003"],
    "Annual_Salary":["$40,499 "],
    "Bonus _":["0%"],
    "_version_":1811823511123001346},
  {
    "Department":["IT"],
    "Gender":["Male"],
    "Ethnicity":["Asian"],
    "Age":[45],
    "Country":["China"],
    "City":["Chongqing"],

```

```

    "id":["6594fd4b-1b48-47c2-a083-8e2ac59f383e"],
    "Employee_ID":["E02014"],
    "Full_Name":["Jose Wong"],
    "Job_Title":["Director"],
    "Business_Unit":["Manufacturing"],
    "Hire_Date":["11/15/2017"],
    "Annual_Salary":["$150,558 "],
    "Bonus _":["23%"],
    "_version_":1811823511195353088},
  {
    "Department":["Marketing"],
    "Gender":["Male"],
    "Ethnicity":["Caucasian"],
    "Age":[36],
    "Country":["United States"],
    "City":["Miami"],
    "id":["207062f4-f15c-4f02-b676-9e8aa1a8c193"],
    "Employee_ID":["E02015"],
    "Full_Name":["Lucas Richardson"],
    "Job_Title":["Manager"],
    "Business_Unit":["Corporate"],
    "Hire_Date":["7/22/2018"],
    "Annual_Salary":["$118,912 "],
    "Bonus _":["8%"],
    "_version_":1811823511195353089},
  {
    "Department":["Marketing"],
    "Gender":["Male"],
    "Ethnicity":["Black"],
    "Age":[42],
    "Country":["United States"],
    "City":["Phoenix"],
    "id":["603084fe-569a-46b5-a9e7-ccd4c7d309b0"],
    "Employee_ID":["E02016"],
    "Full_Name":["Jacob Moore"],
    "Job_Title":["Sr. Manager"],
    "Business_Unit":["Corporate"],
    "Hire_Date":["3/24/2021"],
    "Annual_Salary":["$131,422 "],
    "Bonus _":["15%"],
    "_version_":1811823511211081728}}
})

```

C:\Users\User>

Retrieve the specific file using comment line

Example: curl http://localhost:8983/solr/Employee_Data_Collection/select?q=Department:IT&wt=json

```
c:\Users\User>curl "http://localhost:8983/solr/Employee_Data_Collection/select?q=Department:IT&wt=json"
```

```
{
  "responseHeader":{
    "zkConnected":true,
    "status":0,
    "QTime":794,
    "params":{
      "q":"Department:IT",
      "wt":"json"
    }
  },
  "response":{"numFound":694,"start":0,"numFoundExact":true,"docs":[
    {
      "Department":["IT"],
      "Gender":["Male"],
      "Ethnicity":["Asian"],
      "Age":[34],
      "Country":["China"],
      "City":["Shanghai"],
      "id":["0c52a2a3-a69a-4758-90f3-d1f247329967"],
      "Employee_ID":["E02004"],
      "Full_Name":["Cameron Lo"],
      "Job_Title":["Network Administrator"],
      "Business_Unit":["Research & Development"],
      "Hire_Date":["3/24/2019"],
      "Annual_Salary":["$83,576 "],
      "Bonus _":["0%"],
      "_version_":1811823510543138816,
    },
    {
      "Department":["IT"],
      "Gender":["Female"],
      "Ethnicity":["Latino"],
      "Age":[39],
      "Country":["United States"],
      "City":["Seattle"],
      "id":["6dd80598-7684-4b30-811c-022575a291c0"],
      "Employee_ID":["E02005"],
      "Full_Name":["Harper Castillo"],
      "Job_Title":["IT Systems Architect"],
      "Business_Unit":["Corporate"],
      "Hire_Date":["4/7/2018"],
      "Annual_Salary":["$98,062 "],
      "Bonus _":["0%"],
      "_version_":1811823510559916032,
    },
    {
      "Department":["IT"],
      "Gender":["Male"],
      "Ethnicity":["Asian"],
      "Age":[02],
      "Country":["United States"],
      "City":["Phoenix"],
      "id":["3e767dd6-a04e-42cc-91a6-11065b3c2f64"],
      "Employee_ID":["E02007"],
      "Full_Name":["Ezra Vu"],
      "Job_Title":["Network Administrator"],
      "Business_Unit":["Manufacturing"],
      "Hire_Date":["4/22/2004"],
      "Annual_Salary":["$66,227 "],
      "Bonus _":["0%"],
      "Exit_Date":["2/14/2014"],
      "_version_":1811823511083155456,
    },
    {
      "Department":["IT"],
      "Gender":["Female"],
      "Ethnicity":["Caucasian"],
      "Age":[38],
      "Country":["United States"],
      "City":["Seattle"],
      "id":["6a04983a-68be-4acb-93f6-80a1fa3226cc"],
      "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_":1811823511123001344,
    },
    {
      "Department":["IT"],
      "Gender":["Male"],
      "Ethnicity":["Latino"],
      "Age":[49],
      "Country":["United States"],
      "City":["Miami"],
      "id":["7064a33c-1d80-4950-8c7b-baae8cfe29b"],
      "Employee_ID":["E02012"],
      "Full_Name":["Jamason Pena"],
      "Job_Title":["Systems Analyst"],
      "Business_Unit":["Manufacturing"],
    }
  ]}
```

```

    "Hire_Date":["10/12/2003"],
    "Annual_Salary":["$40,499 "],
    "Bonus_":["0%"],
    "_version_":1811823511123001346},
  {
    "Department":["IT"],
    "Gender":["Male"],
    "Ethnicity":["Asian"],
    "Age":45,
    "Country":["China"],
    "City":["Chongqing"],
    "id":["6594fd4b-1b48-47c2-a083-0e2ac59f383e"],
    "Employee_ID":["E02014"],
    "Full_Name":["Jose Wong"],
    "Job_Title":["Director"],
    "Business_Unit":["Manufacturing"],
    "Hire_Date":["11/15/2017"],
    "Annual_Salary":["$150,558 "],
    "Bonus_":["23%"],
    "_version_":1811823511195353088},
  {
    "Department":["IT"],
    "Gender":["Female"],
    "Ethnicity":["Asian"],
    "Age":62,
    "Country":["United States"],
    "City":["Miami"],
    "id":["1afdad3ce-9bd0-4b7c-8a82-0915022dc4e1"],
    "Employee_ID":["E02017"],
    "Full_Name":["Luna Lu"],
    "Job_Title":["IT Systems Architect"],
    "Business_Unit":["Corporate"],
    "Hire_Date":["7/26/1997"],
    "Annual_Salary":["$64,208 "],
    "Bonus_":["0%"],
    "_version_":1811823511227858944},
  {
    "Department":["IT"],
    "Gender":["Male"],
    "Ethnicity":["Asian"],
    "Age":29,
    "Country":["United States"],
    "City":["Seattle"],
    "id":["5b08ad39-be3a-4af4-af18-4ab2b3948c2c"],
    "Employee_ID":["E02020"],
    "Full_Name":["Jordan Kumar"],
    "Job_Title":["Service Desk Analyst"],
    "Business_Unit":["Specialty Products"],
    "Hire_Date":["11/11/2017"],
    "Annual_Salary":["$95,729 "],
    "Bonus_":["0%"],
    "_version_":1811823511260364800},
  {
    "Department":["IT"],
    "Gender":["Female"],
    "Ethnicity":["Black"],
    "Age":43,
    "Country":["United States"],
    "City":["Phoenix"],
    "id":["2722cc34-dd04-4924-99c5-b7070eee941f"],
    "Employee_ID":["E02023"],
    "Full_Name":["Lillian Lewis"],
    "Job_Title":["Technical Architect"],
    "Business_Unit":["Research & Development"],
    "Hire_Date":["8/14/2013"],
    "Annual_Salary":["$83,323 "],
    "Bonus_":["0%"],
    "Exit_Date":["3/31/2019"],
    "_version_":1811823511260364803},
  {
    "Department":["IT"],
    "Gender":["Male"],
    "Ethnicity":["Asian"],
    "Age":50,
    "Country":["China"],
    "City":["Shanghai"],
    "id":["55700e89-a77f-40bd-bcd1-55466f837e04"],
    "Employee_ID":["E02031"],
    "Full_Name":["Wyatt Dinh"],
    "Job_Title":["System Administrator"],
    "Business_Unit":["Specialty Products"],
    "Hire_Date":["3/15/2002"],
    "Annual_Salary":["$72,860 "],
    "Bonus_":["0%"],
    "_version_":1811823511474274304}}
})

```

C:\Users\User>

Successfully indexed employee data in the Solr employee data collection.