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```
import pandas as pd
         import numpy as np
         import seaborn as sns
         import matplotlib.pyplot as plt
         data=pd.read_csv("country_wise_latest.csv")
         data
Out[8]:
                                                                                                    Deaths / 100
                                                                                                                                                                                 1 week %
                                                                                 New
                                                                                             New
                                                                                                                 Recovered / 100
                                                                                                                                      Deaths / 100
                                                                                                                                                   Confirmed last
                                                                      New
                                                                                                                                                                      1 week
                Country/Region Confirmed Deaths Recovered Active
                                                                                                          Cases
                                                                                                                                                                     change
                                                                               deaths
                                                                                         recovered
                                                                                                                                       Recovered
                                                                                                                                                            week
                                                                                                                                                                                  increase
                                                                                                                           Cases
                                                                      cases
                    Afghanistan
                                                                                                                           69.49
                                                                                                                                                           35526
                                                                                                                                                                        737
                                                                                                                                                                                      2.07
                                   36263
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                                                     25198
                                                             9796
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                                    4880
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                                   27973
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                        Angola
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                  West Bank and
         182
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                        Yemen
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                       Zambia
                                    4552
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                                                                                                                                                            3326
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                                                                                                                                                                                     36.86
         186
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                     Zimbabwe
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                                                                                                                           20.04
                                                                                                                                             6.64
                                                                                                                                                                                     57.85
         187 rows × 15 columns
 In [9]: data.head()
Out[9]:
                                                                             New
                                                                                          New
                                                                                                 Deaths / 100
                                                                                                               Recovered / 100
                                                                                                                                    Deaths / 100
                                                                                                                                                  Confirmed last
                                                                                                                                                                                 1 week %
                                                                   New
                                                                                                                                                                     1 week
            Country/Region Confirmed Deaths Recovered Active
                                                                                                                                                                     change
                                                                                                                                                                                  increase
                                                                            deaths
                                                                                                       Cases
                                                                                                                        Cases
                                                                                                                                      Recovered
                                                                                                                                                          week
                                                                                      recovered
                                                                   cases
                                                                                                                                                                        737
                                36263
                                         1269
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                                  950
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                                                                                                         4.32
                                                                                                                         25.47
                                                                                                                                           16.94
                                                                                                                                                            749
                                                                                                                                                                                    26.84
         4
                    Angola
In [10]: data.shape
Out[10]: (187, 15)
In [11]: data.columns
Out[11]: Index(['Country/Region', 'Confirmed', 'Deaths', 'Recovered', 'Active',
                 'New cases', 'New deaths', 'New recovered', 'Deaths / 100 Cases',
                 'Recovered / 100 Cases', 'Deaths / 100 Recovered',
                 'Confirmed last week', '1 week change', '1 week % increase',
                 'WHO Region'],
               dtype='object')
In [12]: data.describe
Out[12]: <bound method NDFrame.describe of
                                                    Country/Region Confirmed Deaths Recovered Active New cases \
                                                         25198
                                                                  9796
                                                                              106
                     Afghanistan
                                      36263
                                               1269
                                                144
                                                                  1991
                                                                              117
                         Albania
                                       4880
                                                          2745
                         Algeria
                                      27973
                                                         18837
                                                                  7973
                                                                              616
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                                                                    52
                         Andorra
                                        907
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                          Angola
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                                                           242
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                                                 78
             West Bank and Gaza
                                      10621
                                                          3752
                                                                  6791
                                                                              152
         183
                  Western Sahara
                                         10
         184
                                                                   375
                           Yemen
                                       1691
                                                483
                                                           833
                                                                               10
                                                                  1597
         185
                          Zambia
                                       4552
                                                140
                                                          2815
         186
                        Zimbabwe
                                       2704
                                                           542
                                                                  2126
                                                                              192
                                                 36
              New deaths New recovered Deaths / 100 Cases Recovered / 100 Cases \
                       10
                                     18
                                                       3.50
                                                                             69.49
                                                       2.95
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                                    749
                                                       5.73
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         182
                                                       0.73
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         185
                                    465
                                                       3.08
                                                                             61.84
         186
                                                       1.33
                                                                             20.04
                                     24
              Deaths / 100 Recovered Confirmed last week 1 week change
                                5.04
                                                    35526
                                                                     737
                                5.25
                                                     4171
                                                                     709
                                6.17
                                                                    4282
                                                    23691
                                                                      23
                                6.48
                                                      884
                                                                     201
                               16.94
                                                      749
```

WHO Region

Mediterranean

Eastern

Europe

Africa

Europe

Africa

Eastern

Africa

Eastern

Africa

Africa

Mediterranean

Mediterranean

WHO Region

Mediterranean

Eastern

Europe

Africa

Europe

Africa

185 4.97 3326 186 6.64 1713 1 week % increase WHO Region 2.07 Eastern Mediterranean 17.00 Europe 18.07 Africa 2.60 Europe 26.84 Africa 182 19.12 Eastern Mediterranean 183 0.00 Africa 184 4.45 Eastern Mediterranean Africa 185 36.86

57.85

• • •

2.08

12.50

57.98

• • •

8916

1619

Africa

• • •

72

1226

991

1705

[187 rows x 15 columns]>

• •

182

184

186

cols_to_drop = ["1 week change", "1 week % increase"] existing_cols = [col for col in cols_to_drop if col in data.columns] data.drop(existing_cols, axis=1, inplace=True) data

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Out[13]: **Confirmed last** Deaths / 100 Recovered / 100 Deaths / 100 New New New Country/Region Confirmed Deaths Recovered Active **WHO Region** deaths recovered Cases Cases Recovered week cases Eastern Afghanistan 36263 1269 25198 9796 106 10 18 3.50 69.49 5.04 35526 Mediterranean Albania 4880 117 63 2.95 56.25 5.25 4171 144 2745 1991 6 Europe Algeria 27973 1163 18837 7973 616 749 4.16 6.17 23691 Africa 8 67.34 2 52 52 Andorra 907 803 10 5.73 88.53 6.48 884 Europe 3 0 0 667 4.32 25.47 16.94 749 Angola 950 242 18 Africa 41 ••• West Bank and Eastern 182 10621 78 3752 152 0.73 6791 0 35.33 2.08 8916 Gaza Mediterranean Africa 183 Western Sahara 10.00 80.00 12.50 10 0 0 10 Eastern 1691 833 10 36 28.56 57.98 184 483 375 49.26 1619 Yemen Mediterranean 185 Zambia 4552 71 465 3.08 4.97 3326 Africa 140 2815 1597 61.84 186 2704 36 542 192 24 1.33 20.04 6.64 1713 Africa Zimbabwe 2126

187 rows × 13 columns

corona = data.groupby("Country/Region").sum()

corona.head()

Confirmed Deaths Recovered Active New cases New deaths New recovered Deaths / 100 Cases Recovered / 100 Cases Deaths / 100 Recovered Confirmed last week **WHO Region Country/Region** 35526 Eastern Mediterranean **Afghanistan** 36263 25198 106 10 18 3.50 69.49 5.04 1269 9796 4880 63 5.25 144 2745 1991 117 2.95 56.25 4171 **Albania** 6 Europe 616 749 6.17 27973 1163 7973 8 4.16 67.34 **Algeria** 18837 23691 Africa 52 907 803 52 10 6.48 **Andorra** 0 0 5.73 88.53 884 Europe 950 667 18 4.32 41 242 0 25.47 16.94 749 **Angola** Africa

corona.loc["India"] corona

Out[14]:

In [15]: corona.index

Out[15]: Index(['Afghanistan', 'Albania', 'Algeria', 'Andorra', 'Angola',

'Antigua and Barbuda', 'Argentina', 'Armenia', 'Australia', 'Austria',

'United Kingdom', 'Uruguay', 'Uzbekistan', 'Venezuela', 'Vietnam',

'West Bank and Gaza', 'Western Sahara', 'Yemen', 'Zambia', 'Zimbabwe'], dtype='object', name='Country/Region', length=187)

In [16]: corona2 = corona.apply(pd.to_numeric, errors='coerce')

corona2

Out[16]: Confirmed Deaths Recovered Active New cases New deaths New recovered Deaths / 100 Cases Recovered / 100 Cases Deaths / 100 Recovered Confirmed last week WHO Region

Country/Region												
Afghanistan	36263	1269	25198	9796	106	10	18	3.50	69.49	5.04	35526	NaN
Albania	4880	144	2745	1991	117	6	63	2.95	56.25	5.25	4171	NaN
Algeria	27973	1163	18837	7973	616	8	749	4.16	67.34	6.17	23691	NaN
Andorra	907	52	803	52	10	0	0	5.73	88.53	6.48	884	NaN
Angola	950	41	242	667	18	1	0	4.32	25.47	16.94	749	NaN
•••	•••	•••	•••		•••	•••	•••	•••	•••	•••	•••	•••
West Bank and Gaza	10621	78	3752	6791	152	2	0	0.73	35.33	2.08	8916	NaN
Western Sahara	10	1	8	1	0	0	0	10.00	80.00	12.50	10	NaN
Yemen	1691	483	833	375	10	4	36	28.56	49.26	57.98	1619	NaN
Zambia	4552	140	2815	1597	71	1	465	3.08	61.84	4.97	3326	NaN
Zimbabwe	2704	36	542	2126	192	2	24	1.33	20.04	6.64	1713	NaN

187 rows × 12 columns

In [17]: corona.loc["India"].dtype

Out[17]: dtype('0')

In [18]: corona.columns

Out[18]: Index(['Confirmed', 'Deaths', 'Recovered', 'Active', 'New cases', 'New deaths',

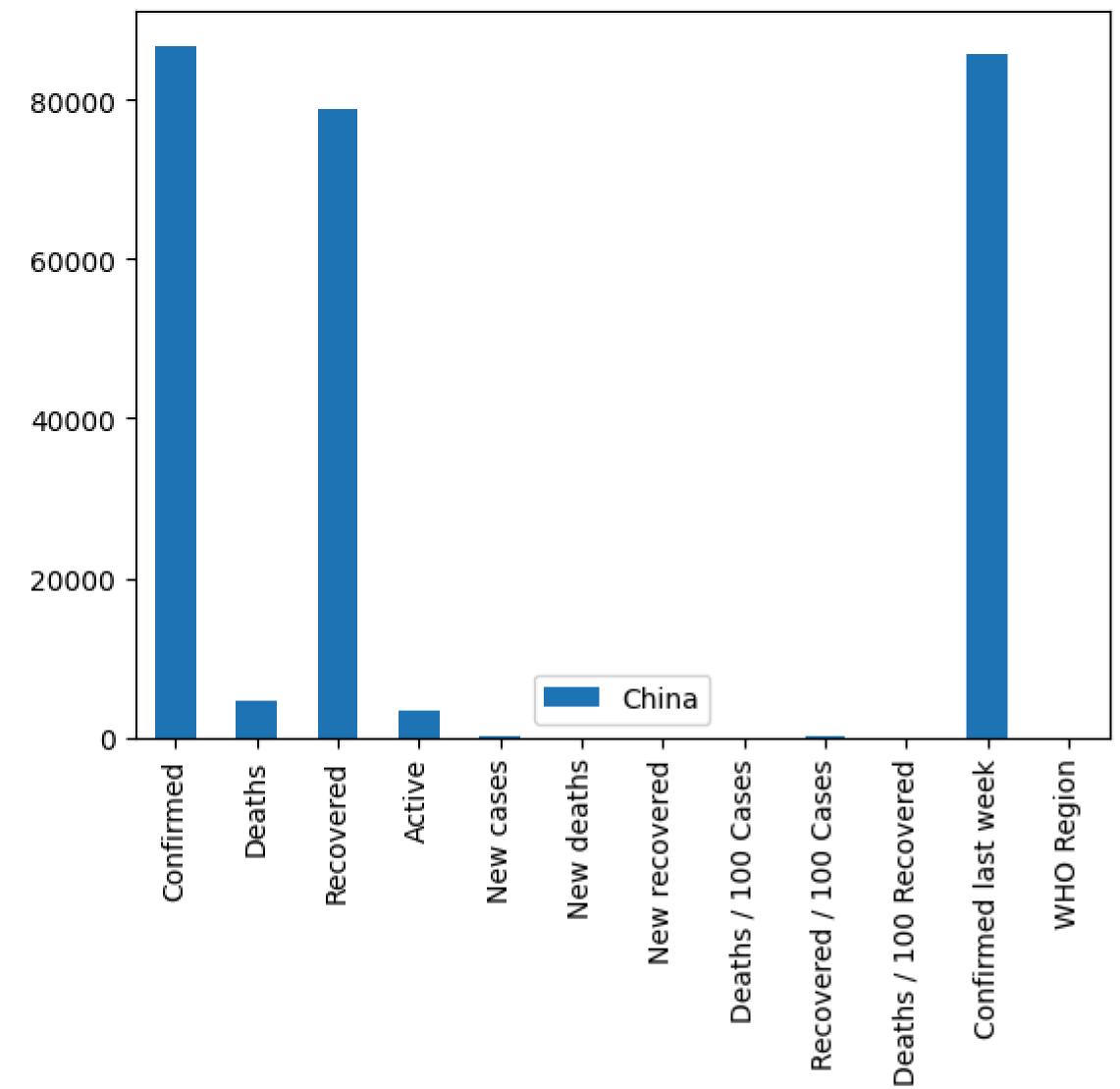
'New recovered', 'Deaths / 100 Cases', 'Recovered / 100 Cases', 'Deaths / 100 Recovered', 'Confirmed last week', 'WHO Region'],

dtype='object')

corona2.loc['China'].plot(kind="bar") plt.xticks(rotation=90)

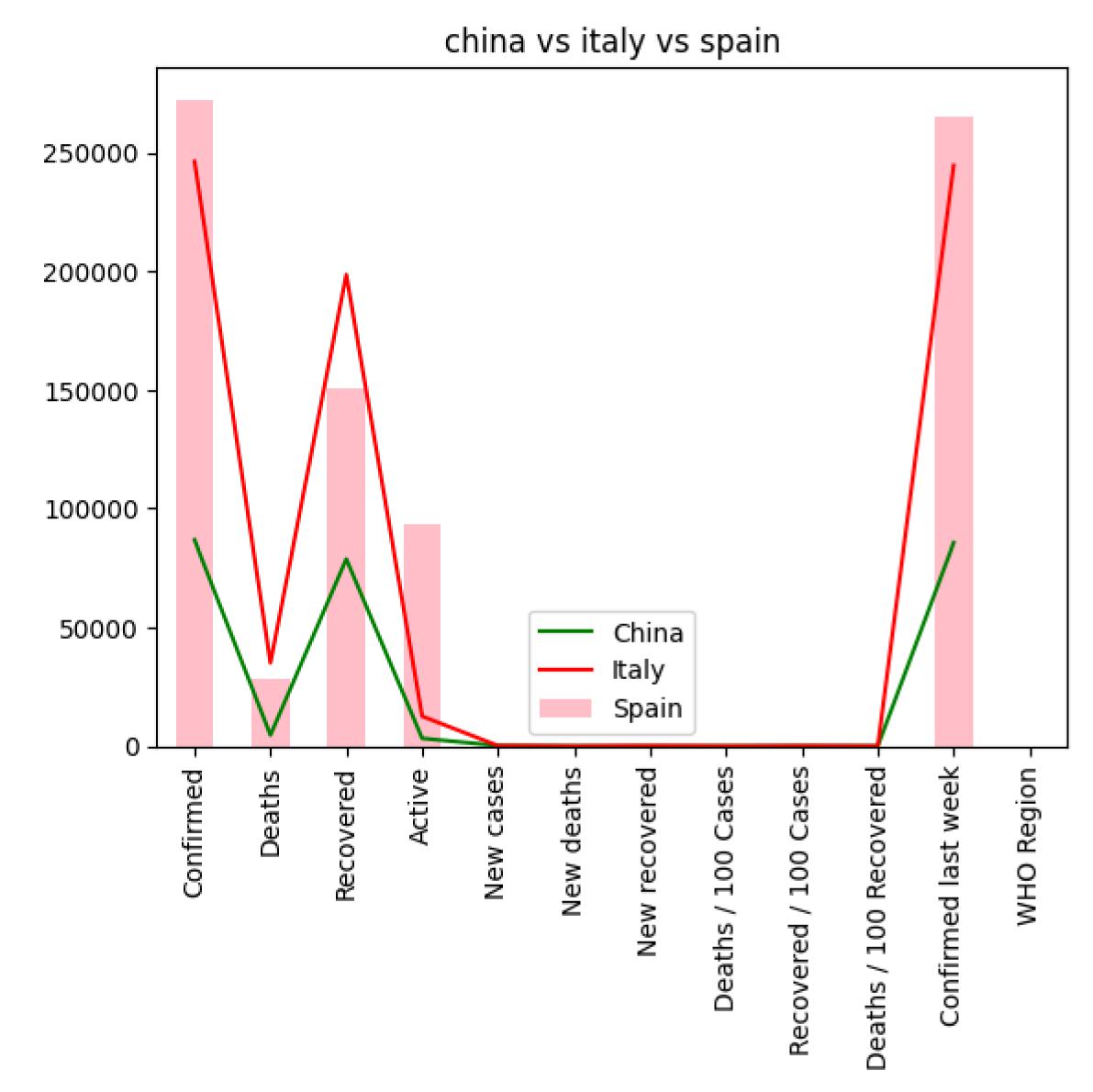
plt.legend()

Out[19]: <matplotlib.legend.Legend at 0x1a565ed7a50>



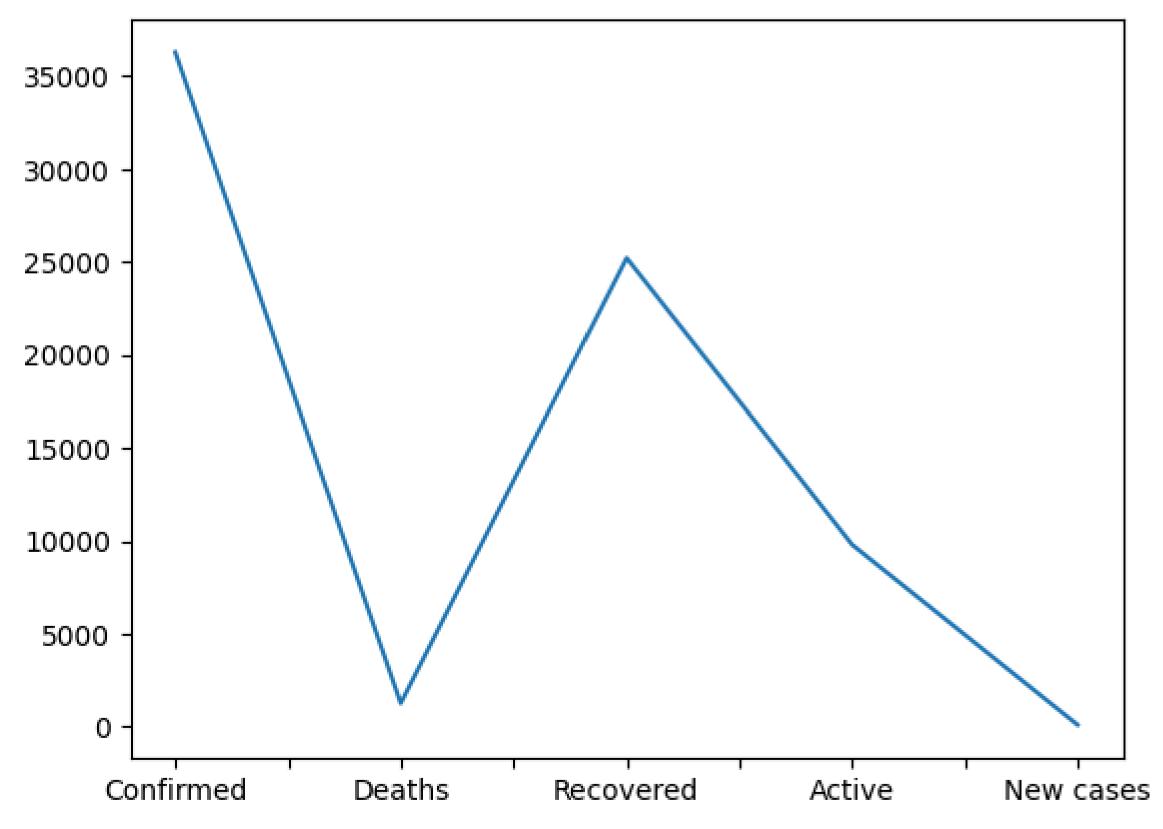
```
In [20]: corona2.loc['China'].plot(c='green')
    corona2.loc['Italy'].plot(c='red')
    corona2.loc['Spain'].plot(kind='bar',color='pink')
    plt.legend()
    plt.title("china vs italy vs spain")
```

Out[20]: Text(0.5, 1.0, 'china vs italy vs spain')



In [21]: #Spread of the virus in China for the first 3 dates only
 corona2.loc['Afghanistan'][:5].plot()

Out[21]: <Axes: >



```
In [22]: sns.pairplot(data[['New recovered','New deaths']])
  plt.suptitle("Pair wise relationship of new recovered and re",y=1.02)
  plt.show()
```

```
Pair wise relationship of new recovered and re

30000

10000

10000

10000

10000

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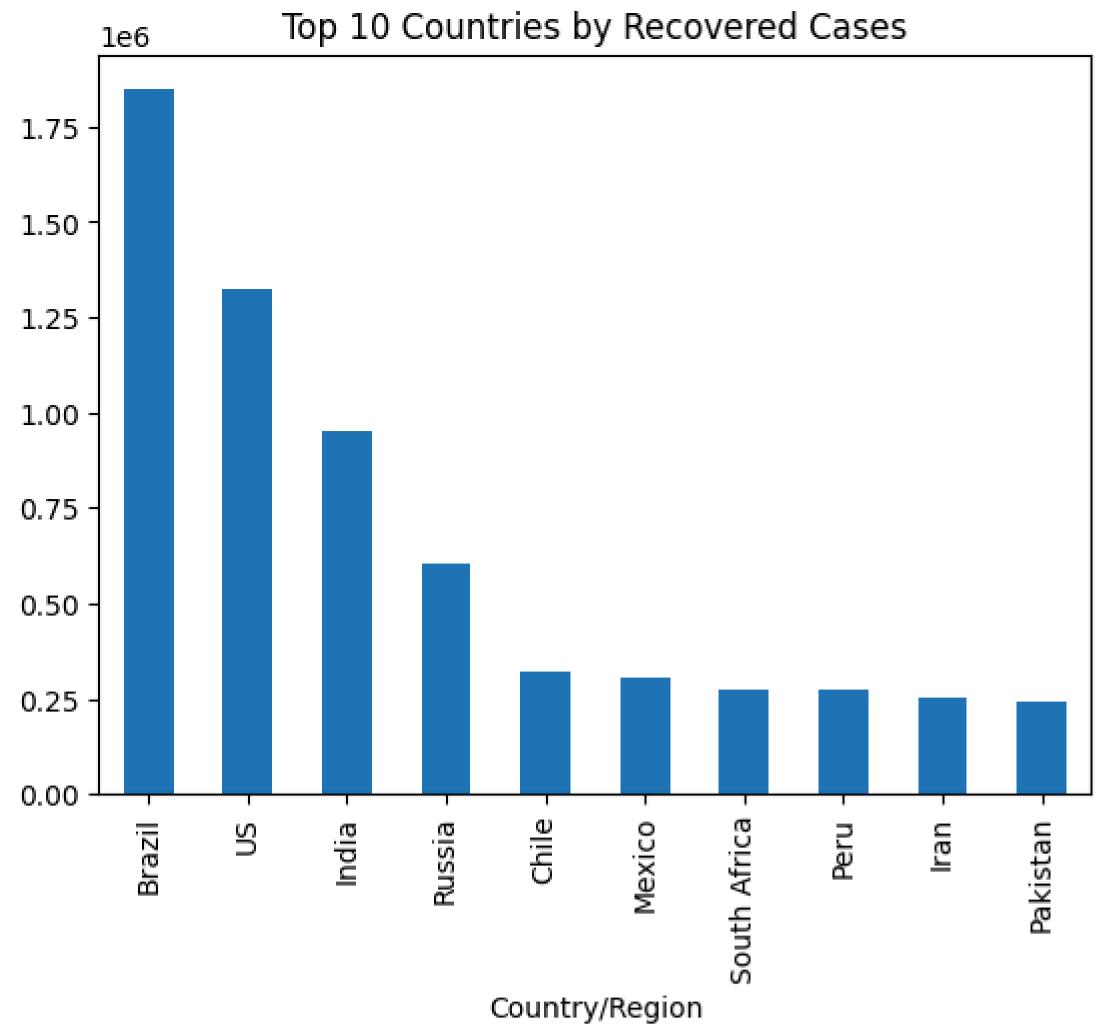
New recovered

New deaths
```

```
1000
        corona2.columns.tolist()
Out[23]: ['Confirmed',
           'Deaths',
           'Recovered',
           'Active',
           'New cases',
           'New deaths',
           'New recovered',
           'Deaths / 100 Cases',
           'Recovered / 100 Cases',
           'Deaths / 100 Recovered',
           'Confirmed last week',
           'WHO Region']
        corona2.columns = corona2.columns.str.strip() # removes spaces around names
In [27]: # Select China row, then plot the Recovered trend
         print(corona2.head())
         print(corona2.index)
         print(corona2.columns)
         corona2.loc['China', ['Confirmed', 'Deaths', 'Recovered', 'Active']].plot(kind='bar')
                       Confirmed Deaths Recovered Active New cases New deaths \
       Country/Region
       Afghanistan
                                                                              10
                           36263
                                    1269
                                             25198
                                                      9796
                                                                  106
       Albania
                            4880
                                    144
                                              2745
                                                      1991
                                                                 117
       Algeria
                                                                  616
                           27973
                                    1163
                                             18837
                                                      7973
       Andorra
                             907
                                      52
                                               803
                                                        52
                                                                   10
                             950
                                                                   18
       Angola
                                      41
                                               242
                                                       667
                       New recovered Deaths / 100 Cases Recovered / 100 Cases \
       Country/Region
       Afghanistan
                                                                         69.49
                                 18
                                                   3.50
       Albania
                                                   2.95
                                  63
                                                                         56.25
                                 749
                                                   4.16
                                                                        67.34
       Algeria
                                                   5.73
                                                                         88.53
       Andorra
                                                   4.32
                                                                        25.47
       Angola
                       Deaths / 100 Recovered Confirmed last week WHO Region
       Country/Region
       Afghanistan
                                         5.04
                                                            35526
                                                                          NaN
       Albania
                                         5.25
                                                             4171
                                                                          NaN
                                         6.17
       Algeria
                                                            23691
                                                                          NaN
                                         6.48
       Andorra
                                                              884
                                                                          NaN
       Angola
                                        16.94
                                                              749
                                                                          NaN
        Index(['Afghanistan', 'Albania', 'Algeria', 'Andorra', 'Angola',
               'Antigua and Barbuda', 'Argentina', 'Armenia', 'Australia', 'Austria',
               'United Kingdom', 'Uruguay', 'Uzbekistan', 'Venezuela', 'Vietnam',
               'West Bank and Gaza', 'Western Sahara', 'Yemen', 'Zambia', 'Zimbabwe'],
             dtype='object', name='Country/Region', length=187)
        Index(['Confirmed', 'Deaths', 'Recovered', 'Active', 'New cases', 'New deaths',
               'New recovered', 'Deaths / 100 Cases', 'Recovered / 100 Cases',
               'Deaths / 100 Recovered', 'Confirmed last week', 'WHO Region'],
             dtype='object')
Out[27]: <Axes: >
        80000 -
        60000
        40000 -
        20000 -
```

Out[31]: <Axes: title={'center': 'Top 10 Countries by Recovered Cases'}, xlabel='Country/Region'>

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In []:

In []