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 [12]:  import os

          import _pickle as pickle

          import pandas as pd                          # panda's nicknam
          e 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 [13]:  # Read the JSON file into a list of dictionaries

          import json
          list_of_issues_dict_data = [json.loads(line) for line in open('SPM587SP1
          8issues.json')]
```

```
In [14]:  # Create the DataFrame object for the list_of_issues_dict_data object

          issues_df = DataFrame(list_of_issues_dict_data)
```

In [15]: *# Sanity test: print first 10 rows in our DataFrame*

issues_df

Out[15]:

	Author	State	closed_at	created_at	issue_number	label
0	HSP18SCM50W	closed	2018-04-22	2018-04-20	475	[Category:Inquiry, DetectionPhase:Field, Origi...
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, Origi...
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, Origi...
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, Origi...
11	DSP18SCM14S	closed	2018-04-13	2018-04-13	447	[Category:Inquiry, DetectionPhase:Field, Origi...
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, Origi...

	Author	State	closed_at	created_at	issue_number	labe
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	labe
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 GRAND 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	labe
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 GRAND 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	lab
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 [16]:
```python
# Prepare and Clean the dataframe object

wrangled_issues_df = issues_df[['Author','State','closed_at','created_a
t','issue_number','labels']]
wrangled_issues_df.loc[0:len(wrangled_issues_df), 'OriginationPhase']= n
p.NaN
wrangled_issues_df.loc[0:len(wrangled_issues_df),'DetectionPhase']= np.N
aN
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 [17]:
```python
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 [18]: wrangled_issues_df

Out[18]:

	Author	State	closed_at	created_at	issue_number	labe
0	HSP18SCM50W	closed	2018-04-22	2018-04-20	475	[Category:Inquiry, DetectionPhase:Field, Origi...
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, Origi...
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, Origi...
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, Origi...
11	DSP18SCM14S	closed	2018-04-13	2018-04-13	447	[Category:Inquiry, DetectionPhase:Field, Origi...
12	RSP18SCM25A	closed	2018-04-13	2018-04-13	445	[Category:Enhancemen DetectionPhase:Testing

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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, Origi...
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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 GRAND 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.

	Author	State	closed_at	created_at	issue_number	label
237	HSP18SCM69D	open	None	2018-04-09	19	[Address:119 NORTH WABASH, Category:Bug Detec...
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 GRAND 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:Bug Detec...
249	HSP18SCM69D	open	None	2018-04-09	7	[Address:111 W JACKSON, Category:Inquiry, Dete..

	Author	State	closed_at	created_at	issue_number	labe
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 [19]:
```
# Plot in Bar Chart the total number of issues created every day for eve
ry Detaction Phase

LabelsReviewedByDate = wrangled_issues_df.groupby(['created_at','Detecti
onPhase']).created_at.count()

dateLabelsFig = LabelsReviewedByDate.unstack().plot(kind='bar',stacked=T
rue,  color=['blue','yellow', 'purple', 'red', 'green'], grid=False)
```
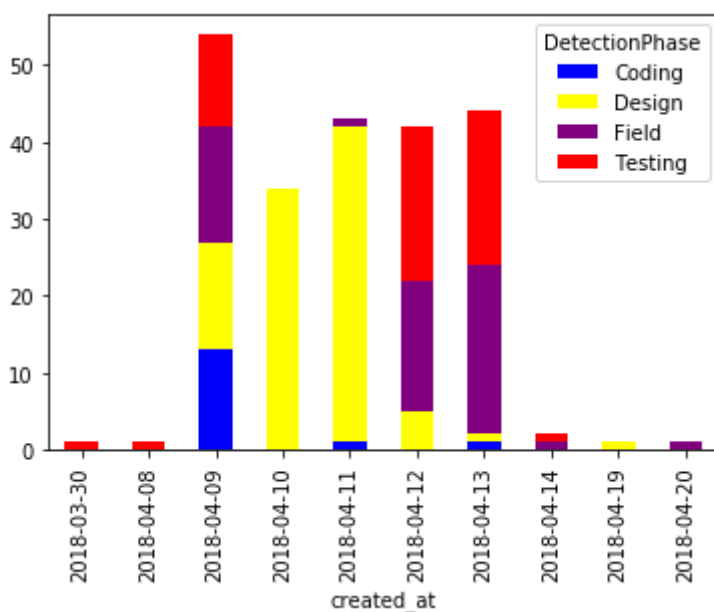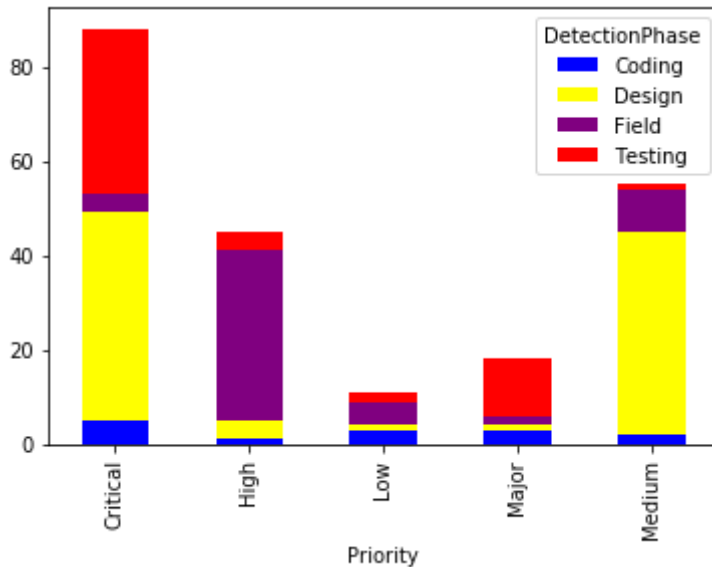
In [20]:
```python
# Plot in Bar Chart the total number of issues created for every Phase b
ased on thier priorites

LabelsReviewedByDate = wrangled_issues_df.groupby(['Priority','Detection
Phase']).created_at.count()

dateLabelsFig = LabelsReviewedByDate.unstack().plot(kind='bar',stacked=T
rue,  color=['blue','yellow', 'purple', 'red', 'green'], grid=False)
```
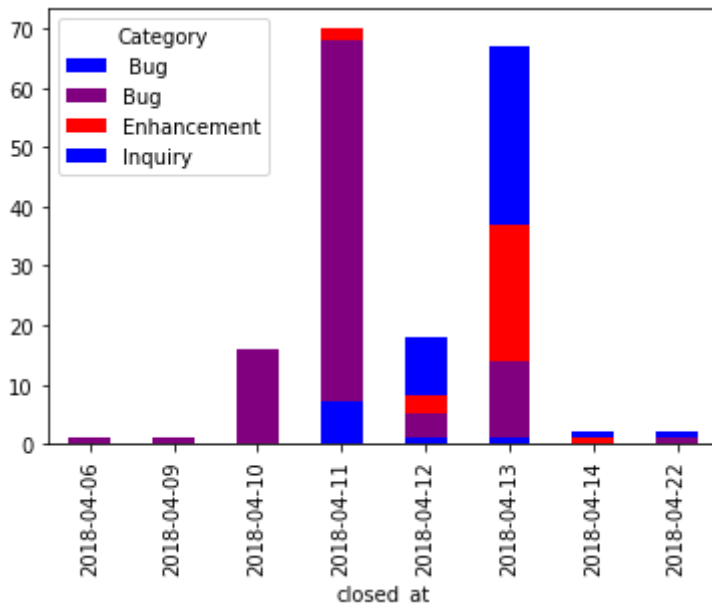

In [21]:
```python
# Plot in Bar Chart the total number of issues closed every day for ever
y Category

LabelsReviewedByDate = wrangled_issues_df.groupby(['closed_at','Categor
y']).closed_at.count()

dateLabelsFig = LabelsReviewedByDate.unstack().plot(kind='bar',stacked=T
rue,  color=['blue', 'purple', 'red'], grid=False)
```
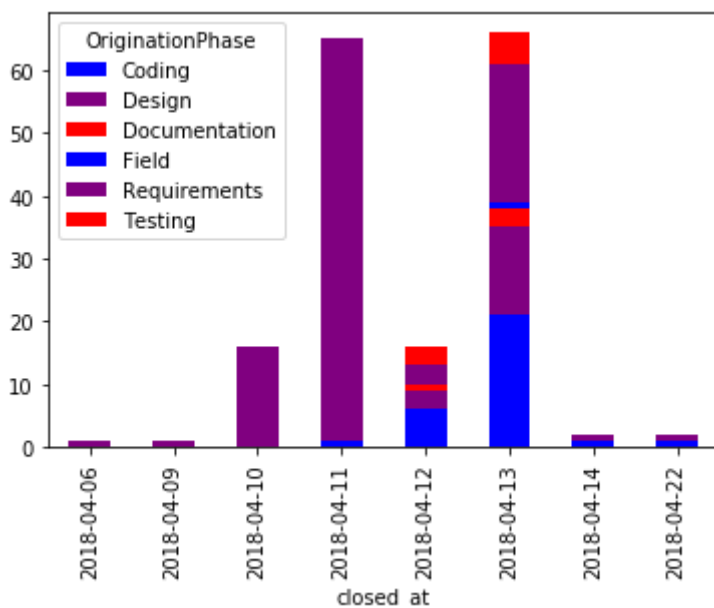
Requirement #1: Plot in Bar Chart the total number of issues closed every day for every Origination Phase

```
In [22]:  # Requirement #1: Add your code here
          # Plot in Bar Chart the total number of issues closed every day for ever
          y Category

          LabelsReviewedByDate = wrangled_issues_df.groupby(['closed_at','Originat
          ionPhase']).closed_at.count()

          dateLabelsFig = LabelsReviewedByDate.unstack().plot(kind='bar',stacked=T
          rue,  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 [23]:

```python
# Requirement #2: Add your code here
LabelsReviewedByDate = wrangled_issues_df.groupby(['Status','Origination
Phase']).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)
```