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Continuous Assessment 4 – Programing for Big Data

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Data has been placed in a dataframe ‘df’ and exported to a file ‘dataframe2.csv’

Using the data in this file I have tried to find some interesting details in the data.

```
pivot1 =
pd.pivot_table(df,index='user',values=['added','deleted','modified'],aggfunc=np.sum,margins=True)

pivot1
Out[99]:
                                                        added  deleted  modified
user
/OU=Domain Control Validated/CN=svn.company.net         0.0      0.0      24.0
Alan                                                    9.0      6.0      15.0
Dave                                                    10.0      0.0      66.0
Freddie                                                  0.0      0.0       9.0
Jimmy                                                    690.0     66.0    401.0
Nicky                                                    0.0      0.0       7.0
Thomas                                                     87.0    663.0    609.0
Vincent                                                   260.0     32.0      45.0
ajon0002                                                 0.0      0.0       9.0
murari.krishnan                                          0.0      0.0       1.0
All                                                     1056.0    767.0    1186.0
```

Doing a pivot on the data we can see the total number of ‘added’, ‘deleted’ and ‘modified’ items were 1056, 767 and 1186 respectively and we can see the person that made the most ‘adds’ was Jimmy with 690, the person who made the most ‘deletes’ was Thomas with 663 and the person who made the most ‘modifications’ was also Thomas with 609.

We can group the timestamps by month and see the total values per month of each type of commit object :

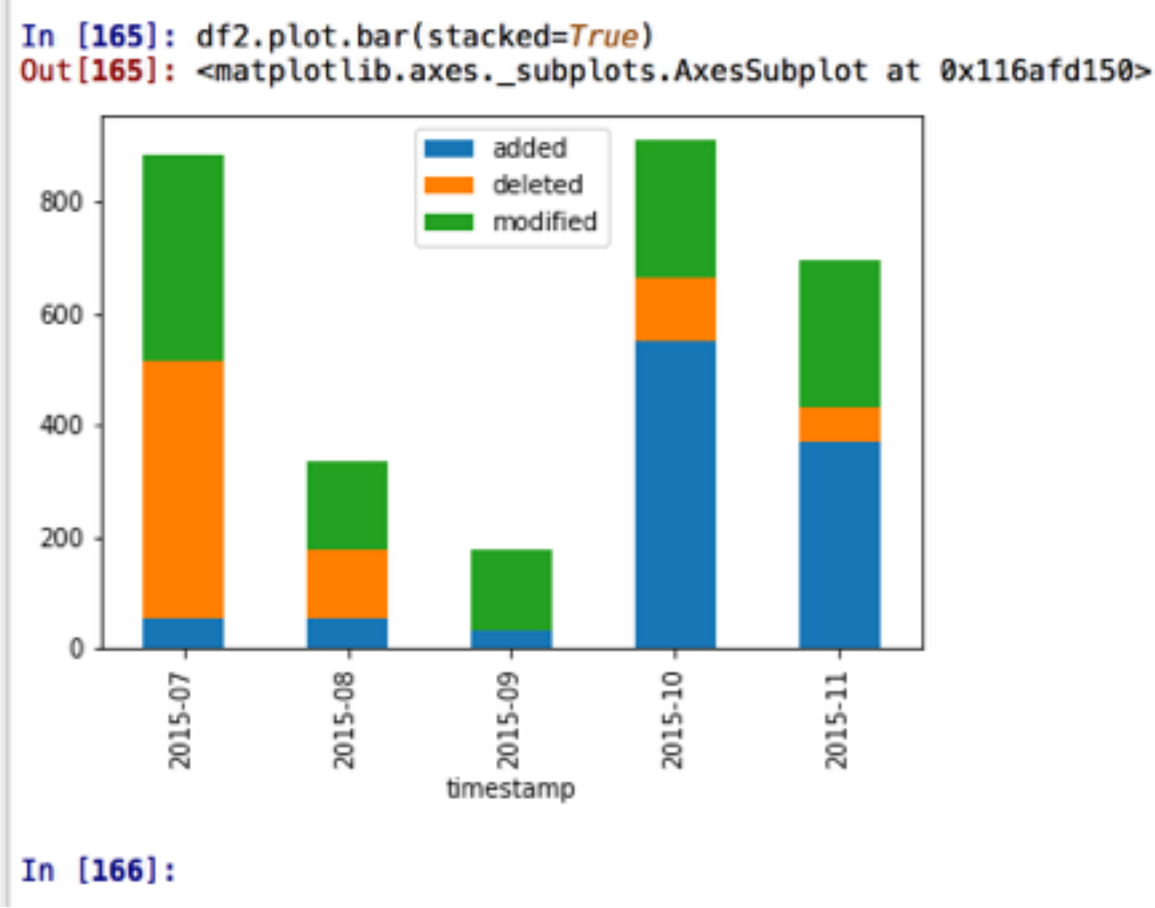
```
df['timestamp']=pd.to_datetime(df['timestamp'], format ='%Y-%m-%d %H:%M:
%S’).dt.to_period('M')

pivot1 = pd.pivot_table(df,index='timestamp',values=['added','deleted','modified'],aggfunc=np.sum)

pivot1
Out[52]:
             added  deleted  modified
timestamp
2015-07        53      463      371
2015-08        53      125      158
2015-09         31       2      144
2015-10        550      116      246
2015-11        369       61      267
```

We can see that October was the busiest month for ‘additions’, July was the busiest month for ‘deleteions’ and July was also teh busiest month for ‘modifications.

We can view this as a stacked bar chart :



```
In [165]: df2.plot.bar(stacked=True)
Out[165]: <matplotlib.axes._subplots.AxesSubplot at 0x116afd150>
```

```
In [166]:
```

I then decided to creat pivots on each of ‘added’, ‘modified’ and ‘deleted’ per user showing the percentages by user.

```
pd.pivot_table(df,index='user',values=['added'],aggfunc=np.sum,margins=True).div(sum(df.added))
.mul(100)
Out[101]:
                                                        added
user
/OU=Domain Control Validated/CN=svn.company.net         0.000000
Alan                                                    0.852273
Dave                                                     0.946970
Freddie                                                 0.000000
Jimmy                                                    65.340909
Nicky                                                   0.000000
Thomas                                                  8.238636
Vincent                                                 24.621212
ajon0002                                                0.000000
murari.krishnan                                         0.000000
All                                                     100.000000
```

This shows 65.3% of the total adds were done by Jimmy

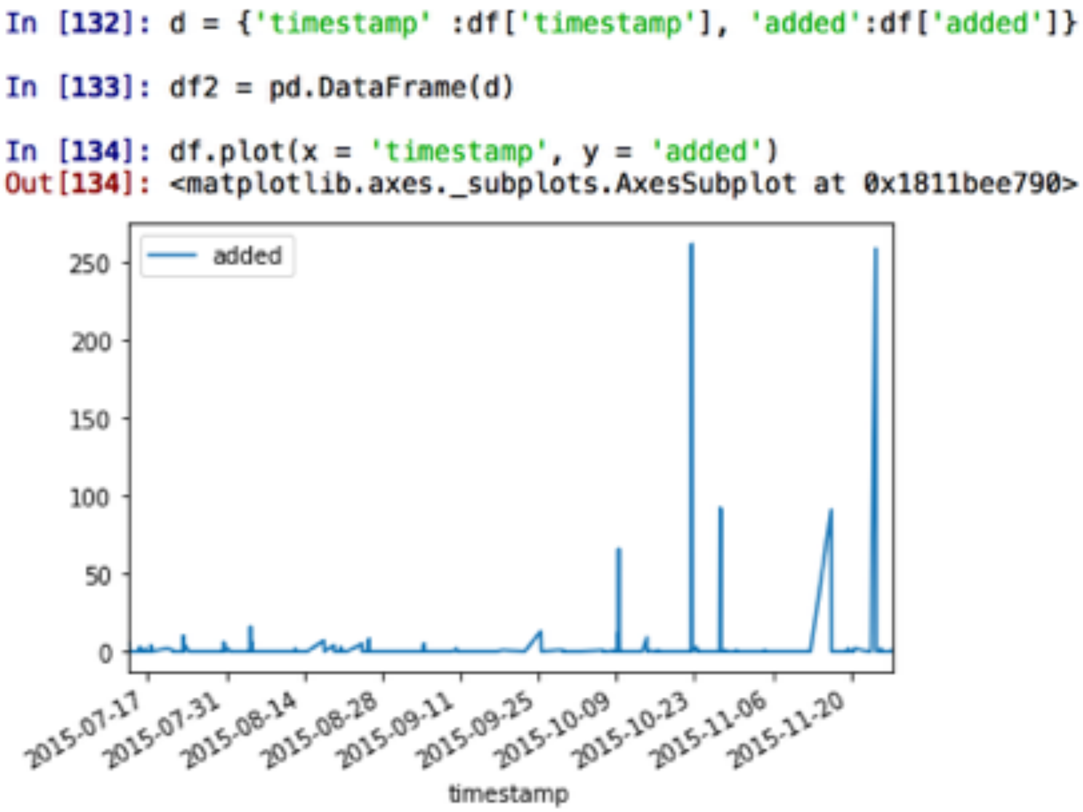
```
pd.pivot_table(df,index='user',values=['modified'],aggfunc=np.sum,margins=True).div(sum(df.modifi
ed)).mul(100)
Out[105]:
                                                        modified
user
/OU=Domain Control Validated/CN=svn.company.net         2.023609
Alan                                                    1.264755
Dave                                                    5.564924
Freddie                                                  0.758853
Jimmy                                                    33.811130
Nicky                                                    0.590219
Thomas                                                   51.349073
Vincent                                                  3.794266
ajon0002                                                 0.758853
murari.krishnan                                            0.084317
All                                                     100.000000
```

This shows 33.8% of the total ‘modifications’ were done by Jimmy

```
pd.pivot_table(df,index='user',values=['deleted'],aggfunc=np.sum,margins=True).div(sum(df.deleted)).mul(100)
Out[107]:
                                                      deleted
user
/OU=Domain Control Validated/CN=svn.company.net      0.000000
Alan                                                 0.782269
Dave                                                  0.000000
Freddie                                                0.000000
Jimmy                                                  8.604954
Nicky                                                 0.000000
Thomas                                                 86.440678
Vincent                                               4.172099
ajon0002                                               0.000000
murari.krishnan                                         0.000000
All                                                  100.000000
```

This shows 86.4% of the ‘deletions’ were done by Thomas

I then decided to see if I could see the variation in the activities with time.

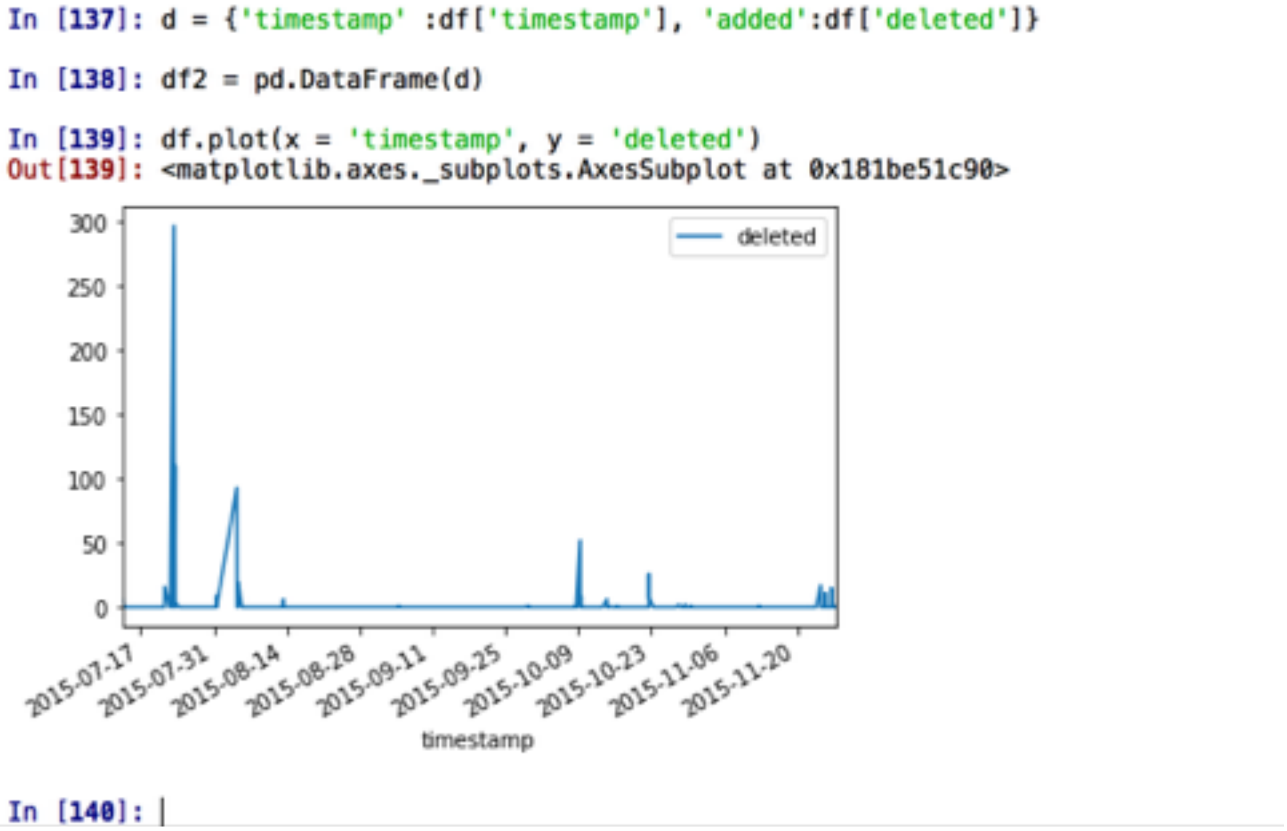


```
In [132]: d = {'timestamp' :df['timestamp'], 'added':df['added']}

In [133]: df2 = pd.DataFrame(d)

In [134]: df.plot(x = 'timestamp', y = 'added')
Out[134]: <matplotlib.axes._subplots.AxesSubplot at 0x1811bee790>
```

We can see most of the ‘additions’ were done later in the year



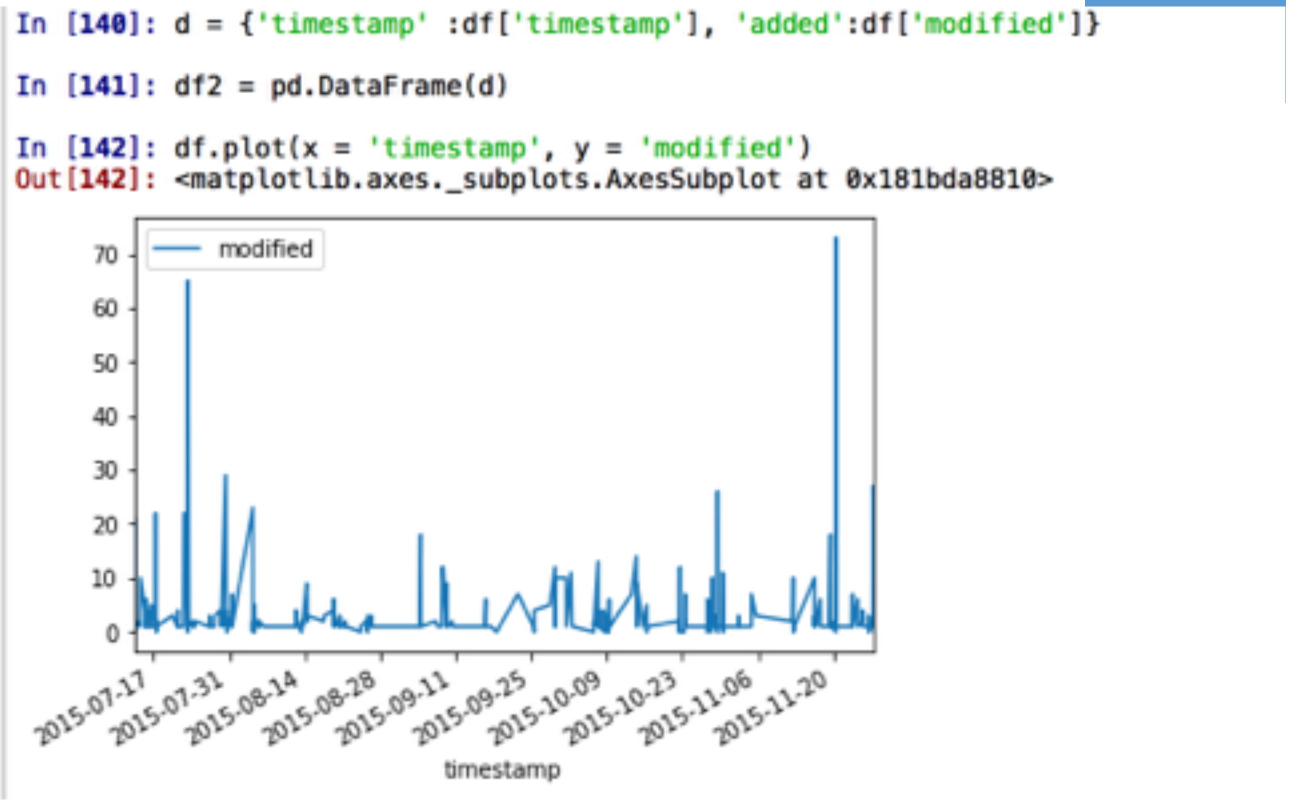
```
In [137]: d = {'timestamp' :df['timestamp'], 'added':df['deleted']}

In [138]: df2 = pd.DataFrame(d)

In [139]: df.plot(x = 'timestamp', y = 'deleted')
Out[139]: <matplotlib.axes._subplots.AxesSubplot at 0x181be51c90>
```

```
In [140]: |
```

Most of the deletions appear to have been done ealier in the year.



```
In [140]: d = {'timestamp' :df['timestamp'], 'added':df['modified']}

In [141]: df2 = pd.DataFrame(d)

In [142]: df.plot(x = 'timestamp', y = 'modified')
Out[142]: <matplotlib.axes._subplots.AxesSubplot at 0x181bda8810>
```

The modifications appear to be more evenly spread over the timeframe, with peaks at either end.