In [1]:

```
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
import seaborn as sns
```

In [2]:

```
mydata= pd.read_csv('C:Downloads/mobile_price.csv')
```

In [3]:

```
mydata
```

Out[3]:

	battery_power	blue	clock_speed	dual_sim	fc	four_g	int_memory	m_dep	mobile_wt
0	842	0	2.2	0	1	0	7	0.6	188
1	1021	1	0.5	1	0	1	53	0.7	136
2	563	1	0.5	1	2	1	41	0.9	145
3	615	1	2.5	0	0	0	10	0.8	131
4	1821	1	1.2	0	13	1	44	0.6	141
...	...	...	...	...	...	...	...	...	...
1995	794	1	0.5	1	0	1	2	0.8	106
1996	1965	1	2.6	1	0	0	39	0.2	187
1997	1911	0	0.9	1	1	1	36	0.7	108
1998	1512	0	0.9	0	4	1	46	0.1	145
1999	510	1	2.0	1	5	1	45	0.9	168

2000 rows × 21 columns

In [4]:

```
mydata.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 2000 entries, 0 to 1999
Data columns (total 21 columns):
 #   Column         Non-Null Count  Dtype  
---  ------         --------------  -----  
 0   battery_power  2000 non-null   int64  
 1   blue           2000 non-null   int64  
 2   clock_speed    2000 non-null   float64
 3   dual_sim       2000 non-null   int64  
 4   fc             2000 non-null   int64  
 5   four_g         2000 non-null   int64  
 6   int_memory     2000 non-null   int64  
 7   m_dep          2000 non-null   float64
 8   mobile_wt      2000 non-null   int64  
 9   n_cores        2000 non-null   int64  
 10  pc             2000 non-null   int64  
 11  px_height      2000 non-null   int64  
 12  px_width       2000 non-null   int64  
 13  ram            2000 non-null   int64  
 14  sc_h           2000 non-null   int64  
 15  sc_w           2000 non-null   int64  
 16  talk_time      2000 non-null   int64  
 17  three_g        2000 non-null   int64  
 18  touch_screen   2000 non-null   int64  
 19  wifi           2000 non-null   int64  
 20  price_range    2000 non-null   int64  
dtypes: float64(2), int64(19)
memory usage: 328.2 KB
```

In [5]:

```
mydata.isnull().sum()
```

Out[5]:

```
battery_power    0
blue             0
clock_speed      0
dual_sim         0
fc               0
four_g           0
int_memory       0
m_dep            0
mobile_wt        0
n_cores          0
pc               0
px_height        0
px_width         0
ram              0
sc_h             0
sc_w             0
talk_time        0
three_g          0
touch_screen     0
wifi             0
price_range      0
dtype: int64
```

In [6]:

```
mydata.describe()
```

Out[6]:

	battery_power	blue	clock_speed	dual_sim	fc	four_g	int_mem
count	2000.000000	2000.0000	2000.000000	2000.000000	2000.000000	2000.000000	2000.000
mean	1238.518500	0.4950	1.522250	0.509500	4.309500	0.521500	32.046
std	439.418206	0.5001	0.816004	0.500035	4.341444	0.499662	18.145
min	501.000000	0.0000	0.500000	0.000000	0.000000	0.000000	2.000
25%	851.750000	0.0000	0.700000	0.000000	1.000000	0.000000	16.000
50%	1226.000000	0.0000	1.500000	1.000000	3.000000	1.000000	32.000
75%	1615.250000	1.0000	2.200000	1.000000	7.000000	1.000000	48.000
max	1998.000000	1.0000	3.000000	1.000000	19.000000	1.000000	64.000

8 rows × 21 columns

In [7]:

```
mydata_corr=mydata.corr()
```

In [8]:

```
mydata_corr
```

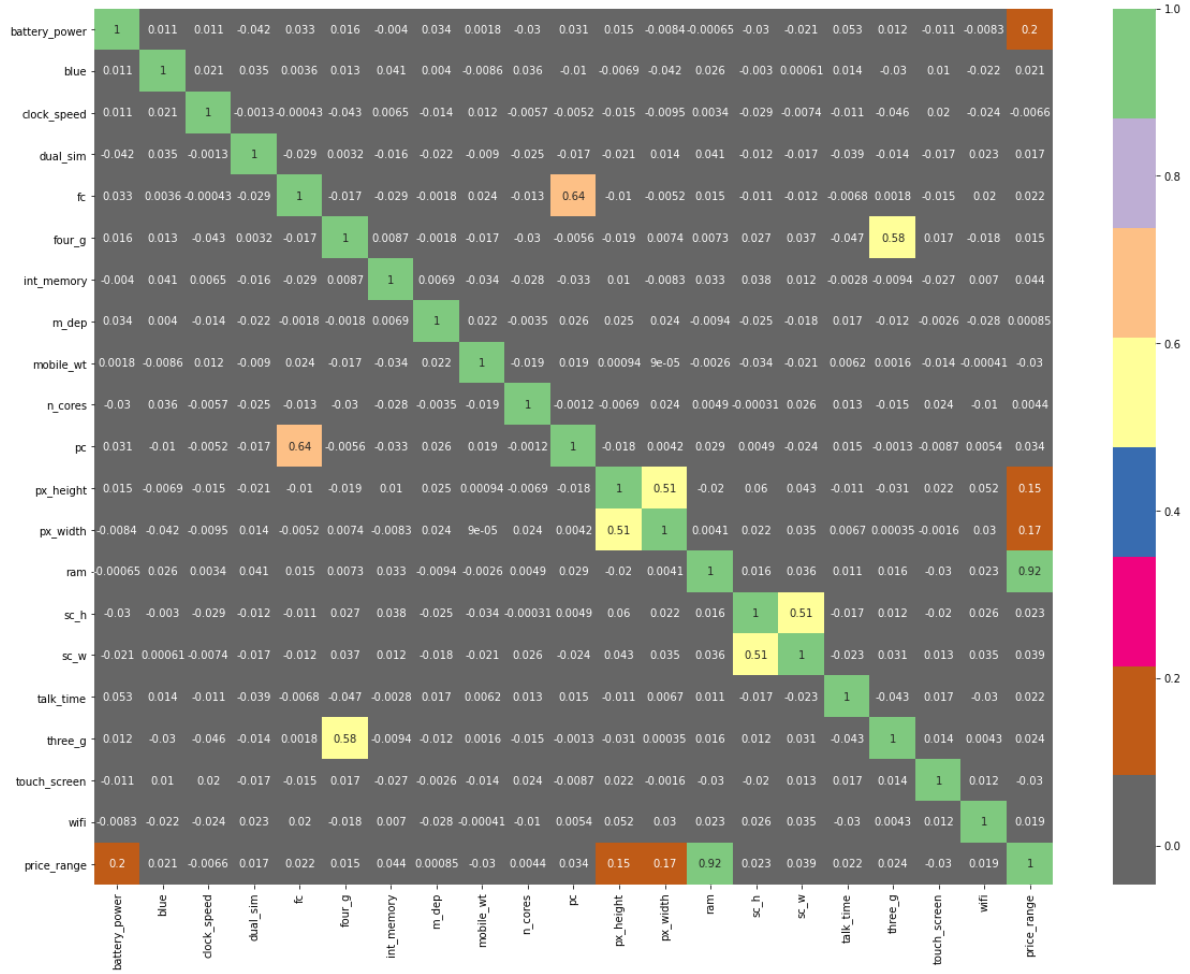
Out[8]:

	battery_power	blue	clock_speed	dual_sim	fc	four_g	int_mem
battery_power	1.000000	0.011252	0.011482	-0.041847	0.033334	0.015665	-0.004
blue	0.011252	1.000000	0.021419	0.035198	0.003593	0.013443	0.041
clock_speed	0.011482	0.021419	1.000000	-0.001315	-0.000434	-0.043073	0.006
dual_sim	-0.041847	0.035198	-0.001315	1.000000	-0.029123	0.003187	-0.015
fc	0.033334	0.003593	-0.000434	-0.029123	1.000000	-0.016560	-0.029
four_g	0.015665	0.013443	-0.043073	0.003187	-0.016560	1.000000	0.008
int_memory	-0.004004	0.041177	0.006545	-0.015679	-0.029133	0.008690	1.000
m_dep	0.034085	0.004049	-0.014364	-0.022142	-0.001791	-0.001823	0.006
mobile_wt	0.001844	-0.008605	0.012350	-0.008979	0.023618	-0.016537	-0.034
n_cores	-0.029727	0.036161	-0.005724	-0.024658	-0.013356	-0.029706	-0.028
pc	0.031441	-0.009952	-0.005245	-0.017143	0.644595	-0.005598	-0.033
px_height	0.014901	-0.006872	-0.014523	-0.020875	-0.009990	-0.019236	0.010
px_width	-0.008402	-0.041533	-0.009476	0.014291	-0.005176	0.007448	-0.008
ram	-0.000653	0.026351	0.003443	0.041072	0.015099	0.007313	0.032
sc_h	-0.029959	-0.002952	-0.029078	-0.011949	-0.011014	0.027166	0.037
sc_w	-0.021421	0.000613	-0.007378	-0.016666	-0.012373	0.037005	0.011
talk_time	0.052510	0.013934	-0.011432	-0.039404	-0.006829	-0.046628	-0.002
three_g	0.011522	-0.030236	-0.046433	-0.014008	0.001793	0.584246	-0.009
touch_screen	-0.010516	0.010061	0.019756	-0.017117	-0.014828	0.016758	-0.026
wifi	-0.008343	-0.021863	-0.024471	0.022740	0.020085	-0.017620	0.006
price_range	0.200723	0.020573	-0.006606	0.017444	0.021998	0.014772	0.044

21 rows × 21 columns

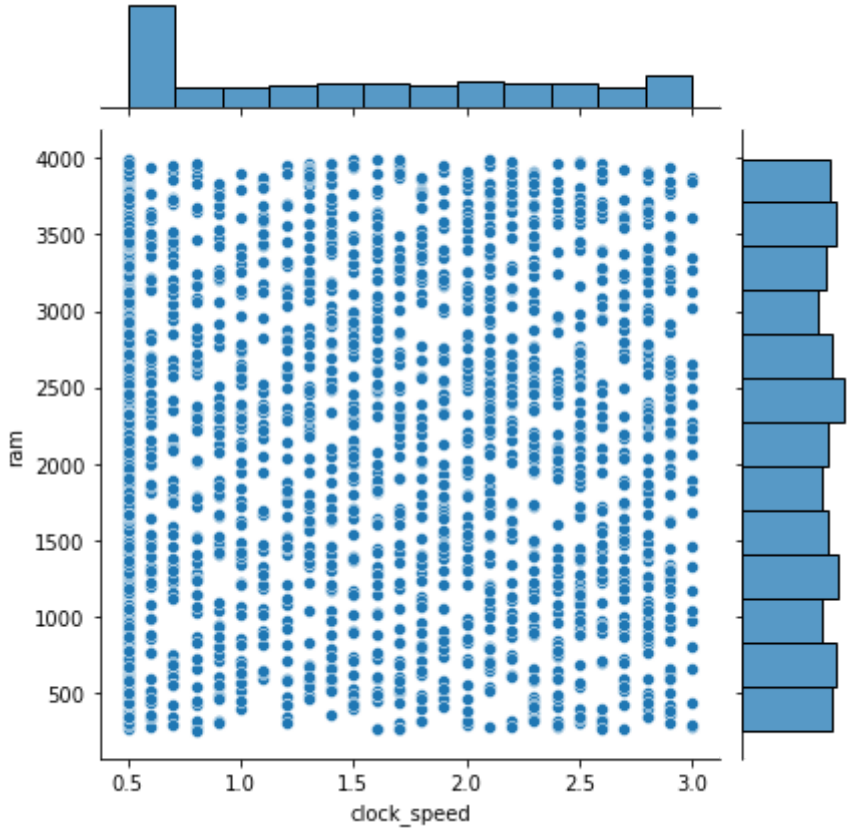
In [13]:

```
plt.figure(figsize=(20,15))
sns.heatmap(mydata_corr,annot=True,cmap='Accent_r')
plt.show()
```



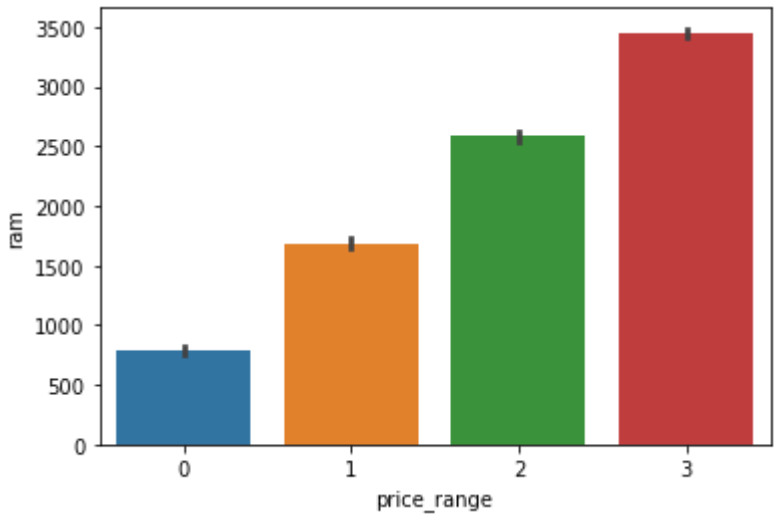
In [27]:

```
sns.jointplot(x="clock_speed",y="ram",data=mydata);
```



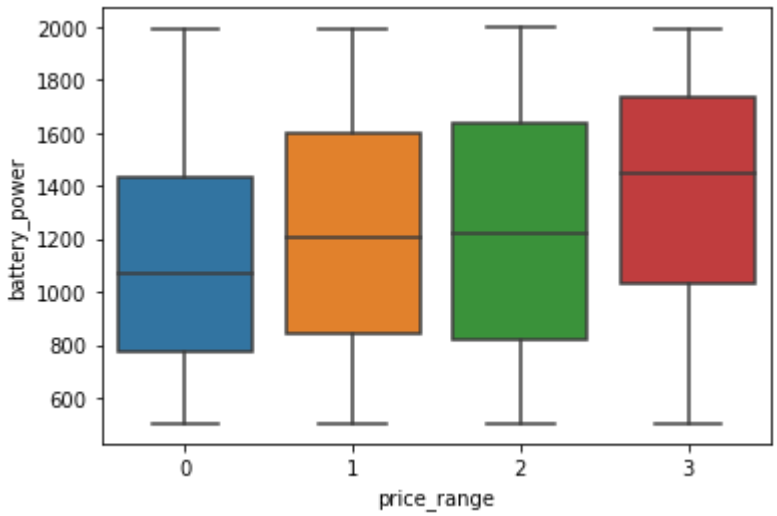
In [33]:

```
sns.barplot(x="price_range",y="ram",data=mydata);
```



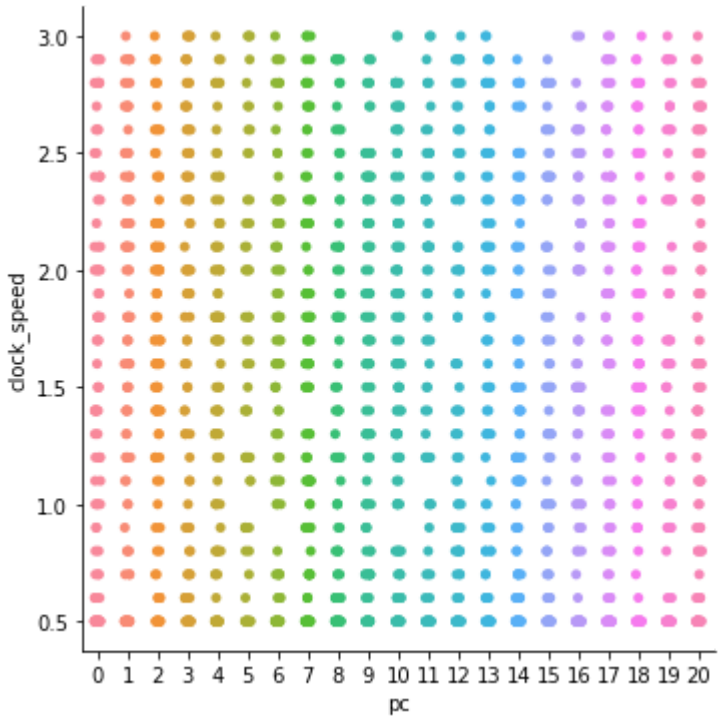
In [32]:

```
sns.boxplot(x="price_range",y="battery_power",data=mydata);
```



In [39]:

```
sns.catplot(x="pc",y="clock_speed",data=mydata);
```

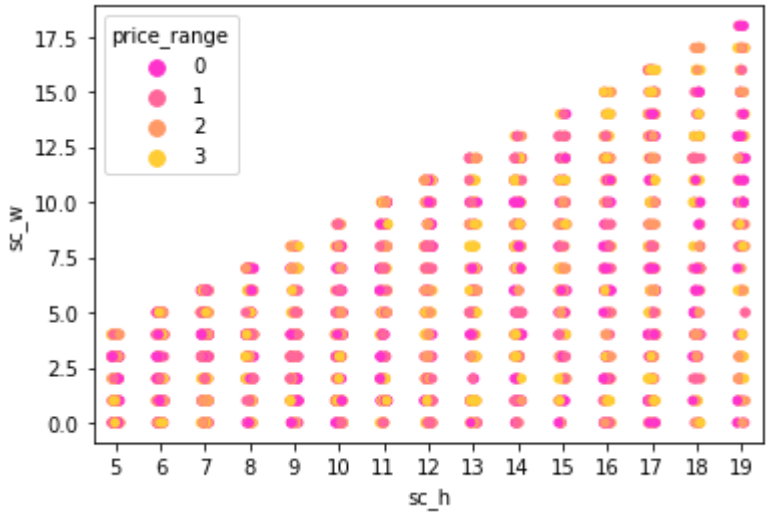


In [40]:

```
sns.stripplot(x='sc_h',y='sc_w',data=mydata,palette='spring',hue='price_range')
```

Out[40]:

```
<AxesSubplot:xlabel='sc_h', ylabel='sc_w'>
```



In [14]:

```
x_ind=mydata.drop('price_range',axis=1)
```

In [15]:

```
x_ind
```

Out[15]:

	battery_power	blue	clock_speed	dual_sim	fc	four_g	int_memory	m_dep	mobile_wt
0	842	0	2.2	0	1	0	7	0.6	188
1	1021	1	0.5	1	0	1	53	0.7	136
2	563	1	0.5	1	2	1	41	0.9	145
3	615	1	2.5	0	0	0	10	0.8	131
4	1821	1	1.2	0	13	1	44	0.6	141
...	...	...	...	...	...	...	...	...	...
1995	794	1	0.5	1	0	1	2	0.8	106
1996	1965	1	2.6	1	0	0	39	0.2	187
1997	1911	0	0.9	1	1	1	36	0.7	108
1998	1512	0	0.9	0	4	1	46	0.1	145
1999	510	1	2.0	1	5	1	45	0.9	168

2000 rows × 20 columns

In [16]:

```
y_dep=mydata.price_range
```

In [17]:

```
y_dep
```

Out[17]:

```
0       1
1       2
2       2
3       2
4       1
       ..
1995    0
1996    2
1997    3
1998    0
1999    3
Name: price_range, Length: 2000, dtype: int64
```

In [18]:

```
from sklearn.model_selection import train_test_split
```

In [19]:

```
x_train,x_test,y_train,y_test=train_test_split(x_ind,y_dep,train_size=0.8,random_state=2)
```

In [20]:

```
from sklearn.naive_bayes import GaussianNB
```

In [21]:

```
model=GaussianNB()
```

In [22]:

```
model.fit(x_train,y_train)
```

Out[22]:

```
GaussianNB()
```

In [23]:

```
y_pred=model.predict(x_test)
```

In [24]:

```
from sklearn.metrics import confusion_matrix,accuracy_score
```

In [25]:

```
accuracy_score(y_pred,y_test)
```

Out[25]:

```
0.84
```

In [ ]:

```

```