

Plot the Graph for the total number of issues with different labels created and closed on every date on GitHub for SPM587SP18 issues project

Example of Issue Form Filled out ¶

Author: SPM587SP18 created_at: 2018-03-31, labels: bug, State: closed, issue_number: 1, closed_at: 2017-04-06

Data Set File: SPM587SP18issues.json

```
In [1]: import os

import _pickle as pickle

import pandas as pd                # panda's nickname is p
d

import numpy as np                 # numpy as np

from pandas import DataFrame, Series    # for convenience

import matplotlib.pyplot as plt

%matplotlib inline
```

Requirement : Get the total number of issues with different labels for every date and plot them in a stacked chart

```
In [2]: # Read the JSON file into a list of dictionaries

import json
list_of_issues_dict_data = [json.loads(line) for line in open('SPM587SP18issues.json')]
```

```
In [3]: # Create the DataFrame object for the list_of_issues_dict_data object

issues_df = DataFrame(list_of_issues_dict_data)
```

```
In [4]: # Sanity test: print first 10 rows in our DataFrame  
        issues_df
```

Out[4]:

	Author	State	closed_at	created_at	issue_number	lab
0	HSP18SCM50W	closed	2018-04-22	2018-04-20	475	[Category:Inquiry, DetectionPhase:Field, Ori...
1	HSP18SCM50W	closed	2018-04-22	2018-04-19	474	[Address:59 W Grand A Chicago IL 60654, Cate
2	YSP18SCM40K	closed	2018-04-14	2018-04-14	472	[Category:Inquiry, DetectionPhase:Field, Ori...
3	RSP18SCM19N	closed	2018-04-14	2018-04-14	470	[Category:Enhancemen DetectionPhase:Testing
4	CSP18SCM32L	closed	2018-04-13	2018-04-13	466	[Category:Inquiry, DetectionPhase:Field, Ori...
5	RSP18SCM19N	closed	2018-04-13	2018-04-13	464	[Address: 2400 N Linco Ave Chicago IL 60614,.
6	MSP18SCM65B	closed	2018-04-13	2018-04-13	461	[Category:Bug, DetectionPhase:Testing Origina...
7	JSP18SCM63J	closed	2018-04-13	2018-04-13	459	[]
8	YSP18SCM35Z	closed	2018-04-13	2018-04-13	454	[Category:Enhancemen DetectionPhase:Testing
9	YSP18SCM40K	closed	2018-04-13	2018-04-13	452	[Address:225 S Canal S Chicago IL 60606, Cate
10	ZSP18SCM44L	closed	2018-04-13	2018-04-13	449	[Category:Inquiry, DetectionPhase:Field, Ori...
11	DSP18SCM14S	closed	2018-04-13	2018-04-13	447	[Category:Inquiry, DetectionPhase:Field, Ori...
12	RSP18SCM25A	closed	2018-04-13	2018-04-13	445	[Category:Enhancemen DetectionPhase:Testing
13	MSP18SCM01M	closed	2018-04-13	2018-04-13	444	[Category:Enhancemen DetectionPhase:Testing
14	FSP18SCM78A	closed	2018-04-13	2018-04-13	442	[Category:Inquiry, DetectionPhase:Field, Ori...

	Author	State	closed_at	created_at	issue_number	labi
15	HSP18SCM81C	closed	2018-04-13	2018-04-13	436	[Category:Bug, DetectionPhase:Testing Origina...
16	YSP18SCM71Z	closed	2018-04-13	2018-04-13	435	[Category:Enhancemen DetectionPhase:Testing
17	ASP18SCM05S	closed	2018-04-13	2018-04-13	434	[Category:Enhancemen DetectionPhase:Testing
18	PSP18SCM99P	closed	2018-04-13	2018-04-13	432	[Category:Enhancemen DetectionPhase:Testing
19	SSP18SCM41S	open	None	2018-04-13	430	[Category:Enhancemen DetectionPhase:Testing
20	VSP18SCM42K	closed	2018-04-13	2018-04-13	424	[Category:Inquiry, DetectionPhase:Field, Origi...
21	ASP18SCM05A	closed	2018-04-13	2018-04-13	422	[Category:Enhancemen DetectionPhase:Testing
22	SSP18SCM19P	closed	2018-04-13	2018-04-13	420	[Category:Bug, DetectionPhase:Testing Origina...
23	NSP18SCM35K	closed	2018-04-13	2018-04-13	415	[Category:Enhancemen DetectionPhase:Testing
24	PSP18SCM99P	closed	2018-04-13	2018-04-13	411	[Category:Enhancemen DetectionPhase:Testing
25	SSP18SCM10S	closed	2018-04-13	2018-04-13	410	[Category:Inquiry, DetectionPhase:Field, Origi...
26	TSP18SCM03A	closed	2018-04-13	2018-04-13	409	[Category:Enhancemen DetectionPhase:Testing
27	KSP18SCM22B	closed	2018-04-13	2018-04-13	404	[Category:Inquiry, DetectionPhase:Field, Origi...
28	PSP18SCM73A	closed	2018-04-13	2018-04-13	403	[Category:Enhancemen DetectionPhase:Testing
29	ASP18SCM22S	closed	2018-04-13	2018-04-13	401	[Category:Inquiry, DetectionPhase:Field, Origi...
...

	Author	State	closed_at	created_at	issue_number	lab
225	HSP18SCM69D	open	None	2018-04-09	31	[Address:119 NORTH WABASH, Category:Bu Detec...
226	HSP18SCM69D	open	None	2018-04-09	30	[Address:111 W JACKSON, Category:Enhancement ...
227	HSP18SCM69D	open	None	2018-04-09	29	[Address:23 S CLARK, Category:Bug, DetectionPh...
228	HSP18SCM69D	open	None	2018-04-09	28	[Address:1951 N WESTERN AVE, Category:Bug, Det...
229	HSP18SCM69D	open	None	2018-04-09	27	[Address:645 N MCCLURG CT, Category:Inquiry, D...
230	HSP18SCM69D	open	None	2018-04-09	26	[Address:1951 N WESTERN AVE, Category:Enhancem...
231	HSP18SCM69D	open	None	2018-04-09	25	[Address:645 N MCCLURG CT, Category:Bug, Detec...
232	HSP18SCM69D	open	None	2018-04-09	24	[Address:600 E GRANL AVE, Category:Inquiry, De...
233	HSP18SCM69D	open	None	2018-04-09	23	[Address:119 NORTH WABASH, Category:Enhancemen.
234	HSP18SCM69D	open	None	2018-04-09	22	[Address:233 W JACKSON, Category:Bug, Detectio
235	HSP18SCM69D	open	None	2018-04-09	21	[Address:111 W JACKSON, Category:Inquiry, Dete..
236	HSP18SCM69D	open	None	2018-04-09	20	[Address:119 NORTH WABASH, Category:Enhancemen.
237	HSP18SCM69D	open	None	2018-04-09	19	[Address:119 NORTH WABASH, Category:Bu Detec...

	Author	State	closed_at	created_at	issue_number	lab
238	HSP18SCM69D	open	None	2018-04-09	18	[Address:111 W JACKSON, Category:Inquiry, Dete..
239	HSP18SCM69D	open	None	2018-04-09	17	[Address:23 S CLARK, Category:Enhancement Det...
240	HSP18SCM69D	open	None	2018-04-09	16	[Address:23 S CLARK, Category:Inquiry, Detecti...
241	HSP18SCM69D	open	None	2018-04-09	15	[Address:2525 S Martin Luther King Drive, Cate
242	HSP18SCM69D	open	None	2018-04-09	14	[Address:1951 N WESTERN AVE, Category:Bug, Det...
243	HSP18SCM69D	open	None	2018-04-09	13	[Address:645 N MCCLURG CT, Category:Enhancemen.
244	HSP18SCM69D	open	None	2018-04-09	12	[Address:645 N MCCLURG CT, Category:Inquiry, D...
245	HSP18SCM69D	open	None	2018-04-09	11	[Address:600 E GRANL AVE, Category:Bug, Detect...
246	HSP18SCM69D	open	None	2018-04-09	10	[Address:233 W JACKSON, Category:Enhancement ...
247	HSP18SCM69D	open	None	2018-04-09	9	[Address:119 NORTH WABASH, Category:Enhancemen.
248	HSP18SCM69D	open	None	2018-04-09	8	[Address:119 NORTH WABASH, Category:Bu Detec...
249	HSP18SCM69D	open	None	2018-04-09	7	[Address:111 W JACKSON, Category:Inquiry, Dete..
250	HSP18SCM69D	open	None	2018-04-09	6	[Address:111 W JACKSON, Category:Bug, Detectio

	Author	State	closed_at	created_at	issue_number	label
251	HSP18SCM69D	open	None	2018-04-09	5	[Address:23 S CLARK, Category:Enhancement Det...
252	HSP18SCM69D	open	None	2018-04-09	4	[Address:23 S CLARK, Category:Enhancement Det...
253	SPM587SP18	closed	2018-04-09	2018-04-08	3	[Address:2525 S Martin Luther King Drive, Cate
254	SPM587SP18	closed	2018-04-06	2018-03-30	2	[Address:2525 S Martin Luther King Drive, Cate

255 rows × 6 columns

In [5]: *# Prepare and Clean the dataframe object*

```
wrangled_issues_df = issues_df[['Author','State','closed_at','created_at','issue_number','labels']]
wrangled_issues_df.loc[0:len(wrangled_issues_df), 'OriginationPhase']= np.NaN
wrangled_issues_df.loc[0:len(wrangled_issues_df), 'DetectionPhase']= np.NaN
wrangled_issues_df.loc[0:len(wrangled_issues_df), 'Category']= np.NaN
wrangled_issues_df.loc[0:len(wrangled_issues_df), 'Priority']= np.NaN
wrangled_issues_df.loc[0:len(wrangled_issues_df), 'Status']= np.NaN
```

```
In [6]: for i in range(0, len(wrangled_issues_df)):
        if wrangled_issues_df.iloc[i]['labels']:
            for label in wrangled_issues_df.iloc[i]['labels']:
                l = label.split(':')
                if len(l) ==2:
                    label_name= l[0]
                    label_value= l[1]
                    wrangled_issues_df.loc[i, label_name]=label_value
```

In [7]: `wrangled_issues_df`

Out[7]:

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0	HSP18SCM50W	closed	2018-04-22	2018-04-20	475	[Category:Inquiry, DetectionPhase:Field, Ori...
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3	RSP18SCM19N	closed	2018-04-14	2018-04-14	470	[Category:Enhancemen DetectionPhase:Testing
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6	MSP18SCM65B	closed	2018-04-13	2018-04-13	461	[Category:Bug, DetectionPhase:Testing Origina...
7	JSP18SCM63J	closed	2018-04-13	2018-04-13	459	[]
8	YSP18SCM35Z	closed	2018-04-13	2018-04-13	454	[Category:Enhancemen DetectionPhase:Testing
9	YSP18SCM40K	closed	2018-04-13	2018-04-13	452	[Address:225 S Canal S Chicago IL 60606, Cate
10	ZSP18SCM44L	closed	2018-04-13	2018-04-13	449	[Category:Inquiry, DetectionPhase:Field, Ori...
11	DSP18SCM14S	closed	2018-04-13	2018-04-13	447	[Category:Inquiry, DetectionPhase:Field, Ori...
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13	MSP18SCM01M	closed	2018-04-13	2018-04-13	444	[Category:Enhancemen DetectionPhase:Testing
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228	HSP18SCM69D	open	None	2018-04-09	28	[Address:1951 N WESTERN AVE, Category:Bug, Det...
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233	HSP18SCM69D	open	None	2018-04-09	23	[Address:119 NORTH WABASH, Category:Enhancemen.
234	HSP18SCM69D	open	None	2018-04-09	22	[Address:233 W JACKSON, Category:Bug, Detectio
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236	HSP18SCM69D	open	None	2018-04-09	20	[Address:119 NORTH WABASH, Category:Enhancemen.

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238	HSP18SCM69D	open	None	2018-04-09	18	[Address:111 W JACKSON, Category:Inquiry, Dete..
239	HSP18SCM69D	open	None	2018-04-09	17	[Address:23 S CLARK, Category:Enhancement Det...
240	HSP18SCM69D	open	None	2018-04-09	16	[Address:23 S CLARK, Category:Inquiry, Detecti...
241	HSP18SCM69D	open	None	2018-04-09	15	[Address:2525 S Martin Luther King Drive, Cate
242	HSP18SCM69D	open	None	2018-04-09	14	[Address:1951 N WESTERN AVE, Category:Bug, Det...
243	HSP18SCM69D	open	None	2018-04-09	13	[Address:645 N MCCLURG CT, Category:Enhancemen.
244	HSP18SCM69D	open	None	2018-04-09	12	[Address:645 N MCCLURG CT, Category:Inquiry, D...
245	HSP18SCM69D	open	None	2018-04-09	11	[Address:600 E GRANE AVE, Category:Bug, Detect...
246	HSP18SCM69D	open	None	2018-04-09	10	[Address:233 W JACKSON, Category:Enhancement ...
247	HSP18SCM69D	open	None	2018-04-09	9	[Address:119 NORTH WABASH, Category:Enhancemen.
248	HSP18SCM69D	open	None	2018-04-09	8	[Address:119 NORTH WABASH, Category:Bu Detec...
249	HSP18SCM69D	open	None	2018-04-09	7	[Address:111 W JACKSON, Category:Inquiry, Dete..

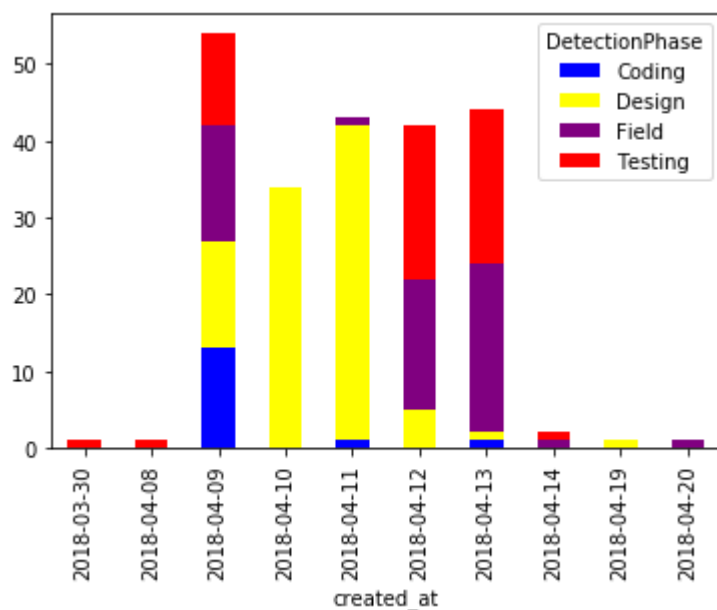
	Author	State	closed_at	created_at	issue_number	label
250	HSP18SCM69D	open	None	2018-04-09	6	[Address:111 W JACKSON, Category:Bug, Detectio
251	HSP18SCM69D	open	None	2018-04-09	5	[Address:23 S CLARK, Category:Enhancement Det...
252	HSP18SCM69D	open	None	2018-04-09	4	[Address:23 S CLARK, Category:Enhancement Det...
253	SPM587SP18	closed	2018-04-09	2018-04-08	3	[Address:2525 S Martin Luther King Drive, Cate
254	SPM587SP18	closed	2018-04-06	2018-03-30	2	[Address:2525 S Martin Luther King Drive, Cate

255 rows × 20 columns

In [8]: *# Plot in Bar Chart the total number of issues created every day for every Detection Phase*

```
LabelsReviewedByDate = wrangled_issues_df.groupby(['created_at', 'DetectionPhase']).created_at.count()
```

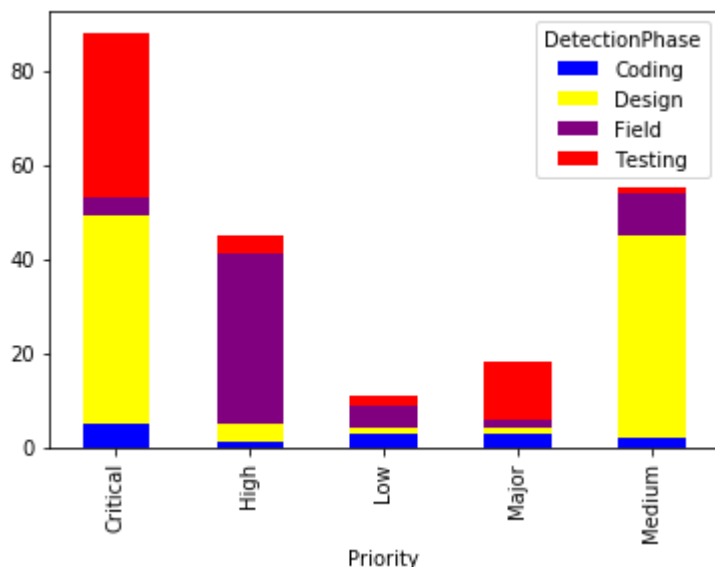
```
dateLabelsFig = LabelsReviewedByDate.unstack().plot(kind='bar', stacked=True, color=['blue', 'yellow', 'purple', 'red', 'green'], grid=False)
```



In [9]: *# Plot in Bar Chart the total number of issues created for every Phase based on their priorities*

```
LabelsReviewedByDate = wrangled_issues_df.groupby(['Priority', 'DetectionPhase'])
    .created_at.count()
```

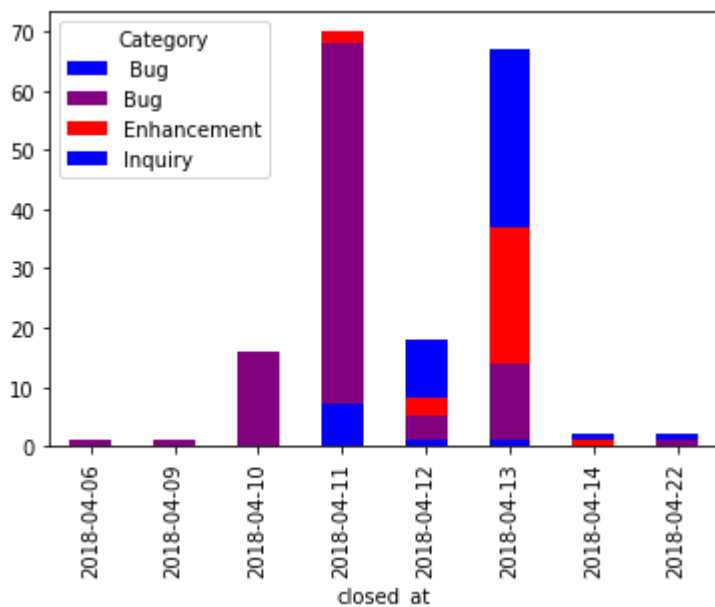
```
dateLabelsFig = LabelsReviewedByDate.unstack().plot(kind='bar', stacked=True,
    color=['blue', 'yellow', 'purple', 'red', 'green'], grid=False)
```



In [10]: *# Plot in Bar Chart the total number of issues closed every day for every Category*

```
LabelsReviewedByDate = wrangled_issues_df.groupby(['closed_at', 'Category'])
    .closed_at.count()
```

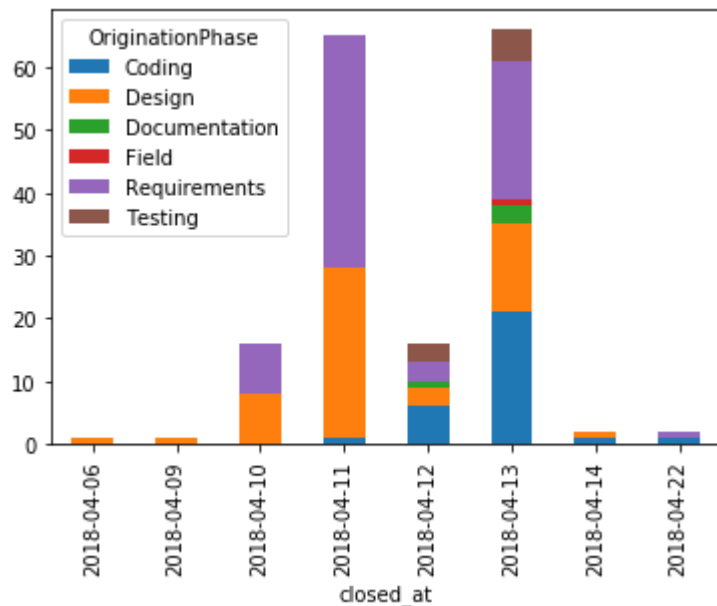
```
dateLabelsFig = LabelsReviewedByDate.unstack().plot(kind='bar', stacked=True,
    color=['blue', 'purple', 'red'], grid=False)
```



Requirement #1: Plot in Bar Chart the total number of issues closed every day for every Origination Phase

```
In [11]: # Requirement #1: Add your code here
LabelsReviewedByDate = wrangled_issues_df.groupby(['closed_at', 'OriginationPhase']).closed_at.count()

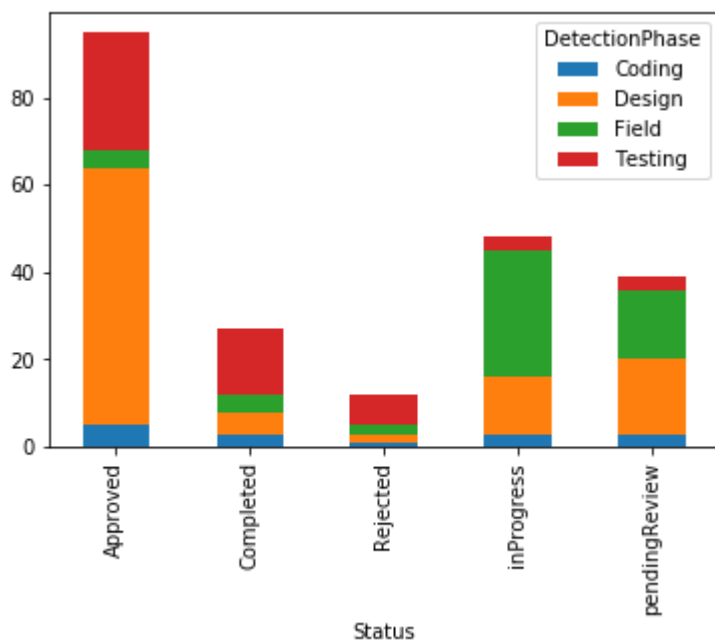
dateLabelsFig = LabelsReviewedByDate.unstack().plot(kind='bar', stacked=True, grid=False)
```



Requirement #2: # Plot in Bar Chart the total number of issues created for every Phase based on their Status

```
In [12]: # Requirement #2: Add your code here
LabelsReviewedByDate = wrangled_issues_df.groupby(['Status','DetectionPhase'])
        .created_at.count()

dateLabelsFig = LabelsReviewedByDate.unstack().plot(kind='bar',stacked=True, grid=False)
```



```
In [13]: # Requirement #2: Add your code here
LabelsReviewedByDate = wrangled_issues_df.groupby(['Status','OriginationPhase'])
        .created_at.count()

dateLabelsFig = LabelsReviewedByDate.unstack().plot(kind='bar',stacked=True, color=['orange','green', 'blue', 'red', 'black'], grid=False)
```

