

In [6]:

```
#Data Visualization With Python

#Visualizing statistical relationships
#Visualizing distributions of data
#Visualizing categorical data

import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
import warnings
warnings.filterwarnings("ignore")

movies = pd.read_csv('Movie-Ratings.csv')
df = pd.read_csv('DemographicData.csv')
epl = pd.read_excel('EPL Data.xlsx', sheet_name=1)
```

In [7]:

```
movies.columns = ['Film', 'Genre', 'CR', 'AR', 'Budget($M)', 'Year']
movies.head()
```

Out[7]:

	Film	Genre	CR	AR	Budget(\$M)	Year
0	(500) Days of Summer	Comedy	87	81	8	2009
1	10,000 B.C.	Adventure	9	44	105	2008
2	12 Rounds	Action	30	52	20	2009
3	127 Hours	Adventure	93	84	18	2010
4	17 Again	Comedy	55	70	20	2009

In [8]:

```
df.columns = ['Country Name', 'Country Code', 'BR', 'IA', 'IG', 'BRC']
df.head()
```

Out[8]:

	Country Name	Country Code	BR	IA	IG	BRC
0	Aruba	ABW	10.244	78.9	High income	LBR
1	Afghanistan	AFG	35.253	5.9	Low income	HBR
2	Angola	AGO	45.985	19.1	Upper middle income	HBR
3	Albania	ALB	12.877	57.2	Upper middle income	LBR
4	United Arab Emirates	ARE	11.044	88.0	High income	LBR

In [9]:

```
ep1['Region'] = ep1['Region'].fillna('Default')
ep1.head()
```

Out[9]:

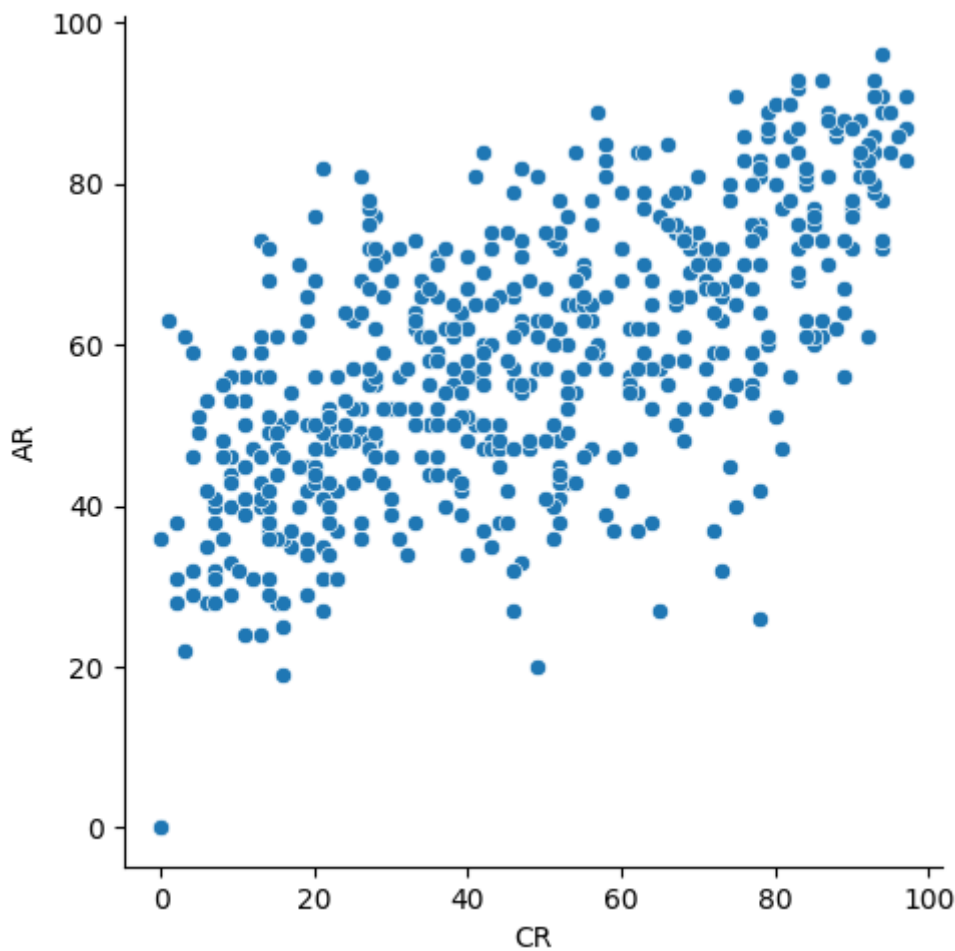
	Team	City	Stadium	Capacity	In Big Six	In EPL	Region
0	Arsenal	London	Emirates Stadium	60361	Big Six	EPL	London
1	Aston Villa	Birmingham	Villa Park	42785	Other	EPL	Central
2	Bournemouth	Bournemouth	Vitality Stadium	11464	Other	EPL	South
3	Brighton	Brighton	The Amex	30500	Other	EPL	South
4	Burnley	Burnley	Turf Moor	21401	Other	EPL	North

In [10]:

```
#Relational Plots - Simple Scatter plot
sns.relplot(x = 'CR', y = 'AR', data=movies, kind='scatter')
```

Out[10]:

<seaborn.axisgrid.FacetGrid at 0x23d98636850>



In [11]:

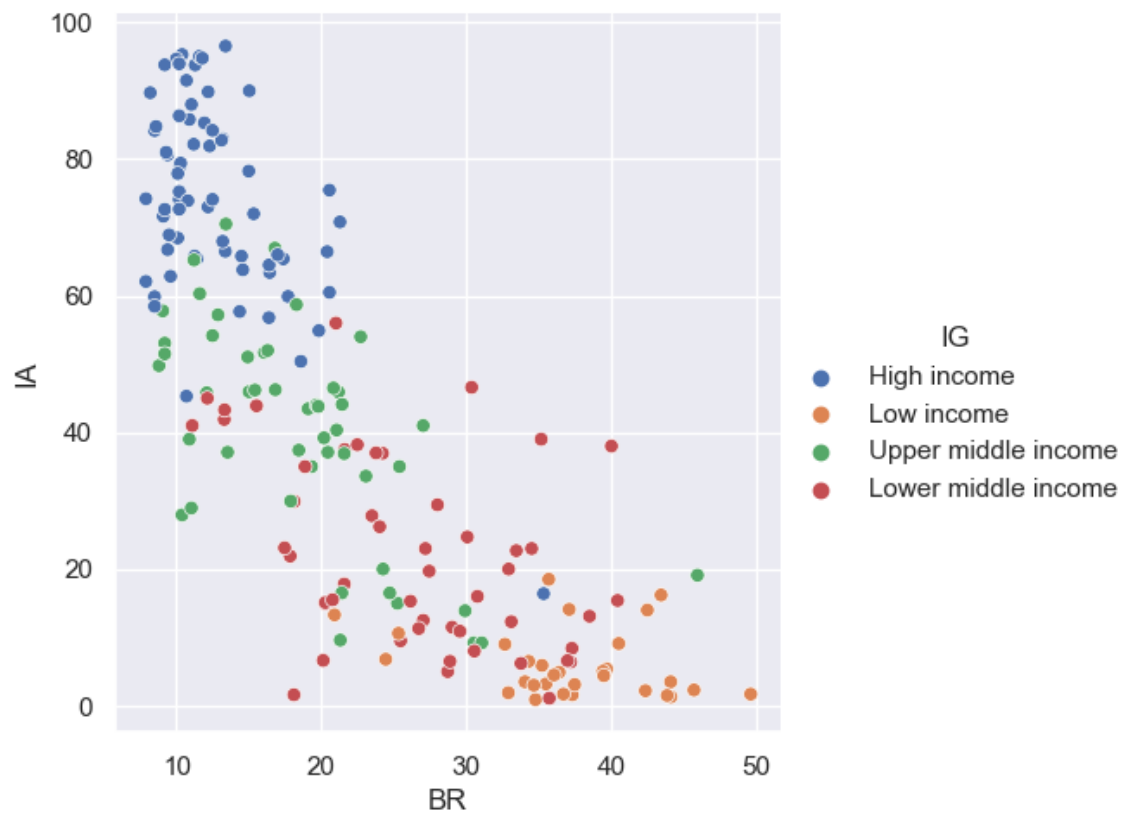
```
sns.set_theme(style="darkgrid")
```

In [14]:

```
sns.relplot(x = 'BR', y = 'IA', data=df, kind='scatter', hue='IG')
```

Out[14]:

