In [2]:
```
#we shall see how to generate heat maps
import seaborn as sns
%matplotlib inline
flights = sns.load_dataset('flights')
flights.to_csv("D:\\bizschoolpython\\flights.csv")
flights.head() #Number of passengers flew per month and year
```

Out[2]:

	year	month	passengers
0	1949	Jan	112
1	1949	Feb	118
2	1949	Mar	132
3	1949	Apr	129
4	1949	May	121

In [3]:
```
flights
```

Out[3]:

	year	month	passengers
0	1949	Jan	112
1	1949	Feb	118
2	1949	Mar	132
3	1949	Apr	129
4	1949	May	121
...	...	...	...
139	1960	Aug	606
140	1960	Sep	508
141	1960	Oct	461
142	1960	Nov	390
143	1960	Dec	432

144 rows × 3 columns

In [5]:
```
#Read data from csv files
import pandas as pd
flights = pd.read_csv("D:\\bizschoolpython\\flights.csv")
flights.head()
```

Out[5]:

	Unnamed: 0	year	month	passengers
0	0	1949	Jan	112
1	1	1949	Feb	118
2	2	1949	Mar	132
3	3	1949	Apr	129
4	4	1949	May	121

In [6]:
```
flights
```

Out[6]:

	Unnamed: 0	year	month	passengers
0	0	1949	Jan	112
1	1	1949	Feb	118
2	2	1949	Mar	132
3	3	1949	Apr	129
4	4	1949	May	121
...	...	...	...	...
139	139	1960	Aug	606
140	140	1960	Sep	508
141	141	1960	Oct	461
142	142	1960	Nov	390
143	143	1960	Dec	432

144 rows × 4 columns

In [7]:
```
fp=flights.pivot_table(index='month',columns='year',values='passengers')
fp
```

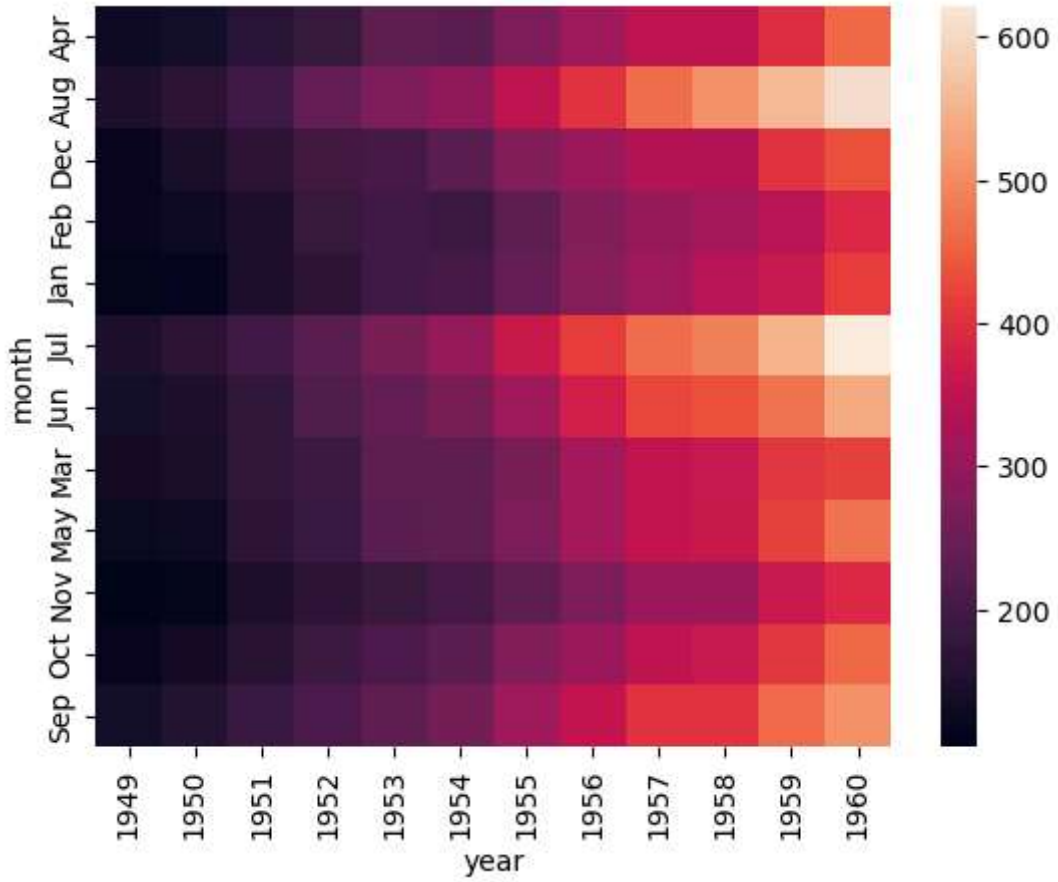
```
#read this
#in jan 1949 112 people travelled
```

Out[7]:

year	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960
month												
Apr	129	135	163	181	235	227	269	313	348	348	396	461
Aug	148	170	199	242	272	293	347	405	467	505	559	606
Dec	118	140	166	194	201	229	278	306	336	337	405	432
Feb	118	126	150	180	196	188	233	277	301	318	342	391
Jan	112	115	145	171	196	204	242	284	315	340	360	417
Jul	148	170	199	230	264	302	364	413	465	491	548	622
Jun	135	149	178	218	243	264	315	374	422	435	472	535
Mar	132	141	178	193	236	235	267	317	356	362	406	419
May	121	125	172	183	229	234	270	318	355	363	420	472
Nov	104	114	146	172	180	203	237	271	305	310	362	390
Oct	119	133	162	191	211	229	274	306	347	359	407	461
Sep	136	158	184	209	237	259	312	355	404	404	463	508

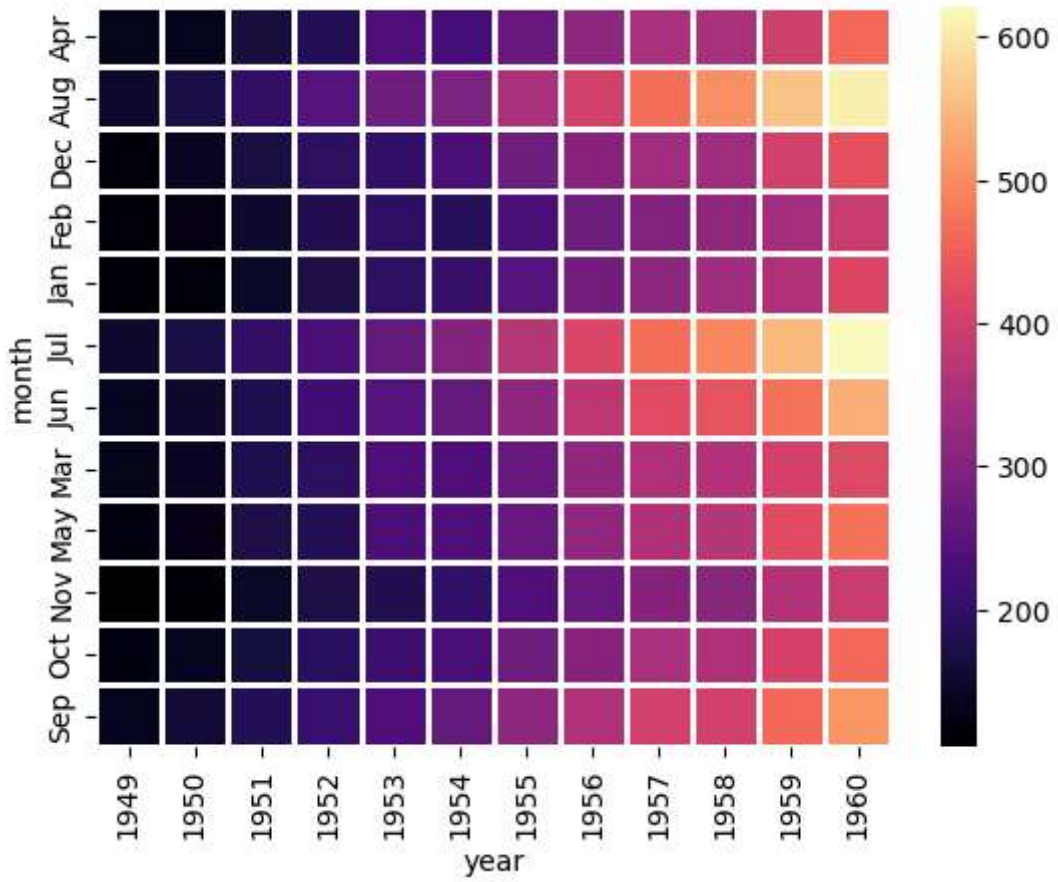
In [8]:
```
sns.heatmap(fp)
# what do you analyze
# as the year passes, more number of flights
# more number of people flying
```

Out[8]:
```
<Axes: xlabel='year', ylabel='month'>
```



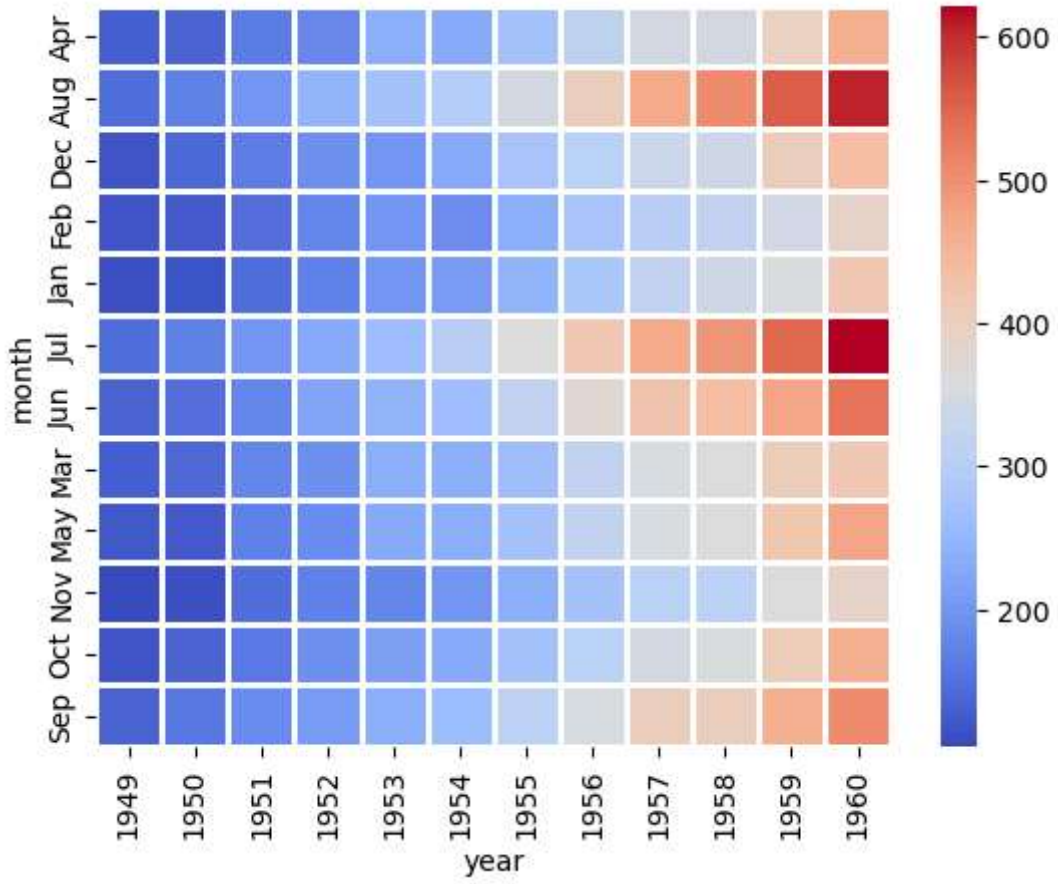
In [9]:
```
#other parameter people use is
sns.heatmap(fp, cmap='magma',linecolor='white',linewidth=2)
#cmap=coolwarm?
```

Out[9]:
```
<Axes: xlabel='year', ylabel='month'>
```



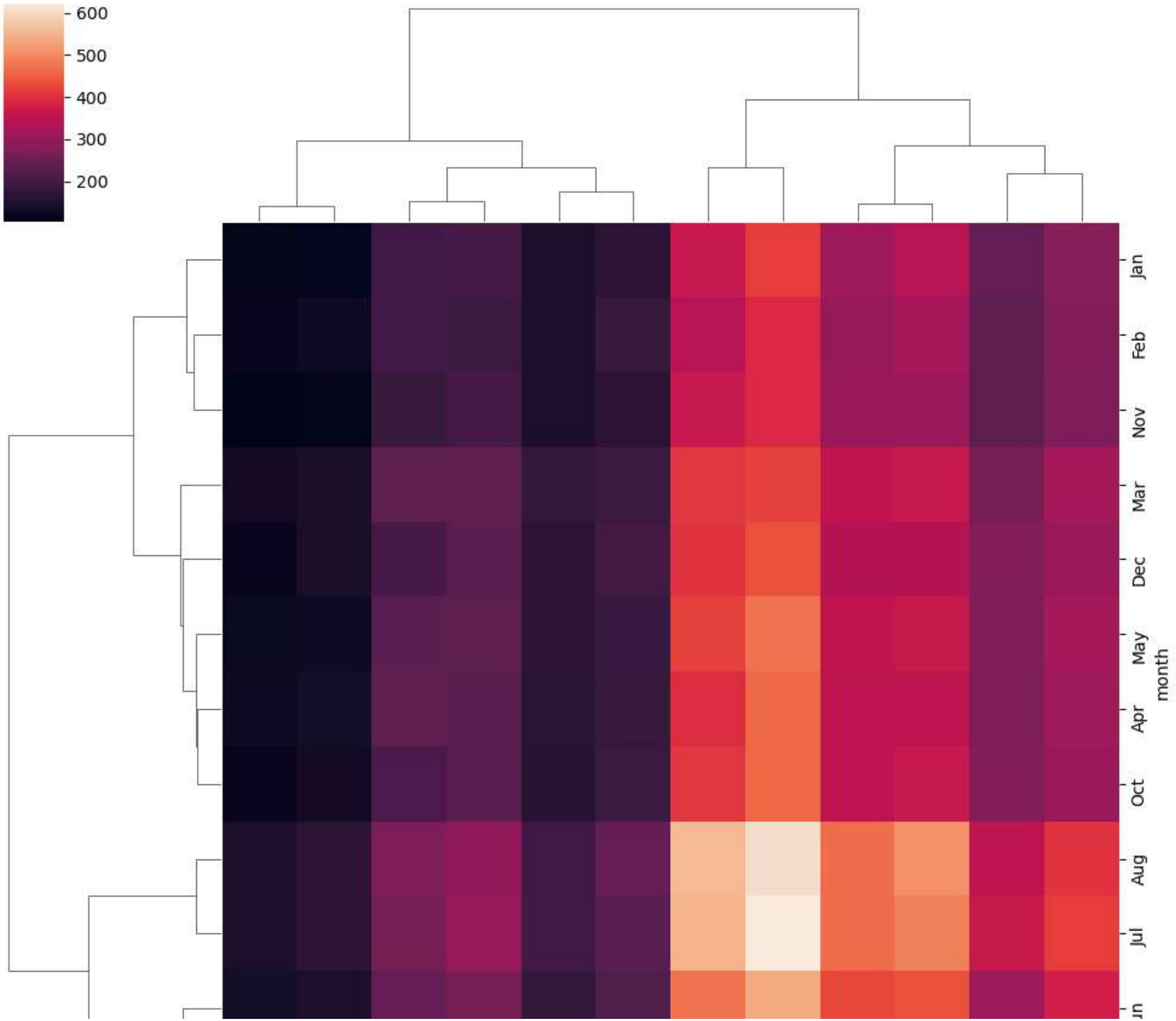
In [10]:
```
#other parameter people use is
sns.heatmap(fp, cmap='coolwarm',linecolor='white',linewidth=2)
#cmap=coolwarm?
```

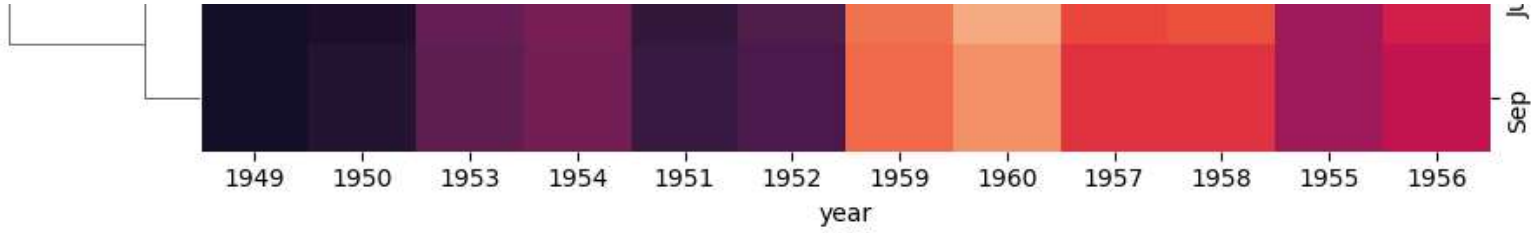
Out[10]: <Axes: xlabel='year', ylabel='month'>



In [11]:
```
#other parameter people use is cluster map
#custers the data that are similar
#similar data is grouped along each other
sns.clustermap(fp)
```

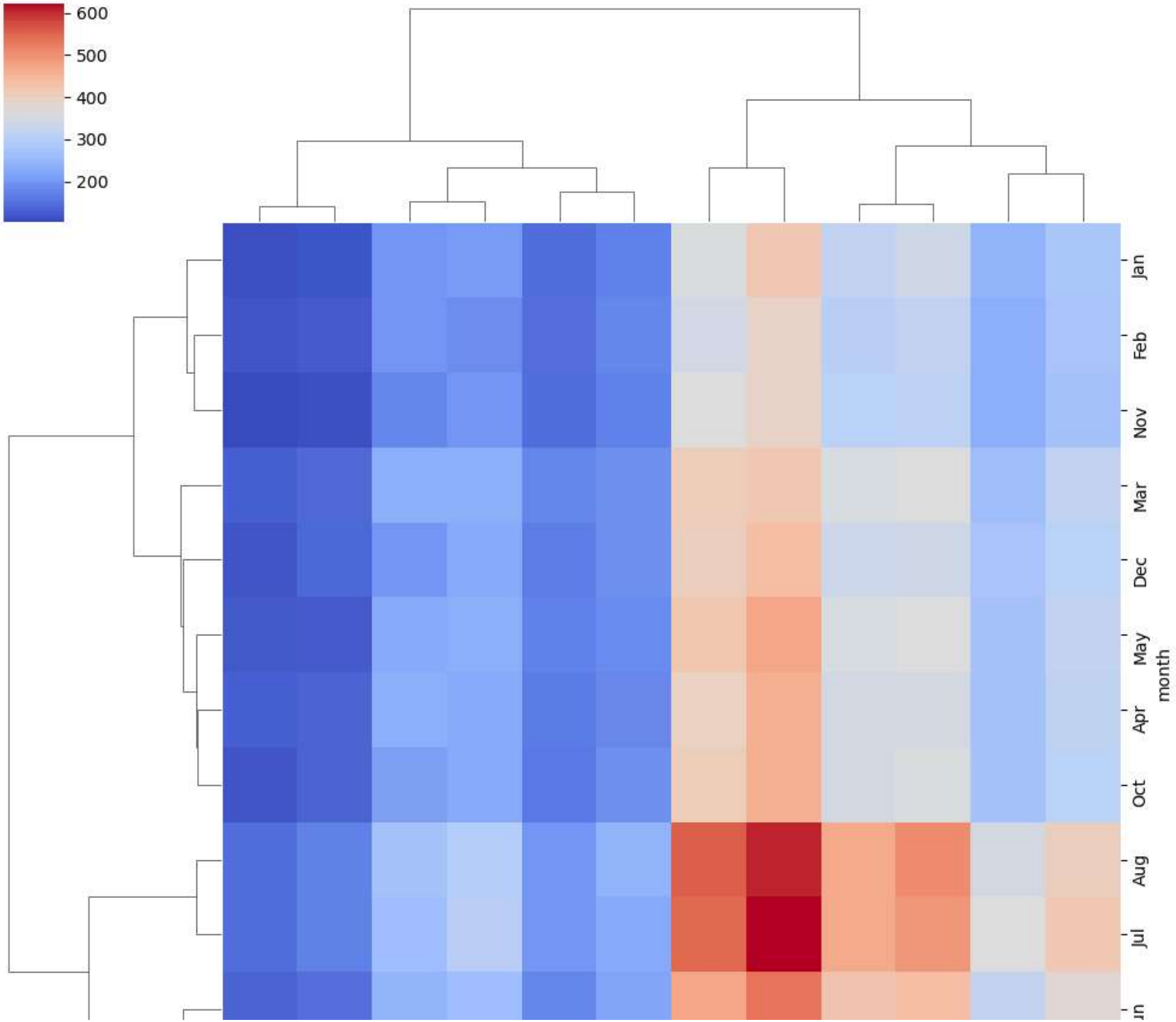
Out[11]:
```
<seaborn.matrix.ClusterGrid at 0x25833f16350>
```

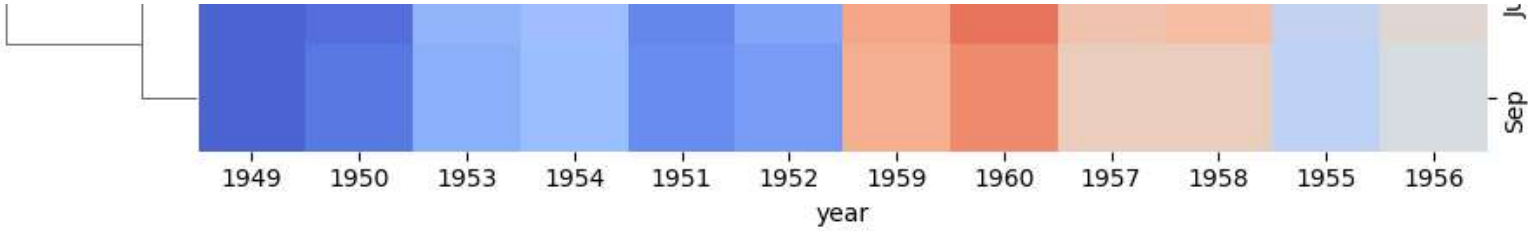

600
500
400
300
200
Jan
Feb
Nov
Mar
Dec
May
Apr
Oct
Aug
Jul
month



In [12]:
```
sns.clustermap(fp,cmap='coolwarm')
```

Out[12]:
```
<seaborn.matrix.ClusterGrid at 0x2583495c950>
```


600
500
400
300
200
Jan
Feb
Nov
Mar
Dec
May
Apr
Oct
Aug
Jul
month


Jl
Sep
1949
1950
1953
1954
1951
1952
1959
1960
1957
1958
1955
1956
year

In [ ]: