

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 pd
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	Issue Description
0	HSP18SCM50W	open	None	2018-04-20	475	[Category:Inquiry, DetectionPhase:Field, Origin:...
1	HSP18SCM50W	open	None	2018-04-19	474	[Address:59 W Grand Chicago IL 60654, C
2	YSP18SCM40K	closed	2018-04-14	2018-04-14	472	[Category:Inquiry, DetectionPhase:Field, Origin:...
3	RSP18SCM19N	closed	2018-04-14	2018-04-14	470	[Category:Enhancement, DetectionPhase:Test
4	CSP18SCM32L	closed	2018-04-13	2018-04-13	466	[Category:Inquiry, DetectionPhase:Field, Origin:...
5	RSP18SCM19N	closed	2018-04-13	2018-04-13	464	[Address: 2400 N Lincoln Ave Chicago IL 6061
6	MSP18SCM65B	closed	2018-04-13	2018-04-13	461	[Category:Bug, DetectionPhase:Test, Origina...
7	JSP18SCM63J	closed	2018-04-13	2018-04-13	459	[]
8	YSP18SCM35Z	closed	2018-04-13	2018-04-13	454	[Category:Enhancement, DetectionPhase:Test
9	YSP18SCM40K	closed	2018-04-13	2018-04-13	452	[Address:225 S Canal Chicago IL 60606, C
10	ZSP18SCM44L	closed	2018-04-	2018-04-	449	[Category:Inquiry, DetectionPhase:Field

			13	13		Orig...
11	DSP18SCM14S	closed	2018-04-13	2018-04-13	447	[Category:Inquiry, DetectionPhase:Field Orig...
12	RSP18SCM25A	closed	2018-04-13	2018-04-13	445	[Category:Enhancem DetectionPhase:Test
13	MSP18SCM01M	closed	2018-04-13	2018-04-13	444	[Category:Enhancem DetectionPhase:Test
14	FSP18SCM78A	closed	2018-04-13	2018-04-13	442	[Category:Inquiry, DetectionPhase:Field Orig...
15	HSP18SCM81C	closed	2018-04-13	2018-04-13	436	[Category:Bug, DetectionPhase:Test Origina...
16	YSP18SCM71Z	closed	2018-04-13	2018-04-13	435	[Category:Enhancem DetectionPhase:Test
17	ASP18SCM05S	closed	2018-04-13	2018-04-13	434	[Category:Enhancem DetectionPhase:Test
18	PSP18SCM99P	closed	2018-04-13	2018-04-13	432	[Category:Enhancem DetectionPhase:Test
19	SSP18SCM41S	open	None	2018-04-13	430	[Category:Enhancem DetectionPhase:Test
20	VSP18SCM42K	closed	2018-04-13	2018-04-13	424	[Category:Inquiry, DetectionPhase:Field Orig...
21	ASP18SCM05A	closed	2018-04-13	2018-04-13	422	[Category:Enhancem DetectionPhase:Test
22	SSP18SCM19P	closed	2018-04-13	2018-04-13	420	[Category:Bug, DetectionPhase:Test Origina...
23	NSP18SCM35K	closed	2018-04-13	2018-04-13	415	[Category:Enhancem DetectionPhase:Test
24	PSP18SCM99P	closed	2018-04-13	2018-04-13	411	[Category:Enhancem DetectionPhase:Test
25	SSP18SCM10S	closed	2018-04-13	2018-04-13	410	[Category:Inquiry, DetectionPhase:Field Orig...
			2018-04-	2018-04-		[Category:Enhancem

26	TSP18SCM03A	closed	13	13	409	DetectionPhase:Test
27	KSP18SCM22B	closed	2018-04-13	2018-04-13	404	[Category:Inquiry, DetectionPhase:Field Orig...
28	PSP18SCM73A	closed	2018-04-13	2018-04-13	403	[Category:Enhancem DetectionPhase:Test
29	ASP18SCM22S	closed	2018-04-13	2018-04-13	401	[Category:Inquiry, DetectionPhase:Field Orig...
...
225	HSP18SCM69D	open	None	2018-04-09	31	[Address:119 NORTH WABASH, Category: Detec...
226	HSP18SCM69D	open	None	2018-04-09	30	[Address:111 W JACKSON, Category:Enhancem ...
227	HSP18SCM69D	open	None	2018-04-09	29	[Address:23 S CLAR 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 GRA AVE, Category:Inquir De...
233	HSP18SCM69D	open	None	2018-04-09	23	[Address:119 NORTH WABASH, Category:Enhancem

234	HSP18SCM69D	open	None	2018-04-09	22	[Address:233 W JACKSON, Category:Bug, Detect...
235	HSP18SCM69D	open	None	2018-04-09	21	[Address:111 W JACKSON, Category:Inquiry, De...
236	HSP18SCM69D	open	None	2018-04-09	20	[Address:119 NORTH WABASH, Category:Enhancem...
237	HSP18SCM69D	open	None	2018-04-09	19	[Address:119 NORTH WABASH, Category: Detect...
238	HSP18SCM69D	open	None	2018-04-09	18	[Address:111 W JACKSON, Category:Inquiry, De...
239	HSP18SCM69D	open	None	2018-04-09	17	[Address:23 S CLAR Category:Enhancem Det...
240	HSP18SCM69D	open	None	2018-04-09	16	[Address:23 S CLAR Category:Inquiry, Detecti...
241	HSP18SCM69D	open	None	2018-04-09	15	[Address:2525 S Mar Luther King Drive, Ca...
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:Enhancem...
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 GRA AVE, Category:Bug, Detect...
246	HSP18SCM69D	open	None	2018-04-09	10	[Address:233 W JACKSON, Category:Enhancem ...
						[Address:119 NORTH

247	HSP18SCM69D	open	None	2018-04-09	9	WABASH, Category:Enhancem
248	HSP18SCM69D	open	None	2018-04-09	8	[Address:119 NORTH WABASH, Category: Detec...
249	HSP18SCM69D	open	None	2018-04-09	7	[Address:111 W JACKSON, Category:Inquiry, De
250	HSP18SCM69D	open	None	2018-04-09	6	[Address:111 W JACKSON, Category:Bug, Detec
251	HSP18SCM69D	open	None	2018-04-09	5	[Address:23 S CLAR Category:Enhancem Det...
252	HSP18SCM69D	open	None	2018-04-09	4	[Address:23 S CLAR Category:Enhancem Det...
253	SPM587SP18	closed	2018-04-09	2018-04-08	3	[Address:2525 S Mar Luther King Drive, Ca
254	SPM587SP18	closed	2018-04-06	2018-03-30	2	[Address:2525 S Mar Luther King Drive, Ca

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']:
            label_name= (label.split(':')[0])
            label_value= (label.split(':')[1])
            wrangled_issues_df.loc[i, label_name]=label_value
```

In [7]:

```
wrangled_issues_df
```

Out[7]:

	Author	State	closed_at	created_at	issue_number	Issue Description
0	HSP18SCM50W	open	None	2018-04-20	475	[Category:Inquiry, DetectionPhase:Field, Origin:...
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6	MSP18SCM65B	closed	2018-04-13	2018-04-13	461	[Category:Bug, DetectionPhase:Test, Origina...
7	JSP18SCM63J	closed	2018-04-13	2018-04-13	459	
8	YSP18SCM35Z	closed	2018-04-13	2018-04-13	454	[Category:Enhancement, DetectionPhase:Test
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10	ZSP18SCM44L	closed	2018-04-13	2018-04-13	449	[Category:Inquiry, DetectionPhase:Field

						Orig...
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233	HSP18SCM69D	open	None	2018-04-09	23	[Address:119 NORTH WABASH, Category:Enhancem

234	HSP18SCM69D	open	None	2018-04-09	22	[Address:233 W JACKSON, Category:Bug, Detect...
235	HSP18SCM69D	open	None	2018-04-09	21	[Address:111 W JACKSON, Category:Inquiry, De...
236	HSP18SCM69D	open	None	2018-04-09	20	[Address:119 NORTH WABASH, Category:Enhancem...
237	HSP18SCM69D	open	None	2018-04-09	19	[Address:119 NORTH WABASH, Category: Detect...
238	HSP18SCM69D	open	None	2018-04-09	18	[Address:111 W JACKSON, Category:Inquiry, De...
239	HSP18SCM69D	open	None	2018-04-09	17	[Address:23 S CLAR Category:Enhancem Det...
240	HSP18SCM69D	open	None	2018-04-09	16	[Address:23 S CLAR Category:Inquiry, Detecti...
241	HSP18SCM69D	open	None	2018-04-09	15	[Address:2525 S Mar Luther King Drive, Ca...
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:Enhancem...
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 GRA AVE, Category:Bug, Detect...
246	HSP18SCM69D	open	None	2018-04-09	10	[Address:233 W JACKSON, Category:Enhancem...

						...
247	HSP18SCM69D	open	None	2018-04-09	9	[Address:119 NORTH WABASH, Category:Enhancem
248	HSP18SCM69D	open	None	2018-04-09	8	[Address:119 NORTH WABASH, Category: Detec...
249	HSP18SCM69D	open	None	2018-04-09	7	[Address:111 W JACKSON, Category:Inquiry, De
250	HSP18SCM69D	open	None	2018-04-09	6	[Address:111 W JACKSON, Category:Bug, Detec
251	HSP18SCM69D	open	None	2018-04-09	5	[Address:23 S CLAR Category:Enhancem Det...
252	HSP18SCM69D	open	None	2018-04-09	4	[Address:23 S CLAR Category:Enhancem Det...
253	SPM587SP18	closed	2018-04-09	2018-04-08	3	[Address:2525 S Mar Luther King Drive, Ca
254	SPM587SP18	closed	2018-04-06	2018-03-30	2	[Address:2525 S Mar Luther King Drive, Ca

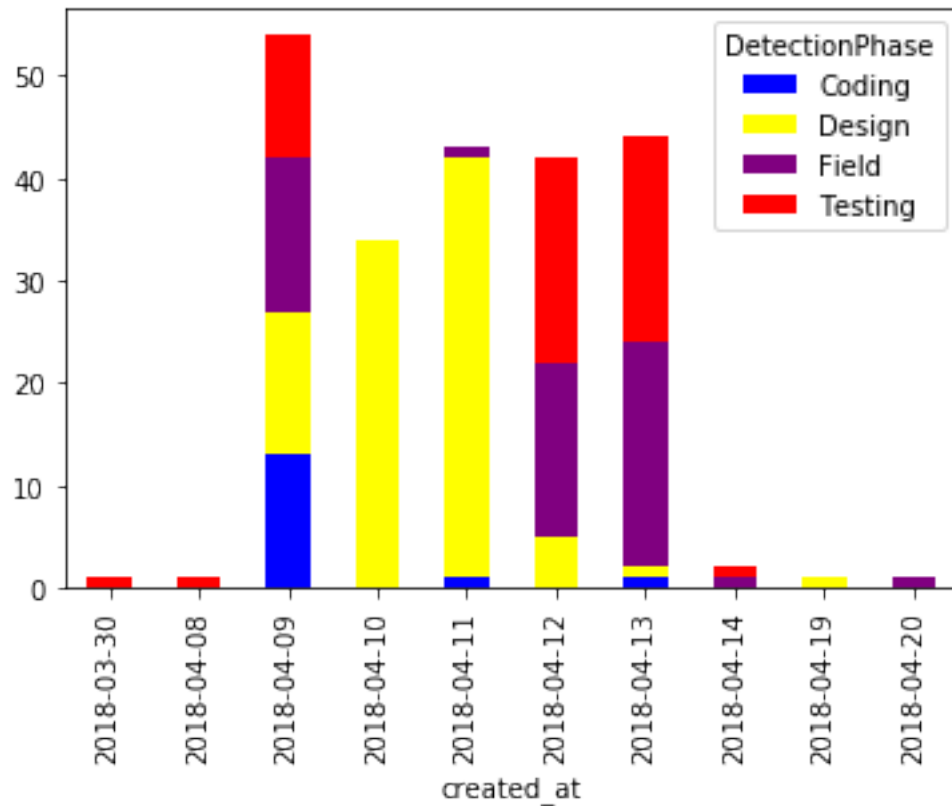
255 rows × 20 columns

In [8]:

```
# Plot in Bar Chart the total number of issues created every day for every Detac  
tion Phase
```

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

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

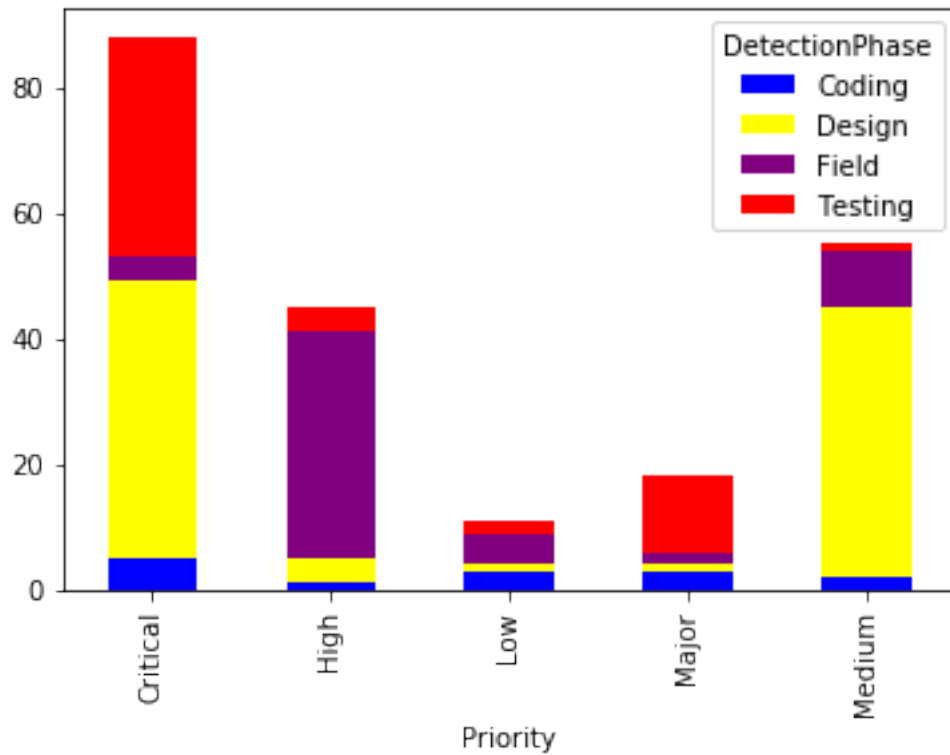


In [9]:

```
# Plot in Bar Chart the total number of issues created for every Phase based on  
thier 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)
```

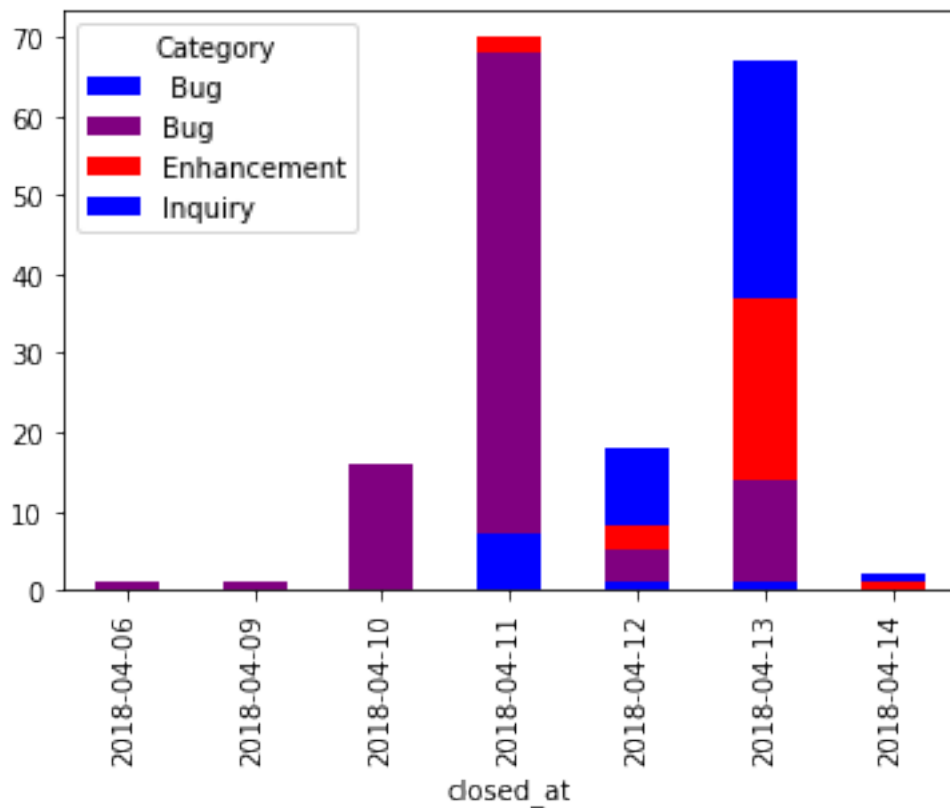


In [10]:

```
# 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)
```

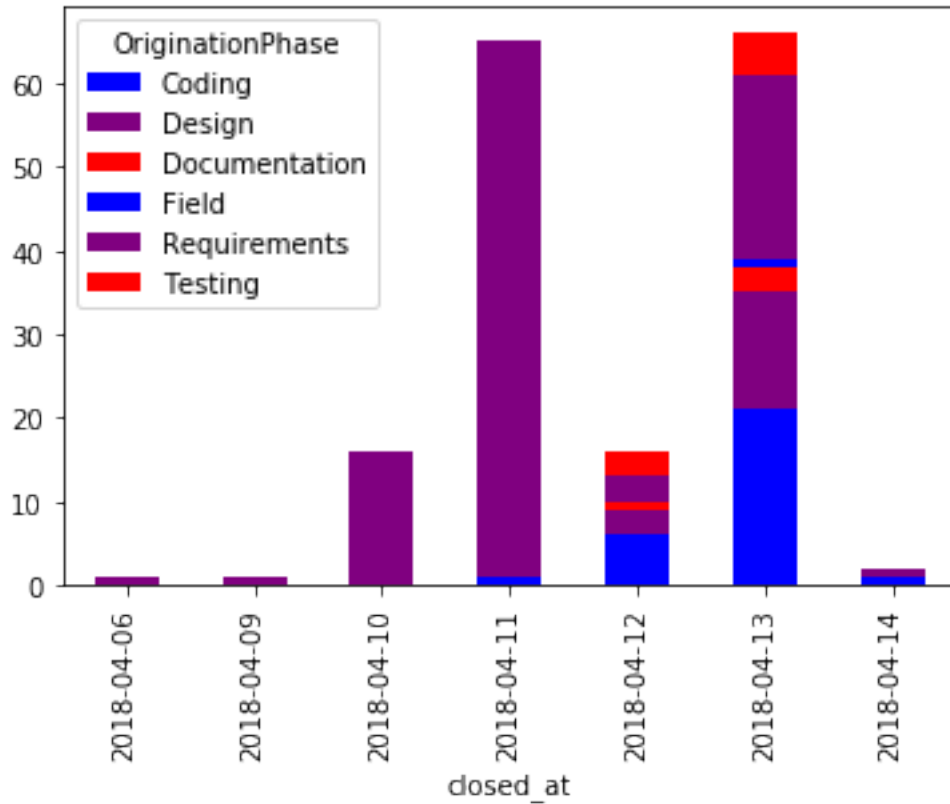


Requirement #1: Plot in Bar Chart the total number of issues closed every day for every Origination Phase

In [14]:

```
# 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, color=['blue', 'purple', 'red'], grid=False)
```



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

In [16]:

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

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

LabelsReviewedByDate = wrangled_issues_df.groupby(['Status', 'DetectionPhase']).closed_at.count()

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