<seaborn.axisgrid.FacetGrid at 0x23d98512c10>

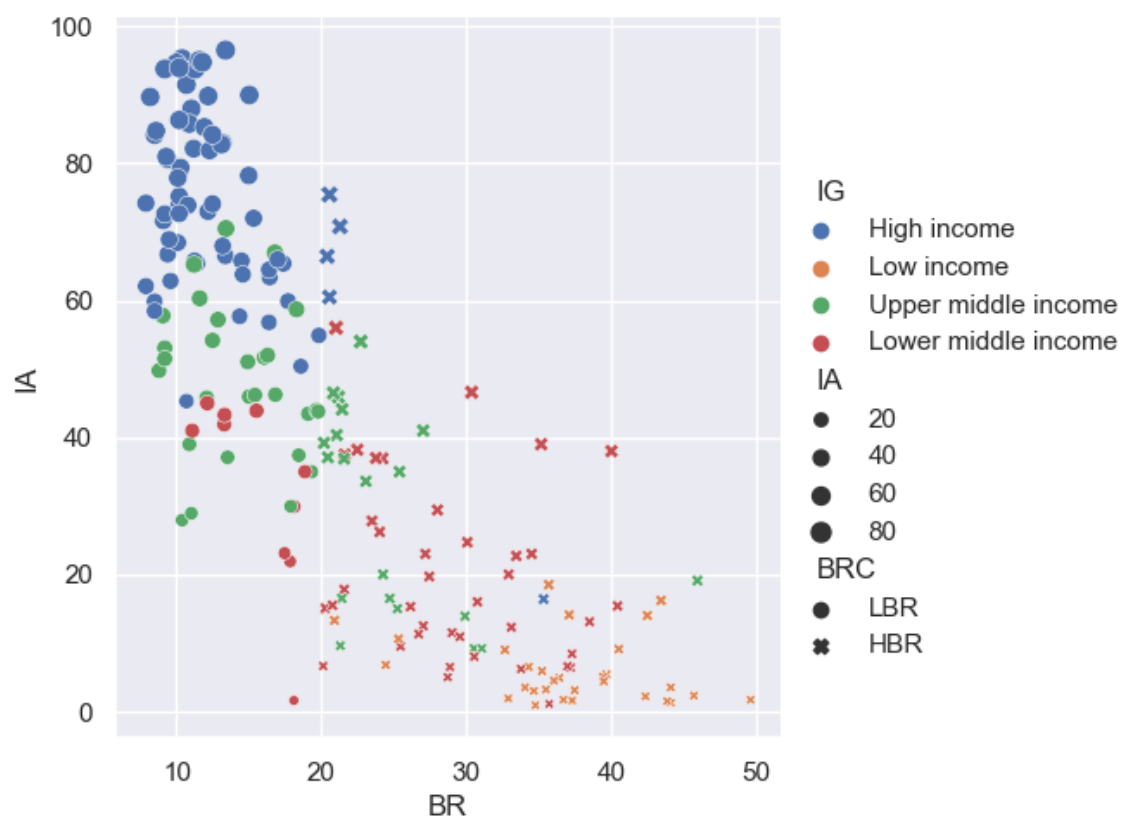


In [18]:

```
sns.relplot(data=df,  
            x = 'BR',  
            y = 'IA',  
            kind='scatter',  
            hue='IG',  
            style='BRC',  
            size='IA')
```

Out[18]:

<seaborn.axisgrid.FacetGrid at 0x23d9c502390>



In [20]:

```
#Relational Plot : Line
```

```
sns.relplot(data=movies,  
            kind='line',  
            x = 'Year',  
            y = 'Budget($M)')
```

Out[20]:

<seaborn.axisgrid.FacetGrid at 0x23d9c7f2350>

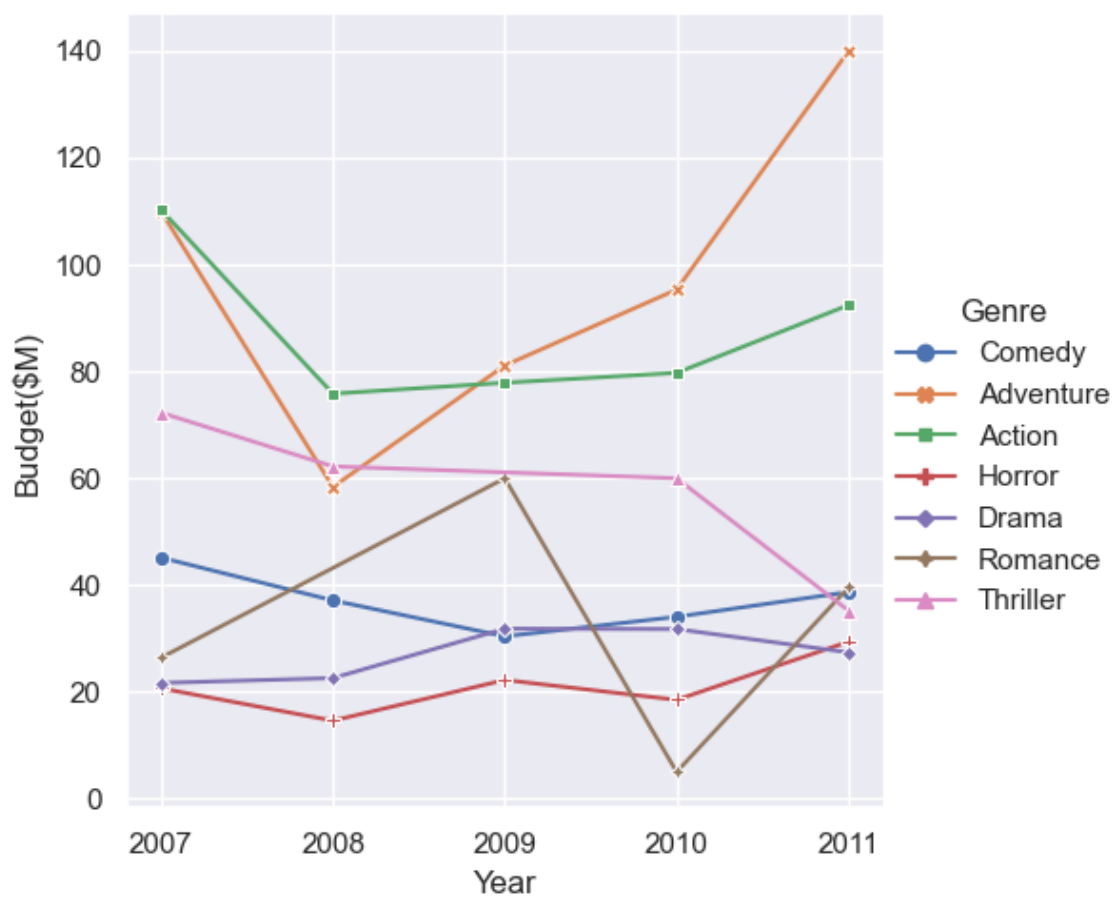


In [28]:

```
sns.relplot(data=movies, kind='line',  
            x = 'Year', y = 'Budget($M)',  
            errorbar=None,  
            hue='Genre',  
            style='Genre',  
            markers=True,  
            dashes=False)
```

Out[28]:

<seaborn.axisgrid.FacetGrid at 0x23d9e898510>



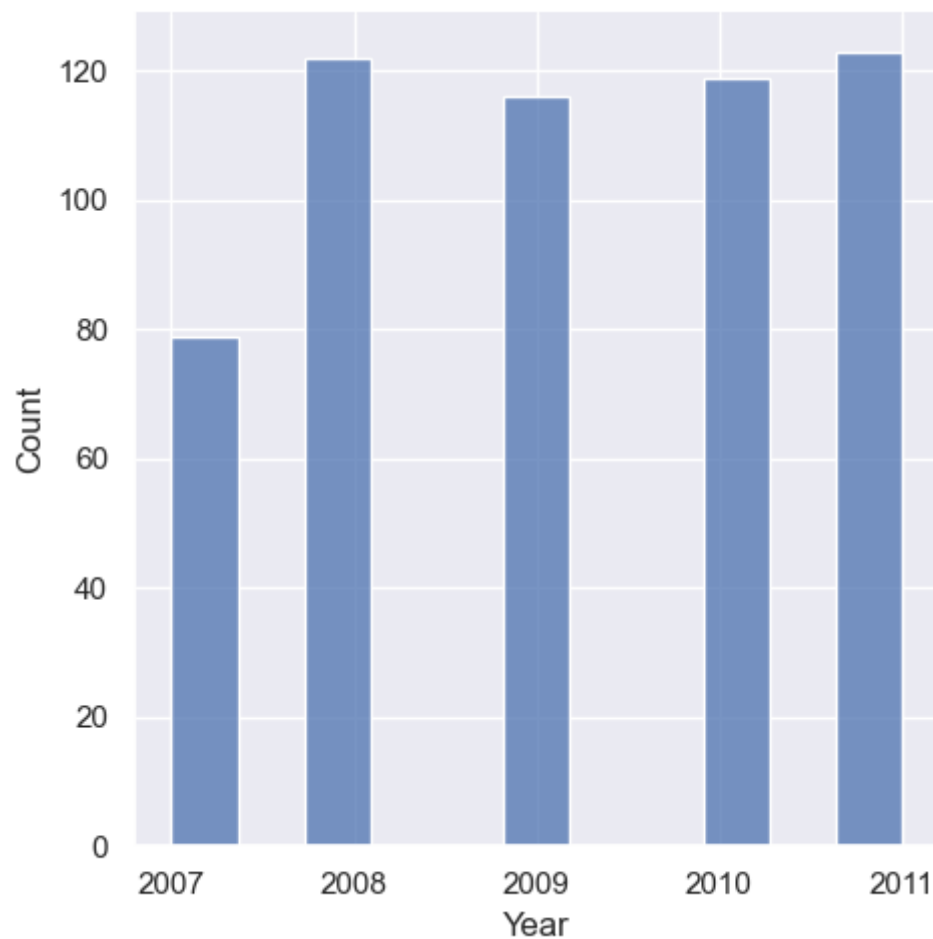
In [29]:

```
#Distribution Plots - Column Chart / Stacked column / Clustered Column / Histogram
```

```
sns.displot(movies, x='Year')
```

Out[29]:

<seaborn.axisgrid.FacetGrid at 0x23d9bb29d50>

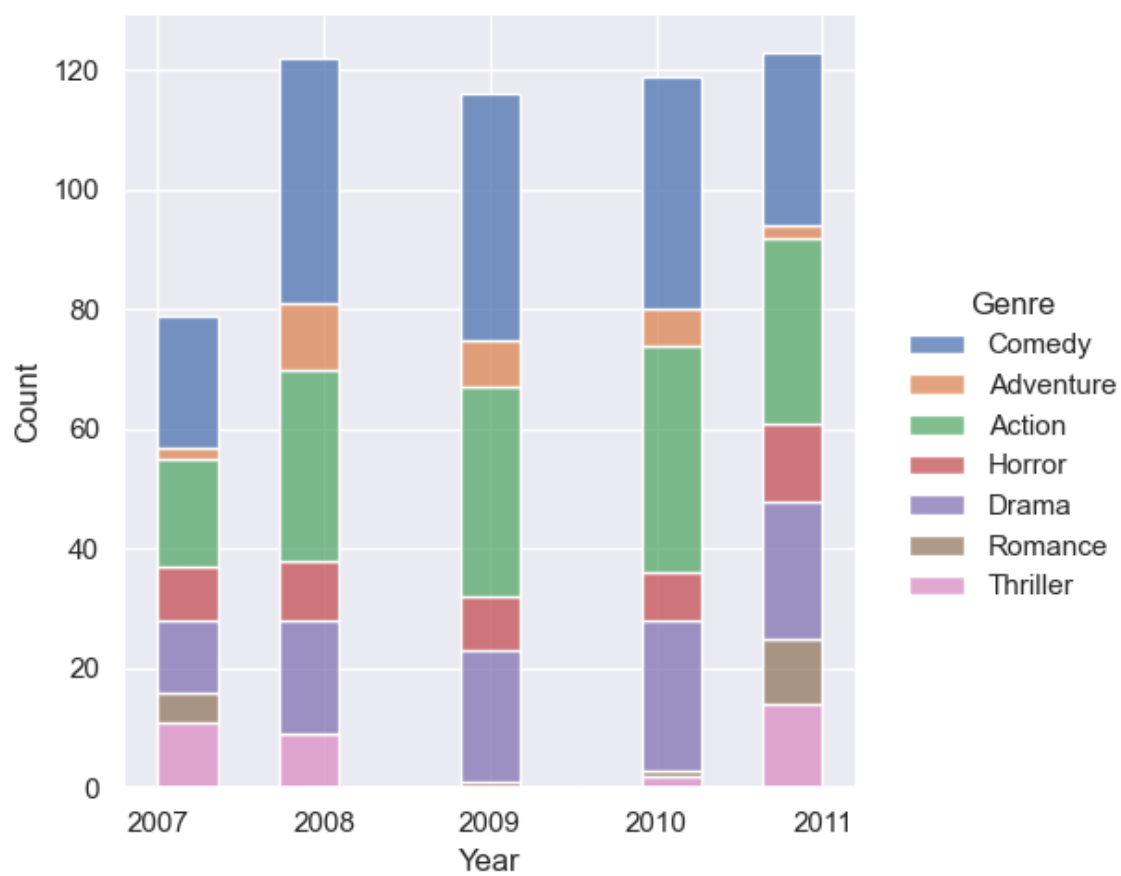


In [30]:

```
sns.displot(movies, x='Year', hue='Genre', multiple='stack')
```

Out[30]:

<seaborn.axisgrid.FacetGrid at 0x23d9ec43dd0>

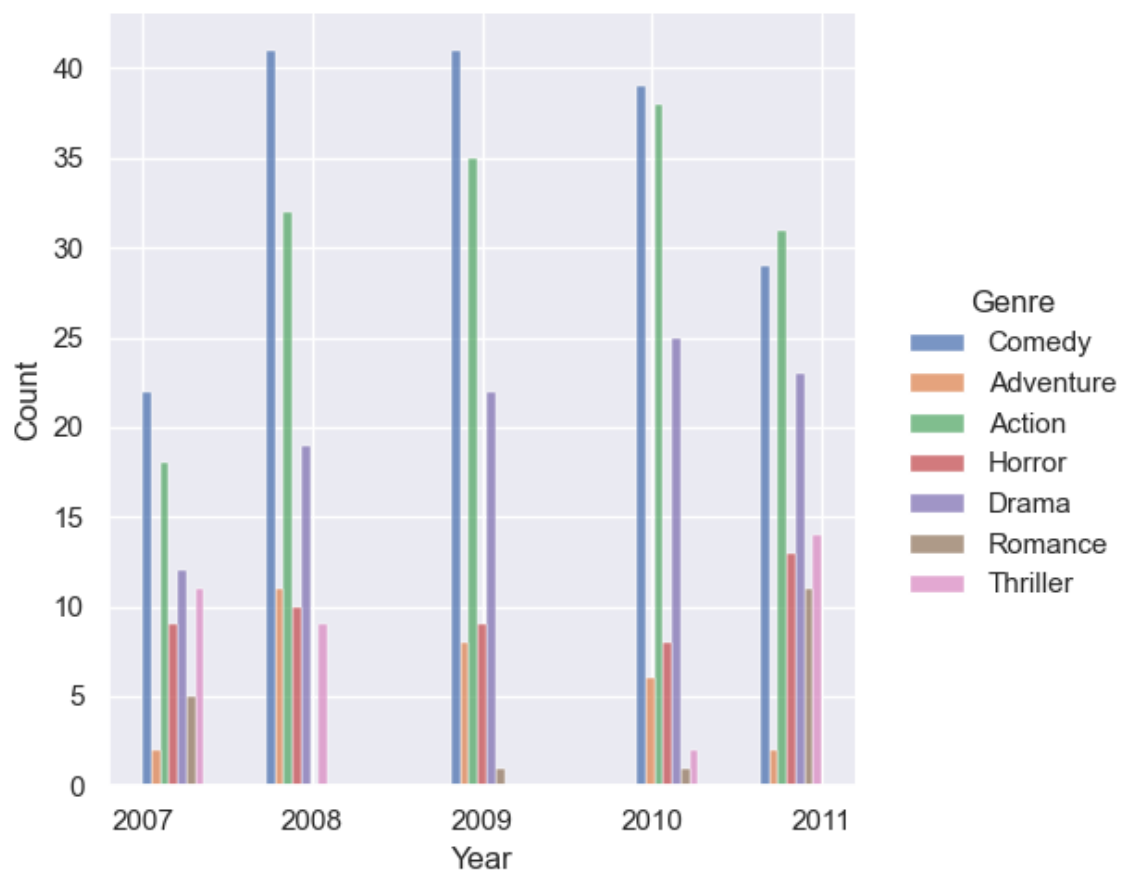


In [31]:

```
sns.displot(movies, x='Year', hue='Genre', multiple='dodge')
```

Out[31]:

<seaborn.axisgrid.FacetGrid at 0x23d9ec4d7d0>

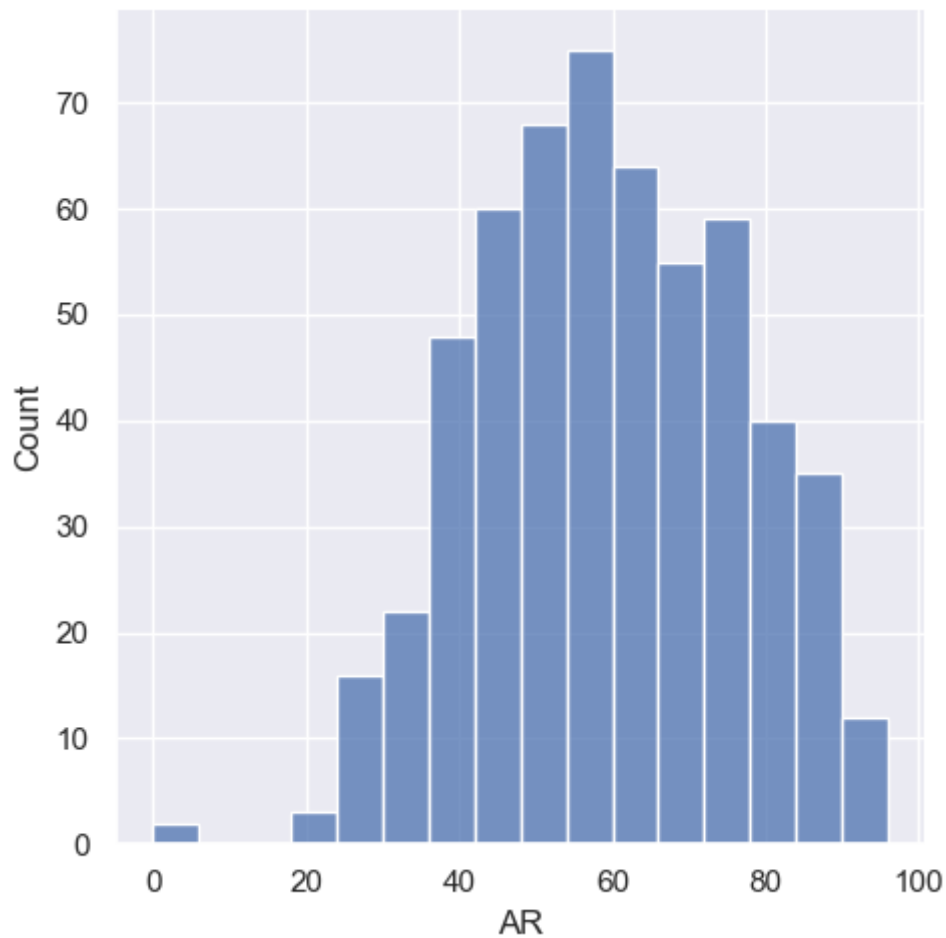


In [33]:

```
sns.displot(movies, x='AR')
```

Out[33]:

<seaborn.axisgrid.FacetGrid at 0x23d9f39c450>

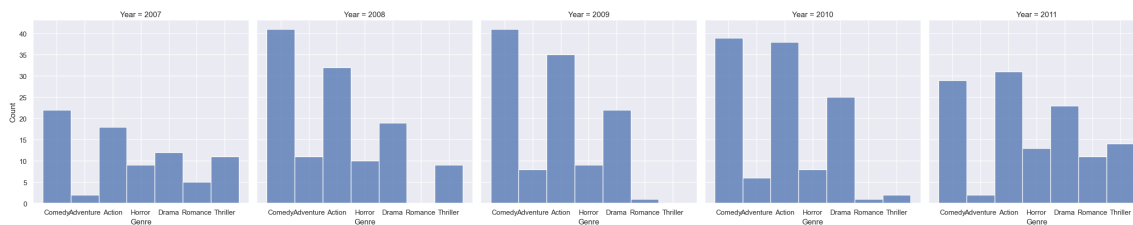


In [34]:

```
sns.displot(movies, x='Genre', col='Year')
```

Out[34]:

<seaborn.axisgrid.FacetGrid at 0x23da0a45bd0>

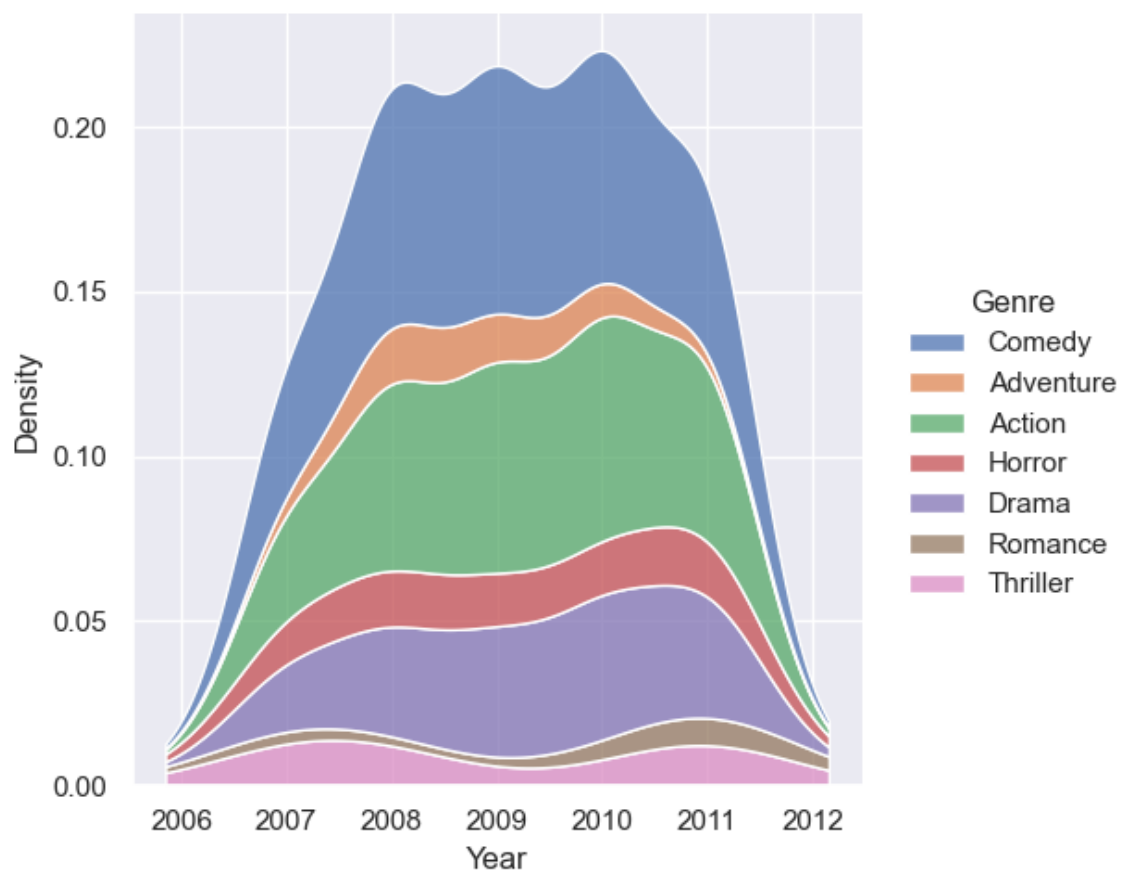


In [43]:

```
sns.displot(movies, x='Year', hue='Genre', multiple='stack', kind='kde')
```

Out[43]:

<seaborn.axisgrid.FacetGrid at 0x23da2d40550>

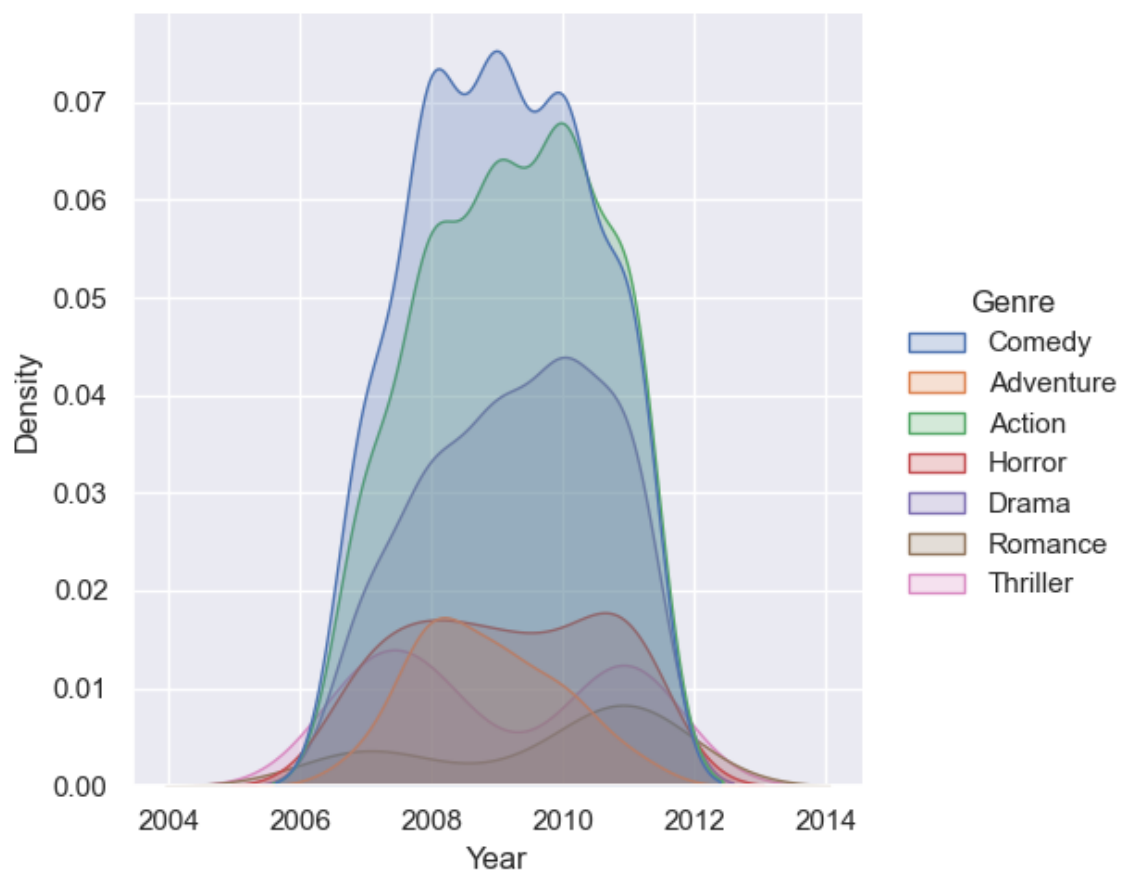


In [44]:

```
sns.displot(movies, x='Year', hue='Genre', fill=True, kind='kde')
```

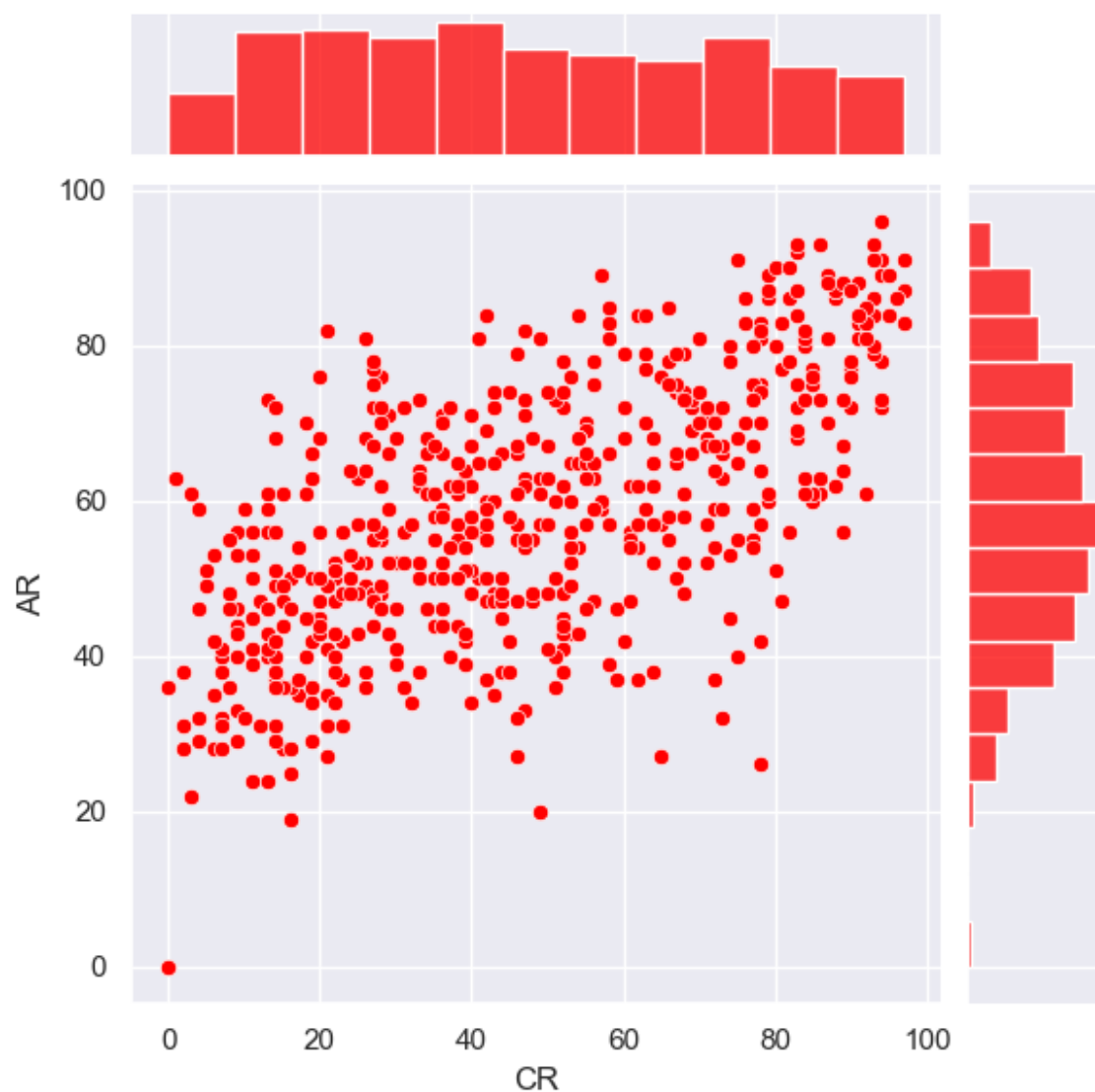
Out[44]:

<seaborn.axisgrid.FacetGrid at 0x23da1c57fd0>



In [35]:

```
# joint plot for CriticsRatings Vs AudienceRatings  
j = sns.jointplot(data=movies, x='CR',y='AR',color='Red')
```

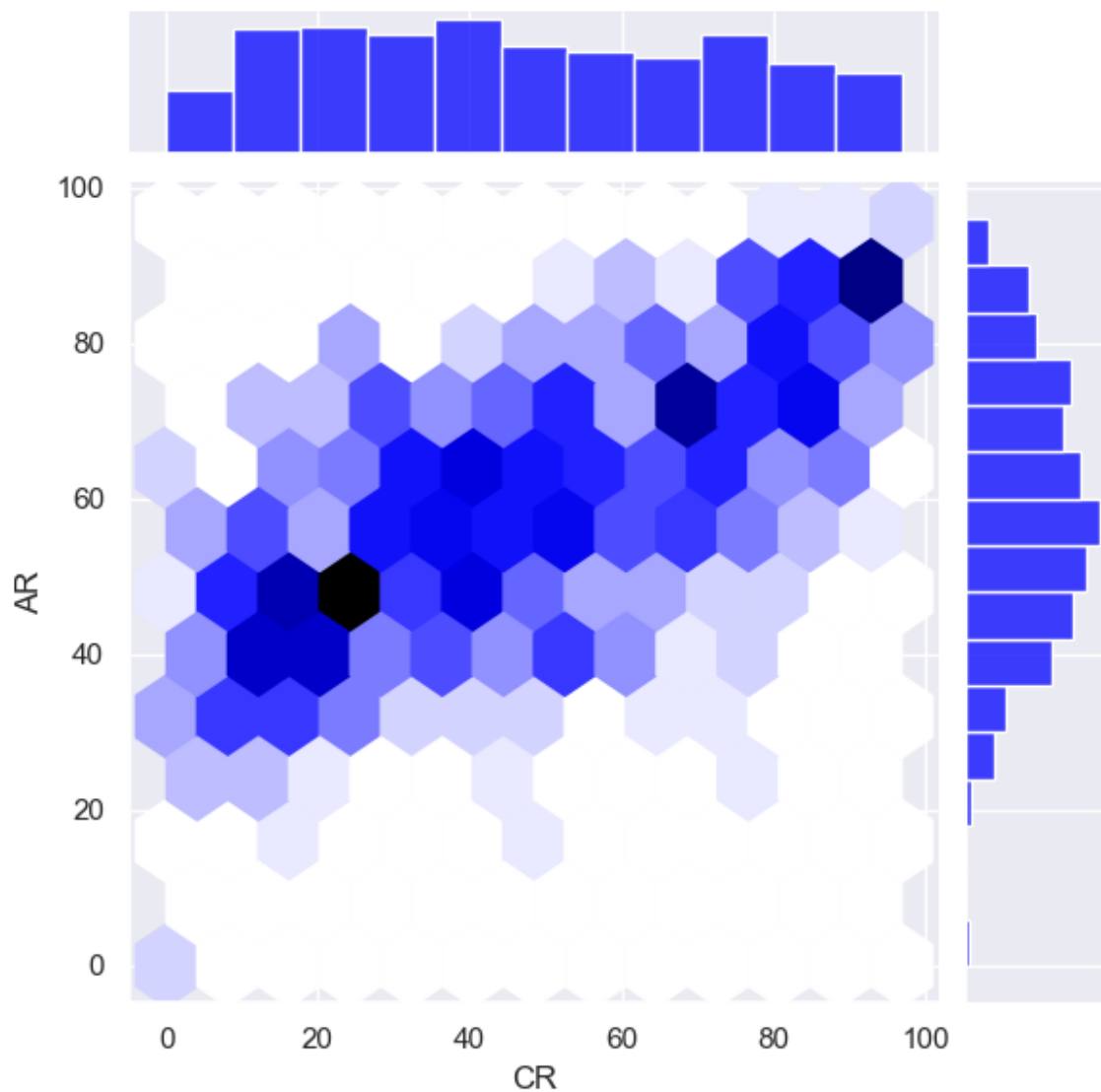


In [40]:

```
sns.jointplot(data=movies, x='CR',y='AR',color='blue',kind="hex")
```

Out[40]:

<seaborn.axisgrid.JointGrid at 0x23da2794e10>

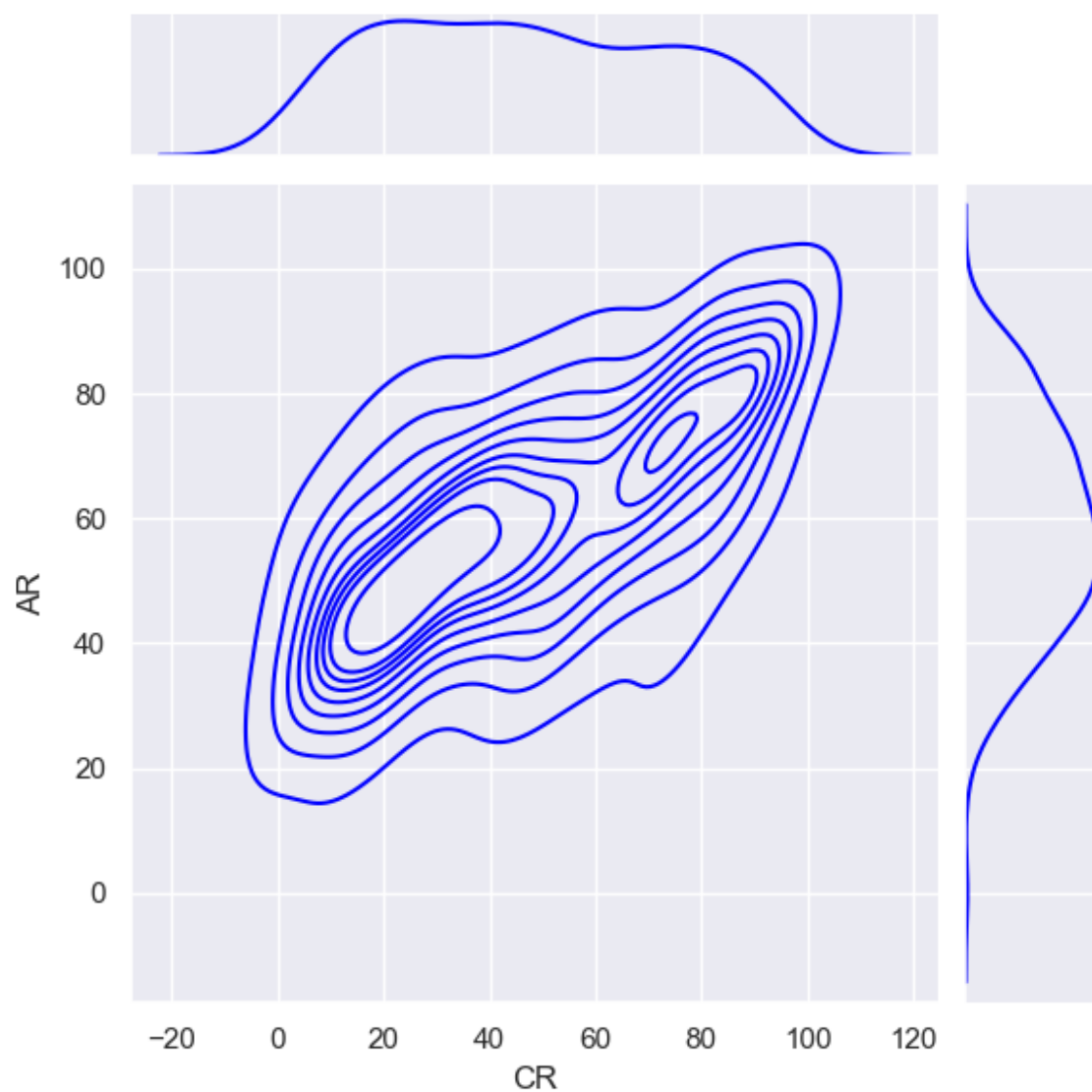


In [42]:

```
sns.jointplot(data=movies, x='CR',y='AR',color='Blue',kind="kde")
```

Out[42]:

<seaborn.axisgrid.JointGrid at 0x23da2de59d0>

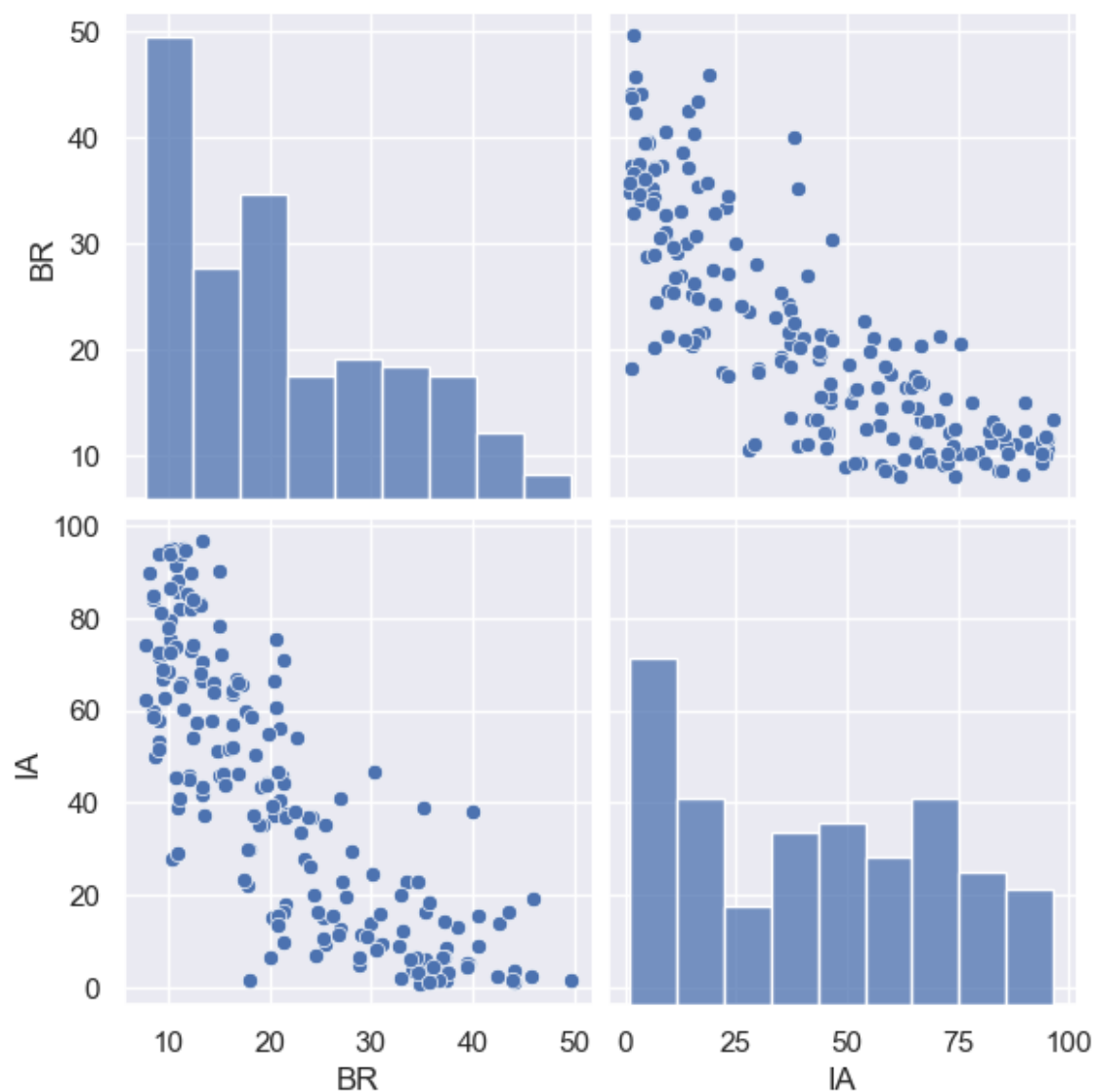


In [45]:

```
sns.pairplot(df,height=3)
```

Out[45]:

<seaborn.axisgrid.PairGrid at 0x23da3411110>



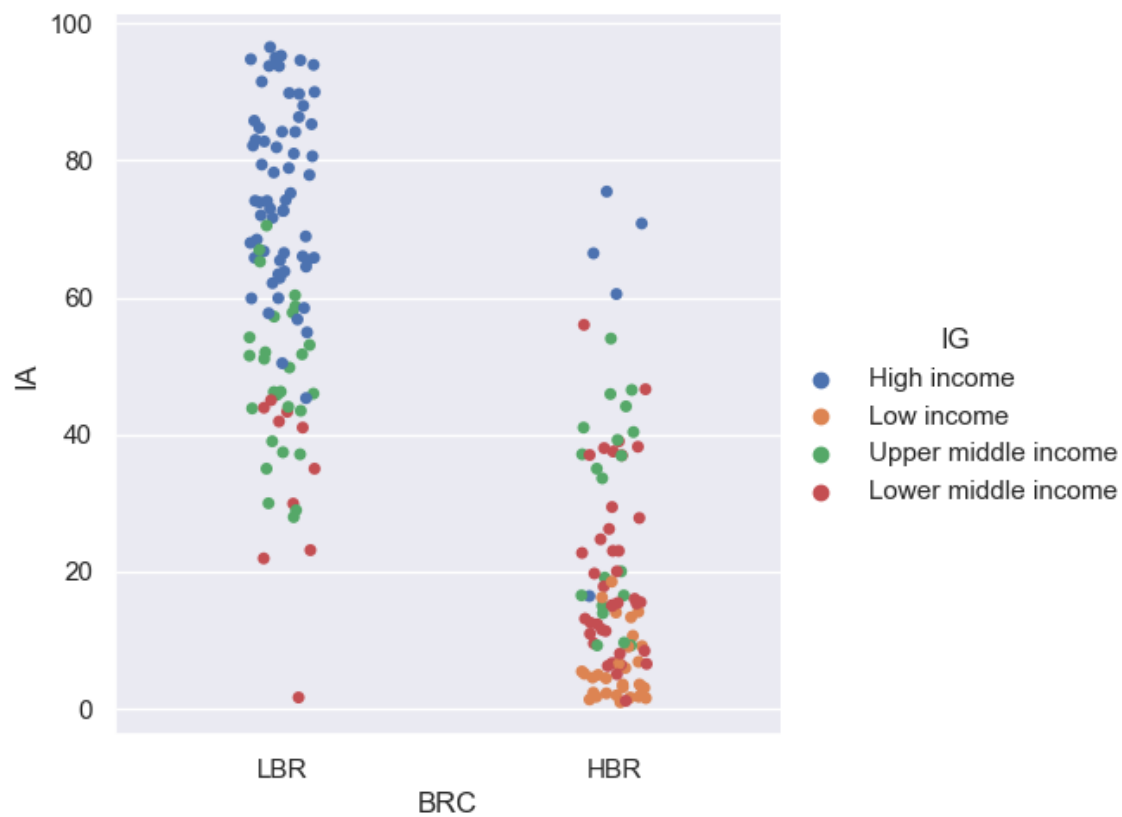
In [52]:

```
#Categorical Plots - strip plot / swarm / box / violin
```

```
sns.catplot(data=df, x="BRC", y="IA", kind="strip", hue="IG")
```

Out[52]:

<seaborn.axisgrid.FacetGrid at 0x23da5d7ad90>

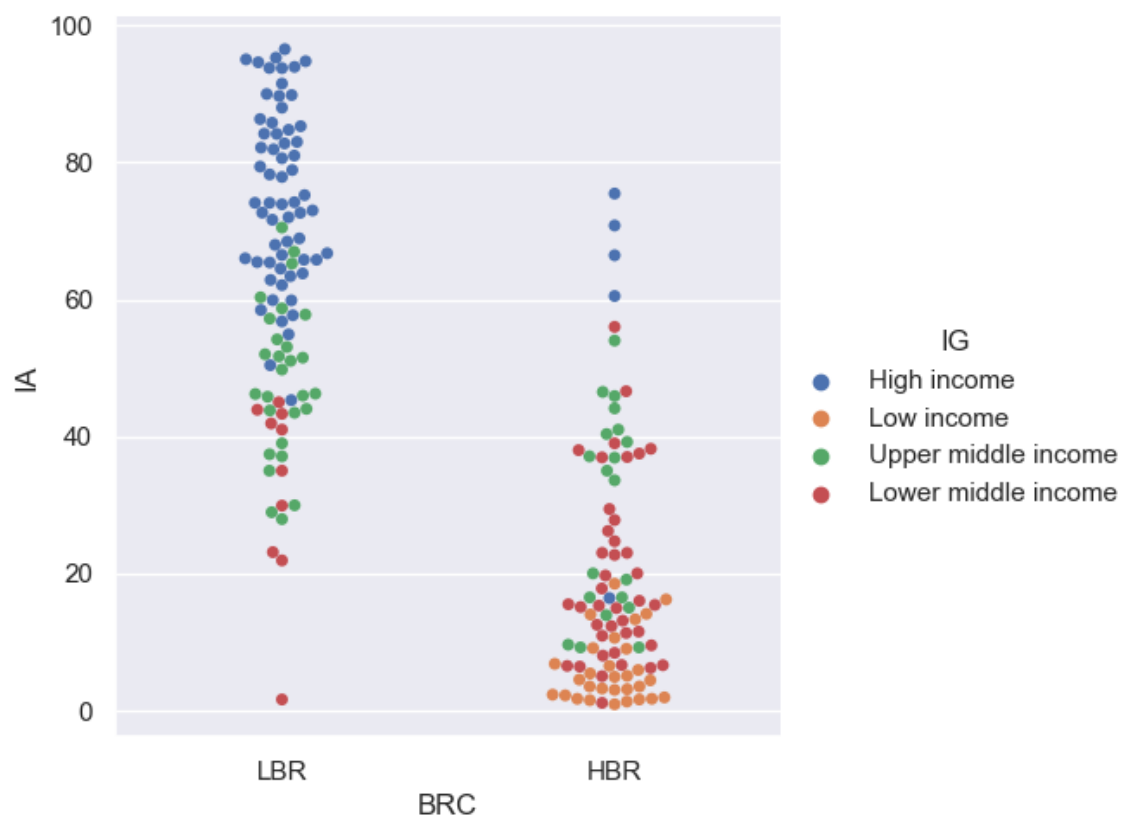


In [54]:

```
sns.catplot(data=df, x="BRC", y="IA", kind="swarm", hue="IG")
```

Out[54]:

<seaborn.axisgrid.FacetGrid at 0x23da5f4cf10>

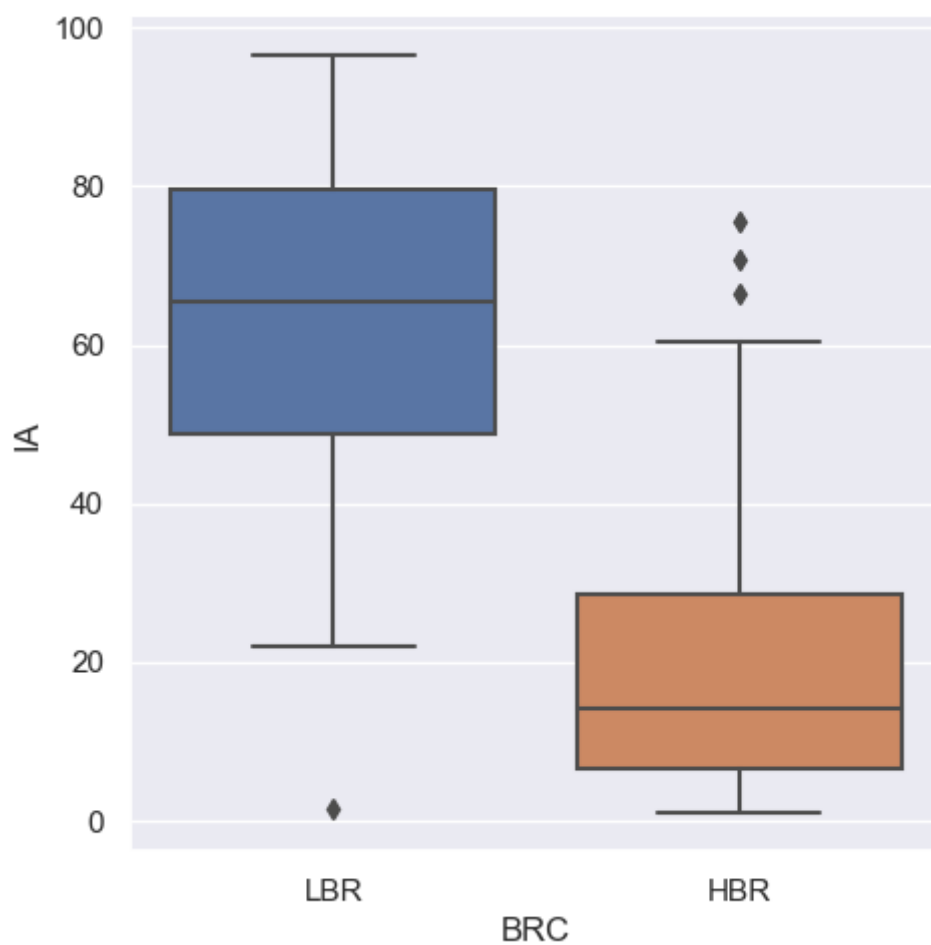


In [56]:

```
sns.catplot(data=df, x="BRC", y="IA", kind="box")
```

Out[56]:

<seaborn.axisgrid.FacetGrid at 0x23da5fdbd10>

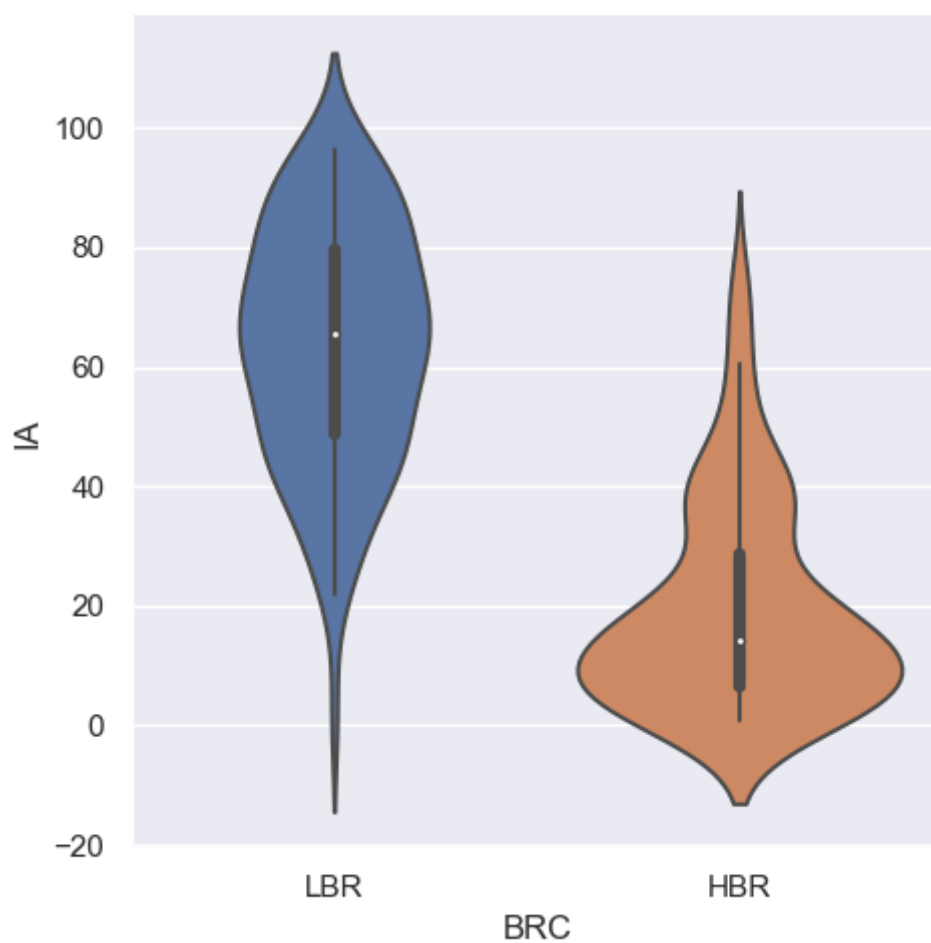


In [57]:

```
sns.catplot(data=df, x="BRC", y="IA", kind="violin")
```

Out[57]:

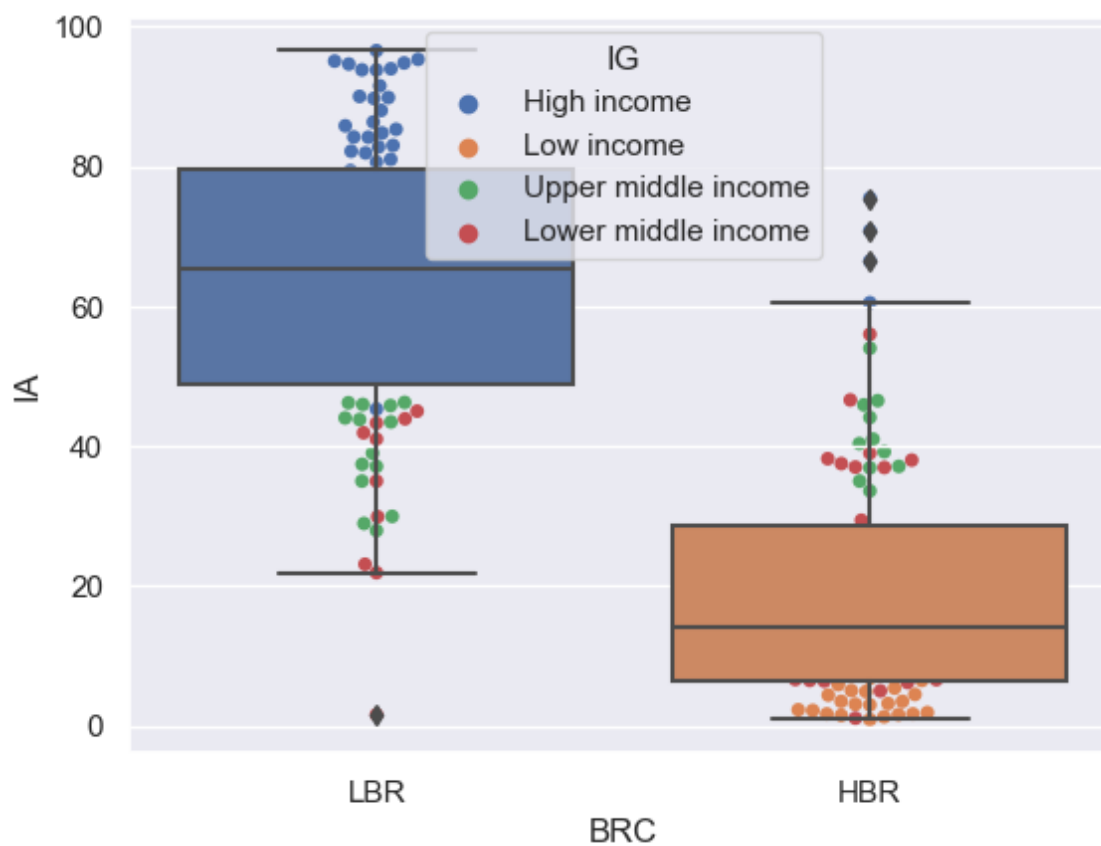
<seaborn.axisgrid.FacetGrid at 0x23da625ea10>



In [59]:

```
ax = sns.swarmplot(x="BRC", y="IA", data=df, hue="IG", zorder=0)
sns.boxplot(x="BRC", y="IA", data=df, ax=ax)

plt.show()
```



In []: