jupyter labtest Last Checkpoint: 6 minutes ago (autosaved)

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Run Code

In [1]:
```
import numpy as np
import matplotlib.pyplot as mp
```

In [63]:
```
rain_x=np.array([100,120,85,90,110,95])
rain_y=np.array([80,75,60,95,85,90])
rain_z=np.array([150,140,135,160,155,175])
print(rain_x)
print(rain_y)
print(rain_z)
```

```
[100 120  85  90 110  95]
[80 75 60 95 85 90]
[150 140 135 160 155 175]
```

In [59]:
```
sum_x=rain_x.sum()
sum_y=rain_y.sum()
sum_z=rain_z.sum()
print("total rainfall for x is",sum_x)
print("total rainfall for y is",sum_y)
print("total rainfall for z is",sum_z)
```

```
total rainfall for x is 600
total rainfall for y is 485
total rainfall for z is 905
```

In [8]:
```
avg_x=rain_x.mean()
avg_y=rain_y.mean()
avg_z=rain_z.mean()
print("average rainfall for city x",avg_x)
print("average rainfall for city y",avg_y)
print("average rainfall for city z",avg_z)
```

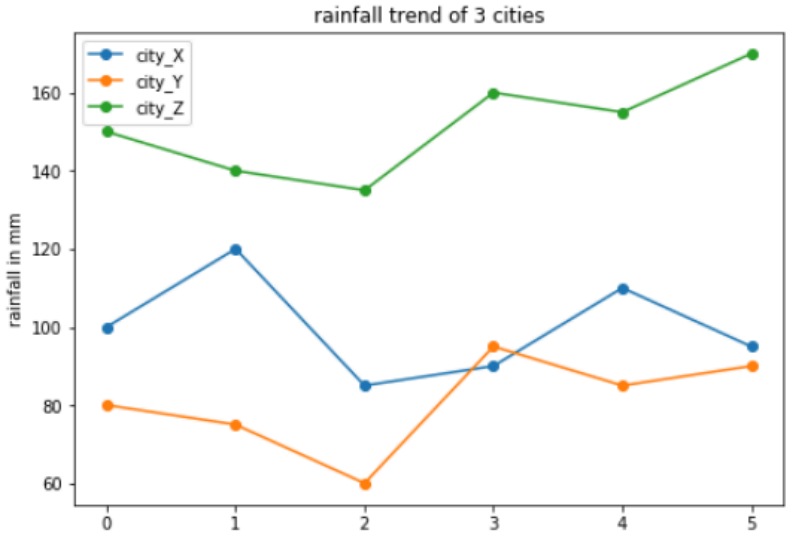
```
average rainfall for city x 100.0
average rainfall for city y 80.83333333333333
average rainfall for city z 151.66666666666666
```

In [16]:
```
def avg_rain(a,b,c):
    s=np.zeros(6)
    i=0
    for i in range(6):
        s[i]=a[i]+b[i]+c[i]
        s[i]/=3
    return s

s=avg_rain(rain_x,rain_y,rain_z)
print("average of each month are",s)
```

```
average of each month are [110.         111.66666667  93.33333333 115.         116.66666667
 118.33333333]
```

In [71]:
```
fig=mp.figure()
axes=fig.add_axes([0,0,1,1])
time=np.arange(6)
axes.plot(time,rain_x,label="city_X",marker='o')
axes.plot(time,rain_y,label="city_Y",marker='o')
axes.plot(time,rain_z,label="city_Z",marker='o')
axes.set_xlabel("months")
axes.set_ylabel("rainfall in mm")
axes.set_title("rainfall trend of 3 cities")
mp.legend()
mp.show()
```

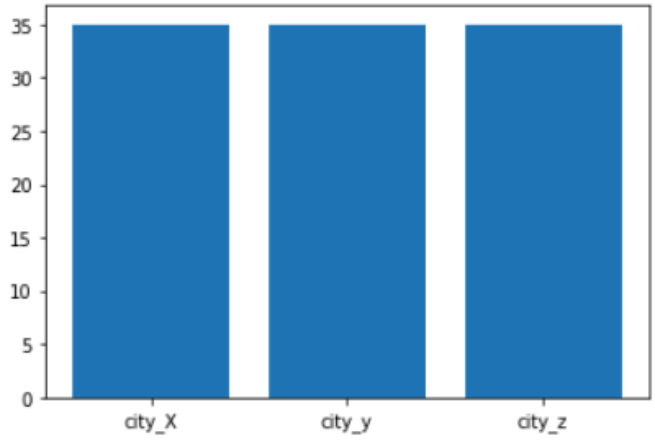


months

In [72]:
```
range_x=rain_x.max()-rain_x.min()
range_y=rain_y.max()-rain_y.min()
range_z=rain_z.max()-rain_z.min()
print("range of city x is ","(",rain_x.min(),",",rain_x.max(),")")
print("range of city y is ","(",rain_y.min(),",",rain_y.max(),")")
print("range of city z is ","(",rain_z.min(),",",rain_z.max(),")")
```

```
range of city x is  ( 85 , 120 )
range of city y is  ( 60 , 95 )
range of city z is  ( 135 , 170 )
```

In [73]:
```
y=np.array([range_x,range_y,range_z])
x=np.array(["city_X","city_y","city_z"])
mp.bar(x,y)
mp.show()
```



In [ ]: