Visualization

April 12, 2017

```
In [1]: import pandas as pd
        from IPython.display import display
        %matplotlib inline

In [2]: # Display the data read from the file

        df = pd.read_csv('data+scientist_india.csv')
        df
```

```
Out[2]:           Jobkey                                          Jobtitle  \
        0    4d56dc8dbcb17c2e            Data Scientist: Advanced Analytics
        1    1fcc3e76efb71d80                                Data Scientist
        2    8bb81ee54e2c5811   Data Scientist – OrgSolutions, McKinsey Solutions
        3    1659078bc98c8660                        Data Scientist (Intern)
        4    e4239b0a79dc86d6                                Data Scientist
        5    00764778f3941899          RPA– Data Scientist / Machine learning
        6    e18dabeea8e48fef                     Machine Learning Engineer
        7    ac6663a90377f9c5                                Data Scientist
        8    bb261c0c542f384e                                Data Scientist
        9    b8193f8772dd054d                         Senior Data Scientist
        10   3513a964189c3b55           Data Analyst / Data Science (PRO Team)
        11   7fa12a8131edbbfa                                Data Scientist
        12   ae367db047859360                             Data Scientist II
        13   868ffe242d332f70             IOT Data Scientist and Analytics
        14   38d32e3a0940ea01                   Manager – Data & Analytics
        15   c3c219c86be3e331                                 Data Engineer
        16   81e95f3b992c322c                             Sr Data Scientist
        17   1dc272c43b7e6696                                Data Scientist
        18   2e49466ea53825a6    Sr Data & Information Architect, DIG IT–Finance
        19   88a92f53e18cc1ac        Data Scientist for a Funded Startup at Delhi
        20   659679d775126307               Data Scientist: Cognitive Computing
        21   4d91c4f48dff8cf1   Senior Research Analyst – Global Financial Ins...
        22   9a810205c40f8f29                                Data Scientist
        23   71f89200e0425516   Senior Research Engineer/Data Scientist Bangalore
        24   86eff5021e6fd3a9                                Data Scientist
        25   1fcc3e76efb71d80                                Data Scientist
        26   8bb81ee54e2c5811   Data Scientist – OrgSolutions, McKinsey Solutions
        27   1659078bc98c8660                        Data Scientist (Intern)
```

```
28   e4239b0a79dc86d6                                     Data Scientist
29   00764778f3941899            RPA- Data Scientist / Machine learning
..                ...                                               ...
470  0ead7e2512b95844                                     Data Scientist
471  0e13741559af327f                                     Data Scientist
472  100a149c0e402f2b                                     Data Scientist
473  d9de0986c9cdcd8d                                     Data Scientist
474  2830c0996673ed99                                     Data Scientist
475  88a92f53e18cc1ac        Data Scientist for a Funded Startup at Delhi
476  659679d775126307                 Data Scientist: Cognitive Computing
477  4d91c4f48dff8cf1     Senior Research Analyst – Global Financial Ins...
478  9a810205c40f8f29                                     Data Scientist
479  71f89200e0425516     Senior Research Engineer/Data Scientist Bangalore
480  86eff5021e6fd3a9                                     Data Scientist
481  62780ee985681ad2                                       R Programmer
482  648c02ce8eaeac84                                     Data Scientist
483  ed7b73cda16f722f                    Data Scientist (Machine Learning)
484  edb504454a9f7d8f                                       R Programmer
485  d79e42eefdbf4785                                     Data Scientist
486  491263b98c974209                                     Data Scientist
487  3074a76c043dbd41                                     Data Scientist
488  a669444e7c10df2f                                     Data Scientist
489  bfca376a30ca80c4                                     Data Scientist
490  d5bd969722ca0123     Walk in for Laboratory Technician, Attendant &...
491  d011bdda6a322413                     Graduate Engineer Trainee (IIT)
492  353222bae3b82ae2                                     Data Scientist
493  5426018deebb71e4                                     Data Scientist
494  0ead7e2512b95844                                     Data Scientist
495  0e13741559af327f                                     Data Scientist
496  100a149c0e402f2b                                     Data Scientist
497  d9de0986c9cdcd8d                                     Data Scientist
498  2830c0996673ed99                                     Data Scientist
499  b13d2635baad9d1c                                     Data Scientist

          City State Country           FormattedLocation  \
0          NaN   NaN      IN                         India
1    Bangalore    KA      IN          Bangalore, Karnataka
2    New Delhi    DL      IN              New Delhi, Delhi
3    Hyderabad    AP      IN     Hyderabad, Andhra Pradesh
4         Pune    MH      IN            Pune, Maharashtra
5    Bangalore    KA      IN          Bangalore, Karnataka
6    Hyderabad    AP      IN     Hyderabad, Andhra Pradesh
7    Hyderabad    AP      IN     Hyderabad, Andhra Pradesh
8      Chennai    TN      IN            Chennai, Tamil Nadu
9      Chennai    TN      IN            Chennai, Tamil Nadu
10     Gurgaon    HR      IN             Gurgaon, Haryana
11       Delhi    DL      IN                  Delhi, Delhi
12   Bangalore    KA      IN          Bangalore, Karnataka
```

```
13   Bangalore      KA    IN        Bangalore, Karnataka
14   Bangalore      KA    IN        Bangalore, Karnataka
15   Bangalore      KA    IN        Bangalore, Karnataka
16   Bangalore      KA    IN        Bangalore, Karnataka
17   Hyderabad      AP    IN   Hyderabad, Andhra Pradesh
18   Bangalore      KA    IN        Bangalore, Karnataka
19       Delhi      DL    IN                Delhi, Delhi
20         NaN     NaN    IN                       India
21   New Delhi      DL    IN            New Delhi, Delhi
22   Bangalore      KA    IN        Bangalore, Karnataka
23   Bangalore      KA    IN        Bangalore, Karnataka
24         NaN     NaN    IN                       India
25   Bangalore      KA    IN        Bangalore, Karnataka
26   New Delhi      DL    IN            New Delhi, Delhi
27   Hyderabad      AP    IN   Hyderabad, Andhra Pradesh
28        Pune      MH    IN          Pune, Maharashtra
29   Bangalore      KA    IN        Bangalore, Karnataka
..         ...     ...    ...                        ...
470  Hyderabad      AP    IN   Hyderabad, Andhra Pradesh
471     Mumbai      MH    IN         Mumbai, Maharashtra
472 Navi Mumbai     MH    IN   Navi Mumbai, Maharashtra
473        NaN     NaN    IN                       India
474   Guwahati      AS    IN            Guwahati, Assam
475      Delhi      DL    IN                Delhi, Delhi
476        NaN     NaN    IN                       India
477  New Delhi      DL    IN            New Delhi, Delhi
478  Bangalore      KA    IN        Bangalore, Karnataka
479  Bangalore      KA    IN        Bangalore, Karnataka
480        NaN     NaN    IN                       India
481      Noida      UP    IN        Noida, Uttar Pradesh
482      Delhi      DL    IN                Delhi, Delhi
483        NaN     NaN    IN                       India
484      Noida      UP    IN        Noida, Uttar Pradesh
485    Gurgaon      HR    IN           Gurgaon, Haryana
486       Pune      MH    IN          Pune, Maharashtra
487  Bangalore      KA    IN        Bangalore, Karnataka
488  Bangalore      KA    IN        Bangalore, Karnataka
489       Pune      MH    IN          Pune, Maharashtra
490        NaN     NaN    IN                       India
491 Navi Mumbai     MH    IN   Navi Mumbai, Maharashtra
492    Gurgaon      HR    IN           Gurgaon, Haryana
493  Bangalore      KA    IN        Bangalore, Karnataka
494  Hyderabad      AP    IN   Hyderabad, Andhra Pradesh
495     Mumbai      MH    IN         Mumbai, Maharashtra
496 Navi Mumbai     MH    IN   Navi Mumbai, Maharashtra
497        NaN     NaN    IN                       India
498   Guwahati      AS    IN            Guwahati, Assam
499    Chennai      TN    IN         Chennai, Tamil Nadu
```

```
                                          Date  \
0     Mon, 27 Mar 2017 20:01:40 GMT
1     Thu, 30 Mar 2017 10:16:06 GMT
2     Mon, 13 Feb 2017 17:35:02 GMT
3     Mon, 03 Apr 2017 08:23:39 GMT
4     Fri, 24 Mar 2017 05:58:13 GMT
5     Wed, 22 Mar 2017 07:43:59 GMT
6     Fri, 17 Mar 2017 08:20:57 GMT
7     Thu, 16 Feb 2017 17:34:35 GMT
8     Wed, 15 Feb 2017 06:20:10 GMT
9     Wed, 15 Feb 2017 06:20:04 GMT
10    Thu, 09 Mar 2017 18:06:35 GMT
11    Tue, 21 Mar 2017 13:18:38 GMT
12    Thu, 23 Mar 2017 10:29:09 GMT
13    Thu, 16 Feb 2017 11:06:14 GMT
14    Tue, 11 Apr 2017 10:18:23 GMT
15    Thu, 23 Mar 2017 10:15:16 GMT
16    Thu, 06 Apr 2017 10:20:32 GMT
17    Wed, 01 Feb 2017 10:15:49 GMT
18    Fri, 31 Mar 2017 10:17:13 GMT
19    Sat, 11 Feb 2017 16:01:35 GMT
20    Mon, 27 Mar 2017 20:08:29 GMT
21    Fri, 31 Mar 2017 18:48:15 GMT
22    Sat, 08 Apr 2017 04:39:32 GMT
23    Tue, 21 Mar 2017 21:49:50 GMT
24    Wed, 01 Mar 2017 11:58:47 GMT
25    Thu, 30 Mar 2017 10:16:06 GMT
26    Mon, 13 Feb 2017 17:35:02 GMT
27    Mon, 03 Apr 2017 08:23:39 GMT
28    Fri, 24 Mar 2017 05:58:13 GMT
29    Wed, 22 Mar 2017 07:43:59 GMT
..                             ...
470   Wed, 22 Feb 2017 10:52:02 GMT
471   Mon, 13 Mar 2017 10:18:46 GMT
472   Tue, 04 Apr 2017 07:23:45 GMT
473   Thu, 02 Feb 2017 22:35:47 GMT
474   Mon, 10 Apr 2017 10:44:09 GMT
475   Sat, 11 Feb 2017 16:01:35 GMT
476   Mon, 27 Mar 2017 20:08:29 GMT
477   Fri, 31 Mar 2017 18:48:15 GMT
478   Sat, 08 Apr 2017 04:39:32 GMT
479   Tue, 21 Mar 2017 21:49:50 GMT
480   Wed, 01 Mar 2017 11:58:47 GMT
481   Wed, 22 Mar 2017 09:58:10 GMT
482   Sat, 01 Apr 2017 05:11:07 GMT
483   Wed, 29 Mar 2017 05:05:49 GMT
484   Thu, 16 Mar 2017 10:03:16 GMT
```

```
485    Tue, 11 Apr 2017 08:34:08 GMT
486    Sat, 01 Apr 2017 05:11:06 GMT
487    Wed, 29 Mar 2017 05:24:17 GMT
488    Thu, 06 Apr 2017 10:31:15 GMT
489    Fri, 31 Mar 2017 05:15:31 GMT
490    Mon, 10 Apr 2017 06:07:01 GMT
491    Mon, 10 Apr 2017 17:49:25 GMT
492    Fri, 24 Mar 2017 05:45:32 GMT
493    Mon, 27 Mar 2017 19:55:39 GMT
494    Wed, 22 Feb 2017 10:52:02 GMT
495    Mon, 13 Mar 2017 10:18:46 GMT
496    Tue, 04 Apr 2017 07:23:45 GMT
497    Thu, 02 Feb 2017 22:35:47 GMT
498    Mon, 10 Apr 2017 10:44:09 GMT
499    Sat, 18 Mar 2017 06:11:29 GMT


                                               Snippet   \
0     Will be able to manage and help to grow the Da...
1     As a data scientist, you'd be working towards ...
2     As one of the fastest-growing parts of our fir...
3     Work on a small data science team in charge of...
4     Build mathematical models using the data; Crea...
5     Job Description for Machine Learning and Data ...
6     Create language models from petabytes of text ...
7     POC/ POV / IP in Data Science and Big Data Ana...
8     Must have solid understanding of statistical m...
9     Strong understanding of Algorithms, Data Struc...
10    Job Description We are looking for a Data Scie...
11    As a Data Scientist, you will:. Using best-in-...
12    Data Scientist II. Quantitative analysis, data...
13    What you'll be doing – Use streaming analytics...
14    Statistical analyses, advanced data visualizat...
15    Understands logical and physical data models, ...
16    Previous experience working with large data se...
17    We are looking for hands-on data scientists to...
18    Implement Data warehouse &amp; Big/Small data ...
19    Data Scientist Required Location:. We are hiri...
20    Streaming Data Analytics. Experience in marsha...
21    Data Scientists are creative problem solvers w...
22    Experience in applying everything from logisti...
23    Senior Research Engineer / Data Scientist. We ...
24    The Data Scientist &amp; Data Warehouse Expert...
25    As a data scientist, you'd be working towards ...
26    As one of the fastest-growing parts of our fir...
27    Work on a small data science team in charge of...
28    Build mathematical models using the data; Crea...
29    Job Description for Machine Learning and Data ...
..                                                  ...
```

```
470   ProKarma is currently hiring for Data Scientis...
471   We are looking for two data scientists. Master...
472   Data Scientists at SMARTe work on solving prob...
473   Data mining techniques. Paysafe is currently s...
474   Zaloni's Bedrock Data Management Platform™ is ...
475   Data Scientist Required Location:. We are hiri...
476   Streaming Data Analytics. Experience in marsha...
477   Data Scientists are creative problem solvers w...
478   Experience in applying everything from logisti...
479   Senior Research Engineer / Data Scientist. We ...
480   The Data Scientist &amp; Data Warehouse Expert...
481   As a Data Scientist responsible for R programm...
482   Java, Scala, C , JavaScript, Python, R, SQL, J...
483   We are looking for an exceptional data analyst...
484   As a Data Scientist responsible for R programm...
485   Work on large data sets of structured, semi-st...
486   The primary responsibility would be to use sta...
487   Strong background in Natural Language Processi...
488   Be a data enthusiast and a data skeptic; Have ...
489   Machine Learning, Times Series, Data Mining, M...
490   NICED Recruitment 2017 – Walk in for Laborator...
491   Job Responsibilities : 1. To contribute in the...
492   Solve new business problems through analytical...
493   Big Data Tools:. Conducts advanced data analys...
494   ProKarma is currently hiring for Data Scientis...
495   We are looking for two data scientists. Master...
496   Data Scientists at SMARTe work on solving prob...
497   Data mining techniques. Paysafe is currently s...
498   Zaloni's Bedrock Data Management Platform™ is ...
499   Develop analytical models to answer high-level...
```

```
                                       URL    Latitude   Longitud
0     http://www.indeed.co.in/viewjob?jk=4d56dc8dbcb...        NaN         Na
1     http://www.indeed.co.in/viewjob?jk=1fcc3e76efb...   12.975275    77.5989
2     http://www.indeed.co.in/viewjob?jk=8bb81ee54e2...   28.634615    77.2197
3     http://www.indeed.co.in/viewjob?jk=1659078bc98...   17.373627    78.4725
4     http://www.indeed.co.in/viewjob?jk=e4239b0a79d...   18.519230    73.8516
5     http://www.indeed.co.in/viewjob?jk=00764778f39...   12.975275    77.5989
6     http://www.indeed.co.in/viewjob?jk=e18dabeea8e...   17.373627    78.4725
7     http://www.indeed.co.in/viewjob?jk=ac6663a9037...   17.373627    78.4725
8     http://www.indeed.co.in/viewjob?jk=bb261c0c542...   13.085165    80.2747
9     http://www.indeed.co.in/viewjob?jk=b8193f8772d...   13.085165    80.2747
10    http://www.indeed.co.in/viewjob?jk=3513a964189...   28.464285    77.0329
11    http://www.indeed.co.in/viewjob?jk=7fa12a8131e...   28.664835    77.2142
12    http://www.indeed.co.in/viewjob?jk=ae367db0478...   12.975275    77.5989
13    http://www.indeed.co.in/viewjob?jk=868ffe242d3...   12.975275    77.5989
14    http://www.indeed.co.in/viewjob?jk=38d32e3a094...   12.975275    77.5989
15    http://www.indeed.co.in/viewjob?jk=c3c219c86be...   12.975275    77.5989
```

```
16    http://www.indeed.co.in/viewjob?jk=81e95f3b992...    12.975275    77.5989
17    http://www.indeed.co.in/viewjob?jk=1dc272c43b7...    17.373627    78.4725
18    http://www.indeed.co.in/viewjob?jk=2e49466ea53...    12.975275    77.5989
19    http://www.indeed.co.in/viewjob?jk=88a92f53e18...    28.664835    77.2142
20    http://www.indeed.co.in/viewjob?jk=659679d7751...         NaN         Na
21    http://www.indeed.co.in/viewjob?jk=4d91c4f48df...    28.634615    77.2197
22    http://www.indeed.co.in/viewjob?jk=9a810205c40...    12.975275    77.5989
23    http://www.indeed.co.in/viewjob?jk=71f89200e04...    12.975275    77.5989
24    http://www.indeed.co.in/viewjob?jk=86eff5021e6...         NaN         Na
25    http://www.indeed.co.in/viewjob?jk=1fcc3e76efb...    12.975275    77.5989
26    http://www.indeed.co.in/viewjob?jk=8bb81ee54e2...    28.634615    77.2197
27    http://www.indeed.co.in/viewjob?jk=1659078bc98...    17.373627    78.4725
28    http://www.indeed.co.in/viewjob?jk=e4239b0a79d...    18.519230    73.8516
29    http://www.indeed.co.in/viewjob?jk=00764778f39...    12.975275    77.5989
..                                                  ...         ...         ..
470   http://www.indeed.co.in/viewjob?jk=0ead7e2512b...    17.373627    78.4725
471   http://www.indeed.co.in/viewjob?jk=0e13741559a...    19.013737    72.8461
472   http://www.indeed.co.in/viewjob?jk=100a149c0e4...    19.115385    73.0549
473   http://www.indeed.co.in/viewjob?jk=d9de0986c9c...         NaN         Na
474   http://www.indeed.co.in/viewjob?jk=2830c099667...    26.184067    91.7472
475   http://www.indeed.co.in/viewjob?jk=88a92f53e18...    28.664835    77.2142
476   http://www.indeed.co.in/viewjob?jk=659679d7751...         NaN         Na
477   http://www.indeed.co.in/viewjob?jk=4d91c4f48df...    28.634615    77.2197
478   http://www.indeed.co.in/viewjob?jk=9a810205c40...    12.975275    77.5989
479   http://www.indeed.co.in/viewjob?jk=71f89200e04...    12.975275    77.5989
480   http://www.indeed.co.in/viewjob?jk=86eff5021e6...         NaN         Na
481   http://www.indeed.co.in/viewjob?jk=62780ee9856...    28.579670    77.3296
482   http://www.indeed.co.in/viewjob?jk=648c02ce8ea...    28.664835    77.2142
483   http://www.indeed.co.in/viewjob?jk=ed7b73cda16...         NaN         Na
484   http://www.indeed.co.in/viewjob?jk=edb504454a9...    28.579670    77.3296
485   http://www.indeed.co.in/viewjob?jk=d79e42eefdb...    28.464285    77.0329
486   http://www.indeed.co.in/viewjob?jk=491263b98c9...    18.519230    73.8516
487   http://www.indeed.co.in/viewjob?jk=3074a76c043...    12.975275    77.5989
488   http://www.indeed.co.in/viewjob?jk=a669444e7c1...    12.975275    77.5989
489   http://www.indeed.co.in/viewjob?jk=bfca376a30c...    18.519230    73.8516
490   http://www.indeed.co.in/viewjob?jk=d5bd969722c...         NaN         Na
491   http://www.indeed.co.in/viewjob?jk=d011bdda6a3...    19.115385    73.0549
492   http://www.indeed.co.in/viewjob?jk=353222bae3b...    28.464285    77.0329
493   http://www.indeed.co.in/viewjob?jk=5426018deeb...    12.975275    77.5989
494   http://www.indeed.co.in/viewjob?jk=0ead7e2512b...    17.373627    78.4725
495   http://www.indeed.co.in/viewjob?jk=0e13741559a...    19.013737    72.8461
496   http://www.indeed.co.in/viewjob?jk=100a149c0e4...    19.115385    73.0549
497   http://www.indeed.co.in/viewjob?jk=d9de0986c9c...         NaN         Na
498   http://www.indeed.co.in/viewjob?jk=2830c099667...    26.184067    91.7472
499   http://www.indeed.co.in/viewjob?jk=b13d2635baa...    13.085165    80.2747

      FormattedRelativeTime
0                 14 days ago
```

```
1           12 days ago
2           30+ days ago
3            8 days ago
4           18 days ago
5           20 days ago
6           25 days ago
7           30+ days ago
8           30+ days ago
9           30+ days ago
10          30+ days ago
11          21 days ago
12          19 days ago
13          30+ days ago
14           7 hours ago
15          19 days ago
16           5 days ago
17          30+ days ago
18          11 days ago
19          30+ days ago
20          14 days ago
21          10 days ago
22           3 days ago
23          20 days ago
24          30+ days ago
25          12 days ago
26          30+ days ago
27           8 days ago
28          18 days ago
29          20 days ago
..          ...
470         30+ days ago
471         29 days ago
472          7 days ago
473         30+ days ago
474          1 day ago
475         30+ days ago
476         14 days ago
477         10 days ago
478          3 days ago
479         20 days ago
480         30+ days ago
481         20 days ago
482         10 days ago
483         13 days ago
484         26 days ago
485          8 hours ago
486         10 days ago
487         13 days ago
```

```
488              5 days ago
489             11 days ago
490              1 day ago
491            23 hours ago
492             18 days ago
493             14 days ago
494            30+ days ago
495             29 days ago
496              7 days ago
497            30+ days ago
498              1 day ago
499             24 days ago

[500 rows x 12 columns]
```
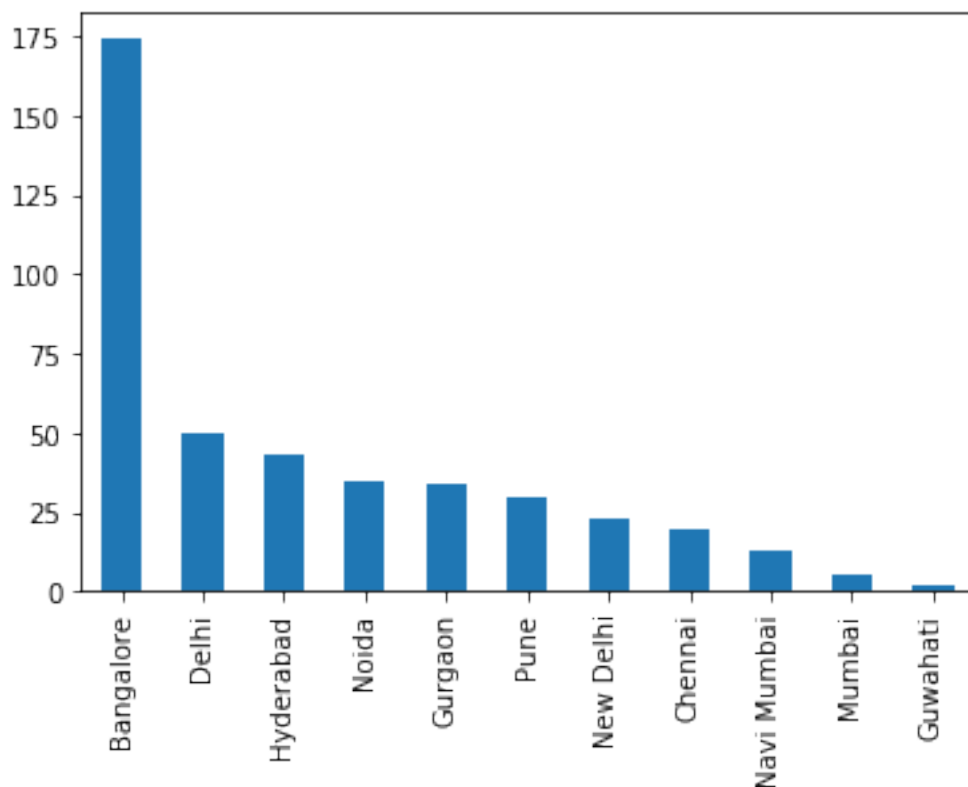
In [3]: *#Data Science Jobs based on Cities*

```
df['City'].value_counts().plot(kind = 'bar')
```

Out[3]: <matplotlib.axes._subplots.AxesSubplot at 0x1ce2a1f50f0>

In [4]: *#Required Skills for data Scientist*

```
          df_skills = pd.read_csv('skills_data+scientist_india.csv')
          (df_skills)

Out[4]:          Skill  Count
          0       Hadoop    236
          1       Python    365
          2            R    424
          3         Hive    137
          4        HBase     83
          5         Perl     62
          6      Tableau     94
          7        Spark    155
          8          SQL    299
          9         Java    226
          10   MapReduce     74
          11      Matlab     61
          12         Pig    123
          13         SAS    134
          14        SPSS    101
          15       NoSQL    102
          16     MongoDB     52
          17      Mahout     15
          18  JavaScript     52
          19   Cassandra     47
          20        Ruby     20
          21       Excel     20
          22       Scala     18
          23          D3     30
```

In [5]: # Top 10 skills looked for ny companies

```
          df_skills=df_skills.sort(['Count'], ascending=[False])
          df_skills.head(10)
```
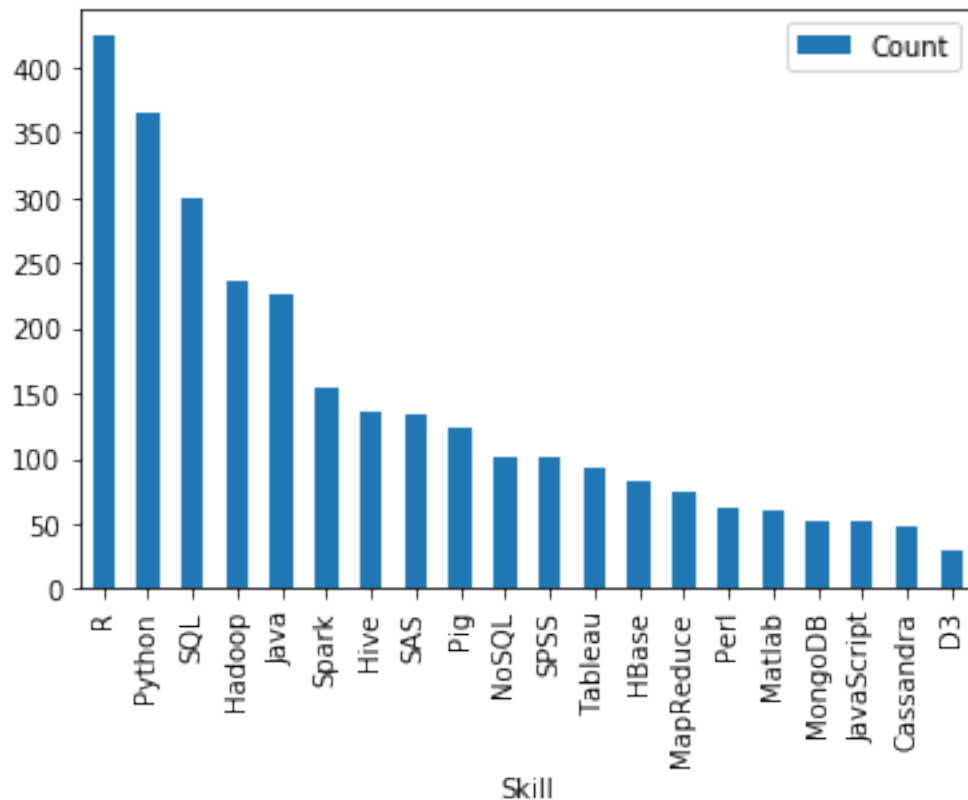
C:\Users\I322343\AppData\Local\Continuum\Anaconda3\lib\site-packages\ipykernel__ma
  app.launch_new_instance()

```
Out[5]:       Skill  Count
          2        R    424
          1   Python    365
          8      SQL    299
          0   Hadoop    236
          9     Java    226
          7    Spark    155
          3     Hive    137
          13     SAS    134
          12     Pig    123
          15   NoSQL    102
```

```
In [6]: df_skills.head(20).plot(kind = 'bar', x='Skill', y='Count')

Out[6]: <matplotlib.axes._subplots.AxesSubplot at 0x1ce29e932b0>
```



```
In [7]: #Consolidated method to do all clean up and visualization

        def job_vis(csv_file):
            df_skills = pd.read_csv(csv_file)

            print('Skills required for a data scientist are: ')
            display(df_skills['Skill'])

            print('Top 10 skills looked for by companies WRT job postings are: ')
            df_skills=df_skills.sort_values(['Count'], ascending=[False])
            display(df_skills.head(10))

            print("Let's see this data in bar graph")
            df_skills.head(20).plot(kind = 'bar', x='Skill', y='Count')

In [ ]: job_vis('skills_data+scientist_india.csv')

In [1]: import os
        os.environ
```

```
Out[1]: environ({'ACLOCAL_PATH': 'C:\\Program Files\\Git\\mingw64\\share\\aclocal;C
```