Plot the Graph for the total number of issues with different labels created and closed on every date on GitHub for SPM587SP22 issues project

Example of Issue Form Filled out

Author: SCM587SP22 created_at: 2021-03-03, labels: Category:Bug, DetectionPhase:Field, OriginationPhase:Coding, Priority:Critical State: closed, issue_number: 002, closed_at: 2021-03-05

Data Set File: SPM587SP22issues.json

In [25]:
```
import os

import warnings
warnings.filterwarnings('ignore')

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 [26]:
```
# Read the JSON file into a list of dictionaries

import json
list_of_issues_dict_data = [json.loads(line) for line in open('SPM587SP22issues.json')]
```

In [27]:
```
# Create the DataFrame object for the list_of_issues_dict_data object

issues_df = DataFrame(list_of_issues_dict_data)
```

In [28]:
```
# Sanity test: print rows in our DataFrame

issues_df
```

Out[28]:

	issue_number	created_at	closed_at	labels	State	Author
0	425	2022-03-24	2022-03-25	[Priority: Critical, Status: Approved, Detecti...	closed	RSP225CM11B
1	423	2022-03-24	2022-03-25	[Priority: Critical, Status: Approved, Origina...	closed	NSP225CM48A
2	422	2022-03-24	2022-03-25	[Priority: Critical, Status: Approved, Detecti...	closed	RSP225CM11B
3	420	2022-03-24	2022-03-25	[Priority: Major, Status: Completed, Originati...	closed	JSP225CM45K
4	417	2022-03-24	2022-03-25	[Priority: Major, Status: Approved, Originatio...	closed	KSP225CM49P
...	...	...	...	...	...	...
266	5	2022-02-20	None	[Priority: Low, Status: pendingReview, Origina...	open	SPM587SP22
267	4	2022-02-20	None	[Status: inProgress, Priority: High, Originati...	open	SPM587SP22
268	3	2022-02-20	2022-02-24	[Priority: Critical, Status: Completed, Origin...	closed	SPM587SP22
269	2	2022-02-20	2022-02-22	[Priority: Major, Status: Rejected, Originatio...	closed	SPM587SP22
270	1	2022-02-18	2022-02-20	[Priority: Low, Status: Approved, OriginationP...	closed	SPM587SP22

271 rows × 6 columns

In [29]:
```
# 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 [30]:
```
wrangled_issues_df
```

Out[30]:

	Author	State	closed_at	created_at	issue_number	labels	OriginationPhase	DetectionPhase	Category	Priority	Status
0	RSP225CM11B	closed	2022-03-25	2022-03-24	425	[Priority: Critical, Status: Approved, Detecti...	NaN	NaN	NaN	NaN	NaN
1	NSP225CM48A	closed	2022-03-25	2022-03-24	423	[Priority: Critical, Status: Approved, Origina...	NaN	NaN	NaN	NaN	NaN
2	RSP225CM11B	closed	2022-03-25	2022-03-24	422	[Priority: Critical, Status: Approved, Detecti...	NaN	NaN	NaN	NaN	NaN
3	JSP225CM45K	closed	2022-03-25	2022-03-24	420	[Priority: Major, Status: Completed, Originati...	NaN	NaN	NaN	NaN	NaN
4	KSP225CM49P	closed	2022-03-25	2022-03-24	417	[Priority: Major, Status: Approved, Originatio...	NaN	NaN	NaN	NaN	NaN
...	...	...	...	...	...	...	...	...	...	...	...
266	SPM587SP22	open	None	2022-02-20	5	[Priority: Low, Status: pendingReview, Origina...	NaN	NaN	NaN	NaN	NaN
267	SPM587SP22	open	None	2022-02-20	4	[Status: inProgress, Priority: High, Originati...	NaN	NaN	NaN	NaN	NaN
268	SPM587SP22	closed	2022-02-24	2022-02-20	3	[Priority: Critical, Status: Completed, Origin...	NaN	NaN	NaN	NaN	NaN
269	SPM587SP22	closed	2022-02-22	2022-02-20	2	[Priority: Major, Status: Rejected, Originatio...	NaN	NaN	NaN	NaN	NaN
270	SPM587SP22	closed	2022-02-20	2022-02-18	1	[Priority: Low, Status: Approved, OriginationP...	NaN	NaN	NaN	NaN	NaN

271 rows × 11 columns

In [31]:
```
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']:
            if len(label.split(':')) == 2:
                label_name= (label.split(':'))[0]
                label_value= (label.split(':'))[1]
                wrangled_issues_df.loc[i, label_name]=label_value
```

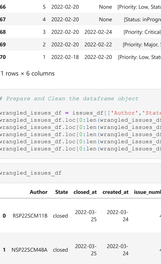
In [32]:
```
wrangled_issues_df
```

Out[32]:

	Author	State	closed_at	created_at	issue_number	labels	OriginationPhase	DetectionPhase	Category	Priority	
0	RSP225CM11B	closed	2022-03-25	2022-03-24	425	[Priority: Critical, Status: Approved, Detecti...	NaN	Requirements	Bug	Critical	
1	NSP225CM48A	closed	2022-03-25	2022-03-24	423	[Priority: Critical, Status: Approved, Origina...	Design	Design	Bug	Critical	
2	RSP225CM11B	closed	2022-03-25	2022-03-24	422	[Priority: Critical, Status: Approved, Detecti...	NaN	Requirements	Bug	Critical	
3	JSP225CM45K	closed	2022-03-25	2022-03-24	420	[Priority: Major, Status: Completed, Originati...	Design	Testing	Enhancement	Major	C
4	KSP225CM49P	closed	2022-03-25	2022-03-24	417	[Priority: Major, Status: Approved, Originatio...	Requirements	Testing	Enhancement	Major	
...	...	...	...	...	...	...	...	...	...	...	...
266	SPM587SP22	open	None	2022-02-20	5	[Priority: Low, Status: pendingReview, Origina...	Field	Field	Inquiry	Low	pend
267	SPM587SP22	open	None	2022-02-20	4	[Status: inProgress, Priority: High, Originati...	Requirements	Requirements	Enhancement	High	
268	SPM587SP22	closed	2022-02-24	2022-02-20	3	[Priority: Critical, Status: Completed, Origin...	Documentation	Coding	Bug	Critical	C
269	SPM587SP22	closed	2022-02-22	2022-02-20	2	[Priority: Major, Status: Rejected, Originatio...	Field	Field	Inquiry	Major	
270	SPM587SP22	closed	2022-02-20	2022-02-18	1	[Priority: Low, Status: Approved, OriginationP...	Design	Field	Bug	Low	

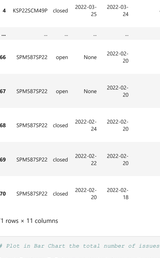
271 rows × 11 columns

In [33]:
```
# 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=['red', 'yellow', 'blue',
```



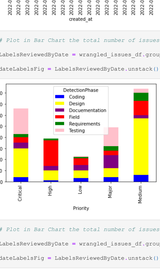
In [34]:
```
# Plot in Bar Chart the total number of issues created for every Phase based on their priorites

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

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

In [35]:
```
# 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',
```



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

In [36]:
```
# Requirement #1: Add your code here
issueClosedByDate = wrangled_issues_df.groupby(['closed_at', 'OriginationPhase']).closed_at.count()
dateLabelsFig = issueClosedByDate.unstack().plot(kind='bar',stacked=True,  color=['blue', 'purple', 'red', 'ye
```



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

In [37]:
```
# Requirement #1: Add your code here
issueClosedByDate = wrangled_issues_df.groupby(['created_at', 'Status']).created_at.count()
dateLabelsFig = issueClosedByDate.unstack().plot(kind='bar',stacked=True,  color=['blue', 'purple', 'red', 'ye
```