PROGRAM-11: DATA VISUALIZATION

REQUIREMENT:

With the help of suitable data and plots of your choice discuss how the data visualization can lead to misleading information.

IMPORTING LIBRARIES

In [2]:

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

ABOUT DATASET

This dataset consists of data if an advertisement will be success or not.

IMPORTING DATASET AND DISPLAYING IT

In [3]:

```
media = pd.read_csv ('Media.csv')
actual = pd.read_csv ('Actual.csv')
```

In [4]:

```
media.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 6513 entries, 0 to 6512
Data columns (total 11 columns):
id                      6513 non-null int64
realtionship_status     6513 non-null object
Industry                6513 non-null object
genre                   6513 non-null object
Targeted Sex            6513 non-null object
average_min_perweek     6513 non-null int64
Airtime                 6513 non-null object
airlocation             6513 non-null object
ratings                 6513 non-null float64
expensive               6513 non-null object
money_back_guarantee    6513 non-null object
dtypes: float64(1), int64(2), object(8)
memory usage: 559.8+ KB
```

In [5]:

```
actual.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 26048 entries, 0 to 26047
Data columns (total 12 columns):
id                      26048 non-null int64
realtionship_status     26048 non-null object
industry                26048 non-null object
genre                   26048 non-null object
Targeted Sex            26048 non-null object
average_min_perweek     26048 non-null int64
Airtime                 26048 non-null object
airlocation             26048 non-null object
ratings                 26048 non-null float64
expensive               26048 non-null object
money_back_guarantee    26048 non-null object
netgain                 26048 non-null bool
dtypes: bool(1), float64(1), int64(2), object(8)
memory usage: 2.2+ MB
```

In [6]:

```
media=media.drop(['money_back_guarantee'],axis = 1)
media.head(7)
```

Out[6]:

	id	realtionship_status	Industry	genre	Targeted Sex	average_min_perweek	Airtime
0	1	Widowed	Auto	Comedy	Male	10	Daytime
1	4	Married-civ-spouse	Pharma	Comedy	Female	40	Morning
2	5	Divorced	Entertainment	Comedy	Male	50	Morning
3	9	Married-civ-spouse	Pharma	Infomercial	Female	40	Primetime
4	10	Married-civ-spouse	Pharma	Comedy	Female	40	Primetime
5	20	Never-married	Entertainment	Comedy	Male	40	Primetime
6	28	Divorced	Auto	Comedy	Female	40	Primetime

In [7]:

```
actual=actual.drop(['money_back_guarantee','netgain'],axis = 1)
actual.head(7)
```

Out[7]:

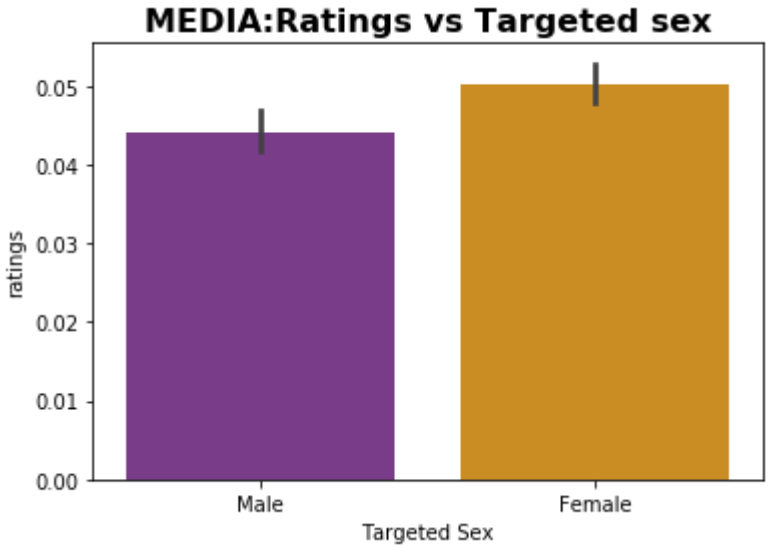
	id	realtionship_status	industry	genre	Targeted Sex	average_min_perweek	Airtin
0	19717	Married-spouse-absent	Auto	Comedy	Male	45	Primetir
1	31593	Married-civ-spouse	Pharma	Comedy	Male	45	Primetir
2	5681	Divorced	Entertainment	Comedy	Female	45	Primetir
3	15491	Separated	Political	Infomercial	Female	40	Primetir
4	23587	Married-civ-spouse	Pharma	Comedy	Male	48	Primetir
5	28523	Divorced	Auto	Comedy	Female	40	Primetir
6	12290	Married-civ-spouse	Pharma	Infomercial	Male	50	Morni

VISUALIZATION

1. RATINGS VS TARGET SEX

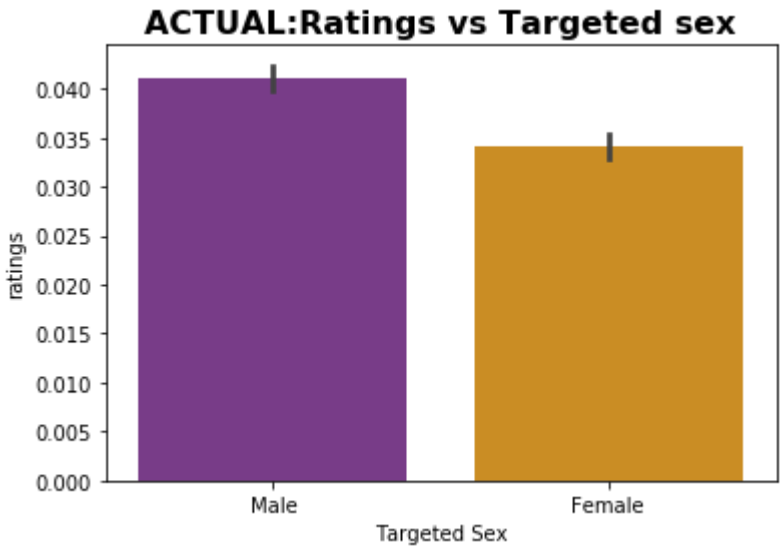
In [8]:

```
ax = sns.barplot(x="Targeted Sex", y="ratings", palette="CMRmap",data=media).set_title('MED
```



In [9]:

```
ax = sns.barplot(x="Targeted Sex", y="ratings", palette="CMRmap",data=actual).set_title('AC
```



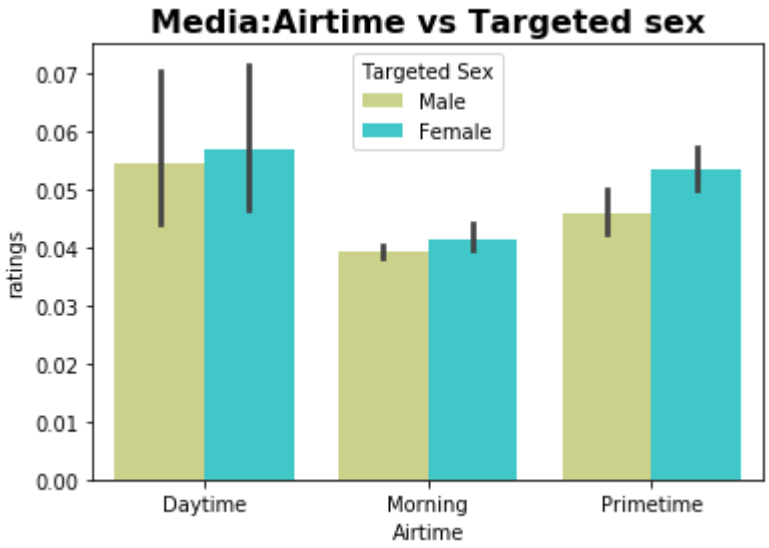
INFERENCE:

Compairing Media and Actual Dataset its clear that media has maniplucated the dataset. In Actual, the target sex is Male but when we compare with Media its clear that target sex is female.

2. RATINGS vs AIRTIME

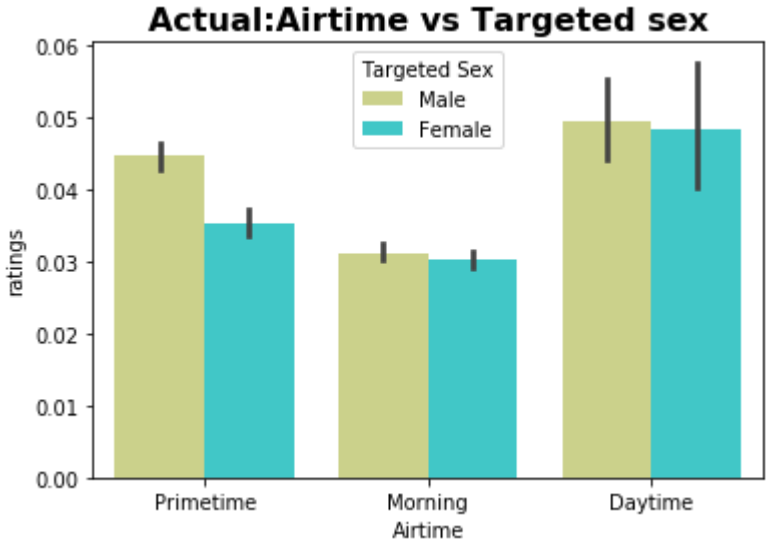
In [10]:

```
ax = sns.barplot(x="Airtime", y="ratings", hue="Targeted Sex",palette="rainbow_r", data=med
```



In [11]:

```
ax = sns.barplot(x="Airtime", y="ratings", hue="Targeted Sex", palette="rainbow_r",data=act
```



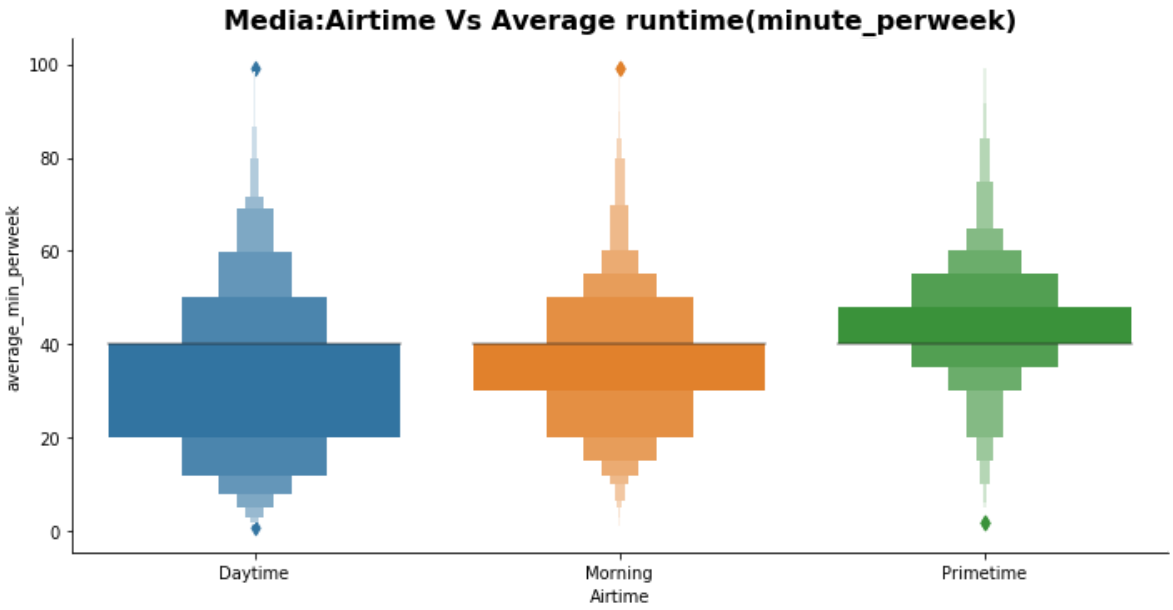
INFERENCE:

Compairing Media and Actual Dataset its clear that media has maniplucated the dataset. In Actual, the target sex and airtime anlysis is direct opposite from Media.

3. AIRTIME VS AVERAGE RUNTIME(minute_perweek)

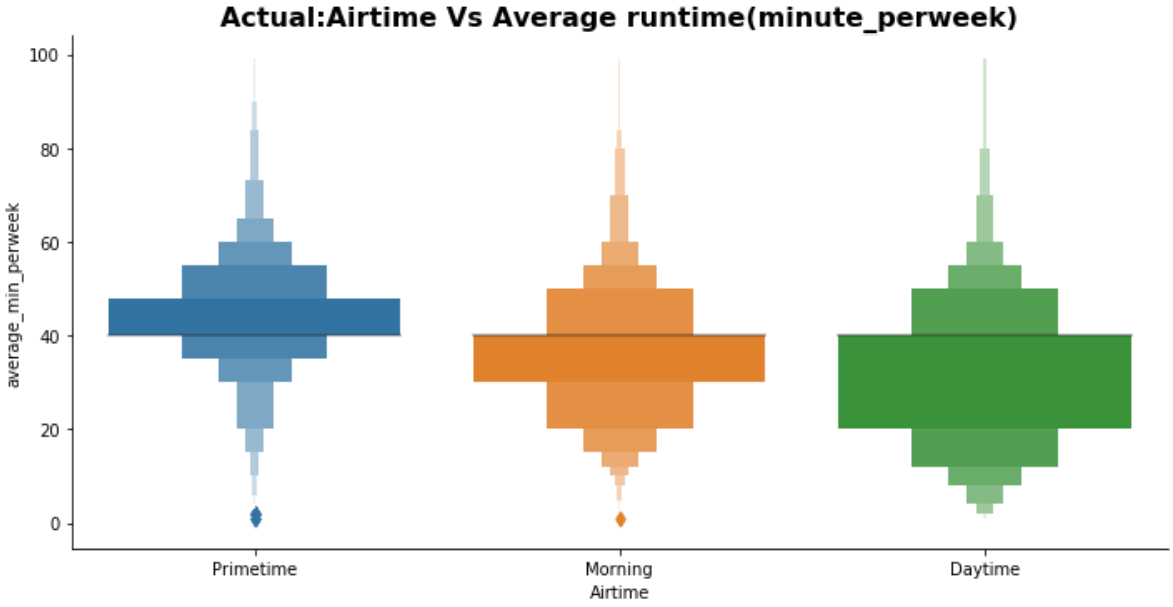
In [12]:

```
sns.catplot(x='Airtime', y='average_min_perweek', data=media, kind='boxen', aspect=2)
plt.title('Media:Airtime Vs Average runtime(minute_perweek)', weight='bold', fontsize=16)
plt.show()
```



In [13]:

```
sns.catplot(x='Airtime', y='average_min_perweek', data=actual, kind='boxen', aspect=2)
plt.title('Actual:Airtime Vs Average runtime(minute_perweek)', weight='bold', fontsize=16)
plt.show()
```



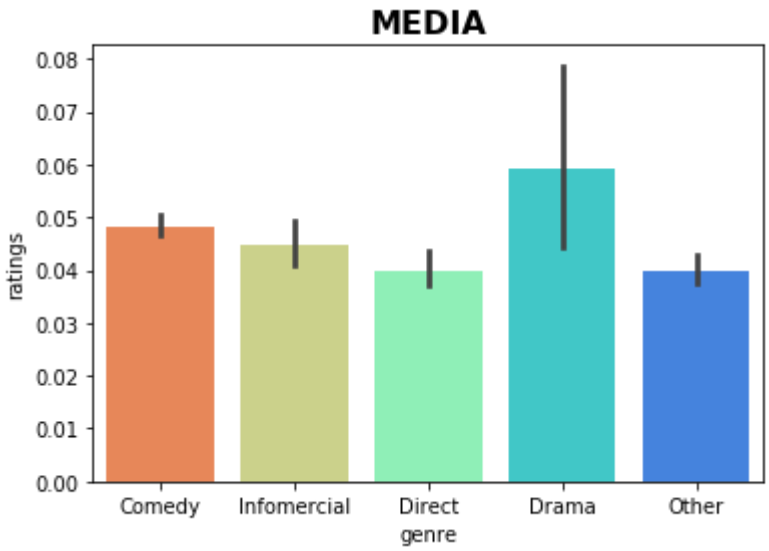
INFERENCE:

Compairing Media and Actual Dataset there is no manipulcation done.

4. GENRE VS RATINGS

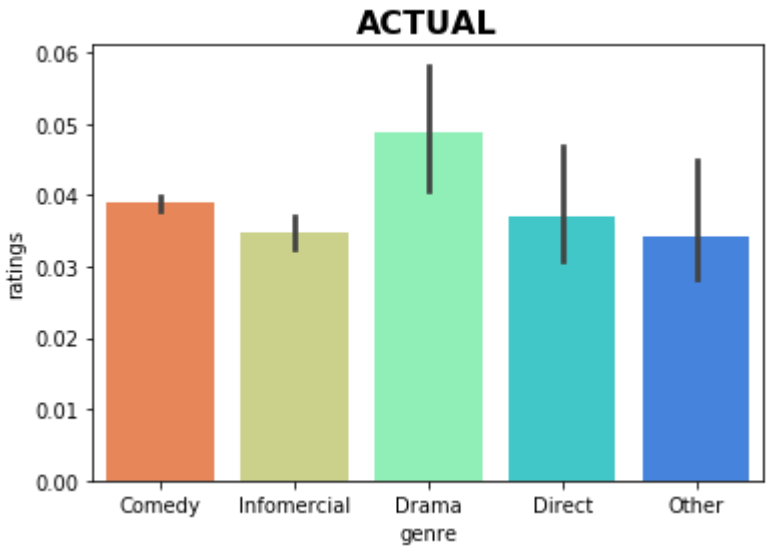
In [14]:

```
ax = sns.barplot(x="genre", y="ratings", data=media,
                 palette="rainbow_r").set_title('MEDIA', weight='bold', fontsize=16)
```



In [15]:

```
ax = sns.barplot(x="genre", y="ratings", data=actual,
                 palette="rainbow_r").set_title('ACTUAL', weight='bold', fontsize=16)
```



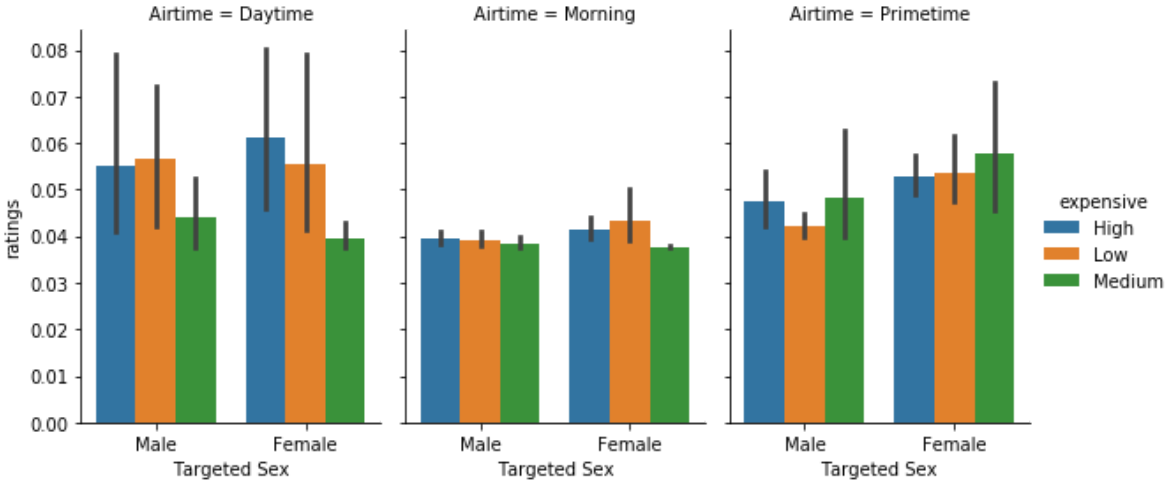
INFERENCE:

Compairing Media and Actual Dataset its clear that media has maniplucated the dataset. The visualization shows slight diffence in genre between Actual and Media.

5. TARGETED SEX VS EXPENSE

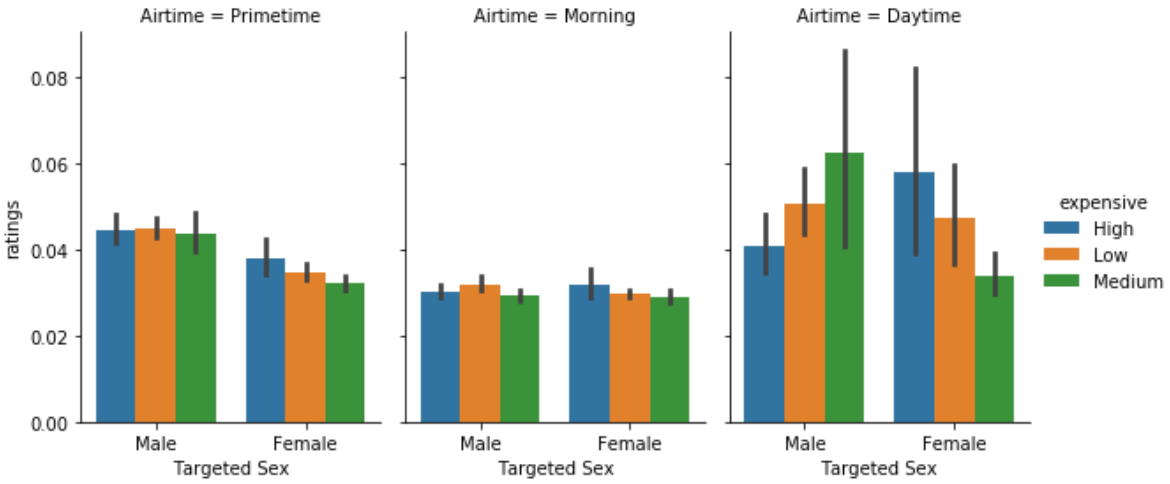
In [16]:

```
# Media
g=sns.catplot(x="Targeted Sex", y="ratings",
                hue="expensive", col="Airtime",
                data=media, kind="bar",
                height=4, aspect=.7);
```



In [17]:

```
# Actual
g=sns.catplot(x="Targeted Sex", y="ratings",
                hue="expensive", col="Airtime",
                data=actual, kind="bar",
                height=4, aspect=.7);
```



INFERENCE:

Compairing Media and Actual Dataset its clear that media has maniplucated the dataset. There is a drastic change in Expense vs targeted sex when compared between Actual and media.

6. TARGETED SEX VS RELATIONSHIP STATUS

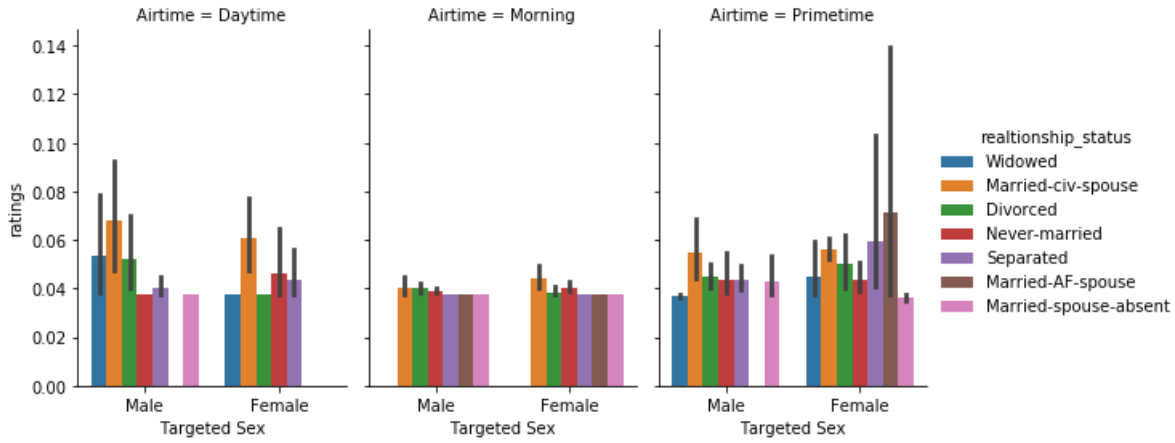
In [18]:

```
g = sns.catplot(x="Targeted Sex", y="ratings",
                hue="realtionship_status", col="Airtime",
                data=media, kind="bar",
                height=4, aspect=.7);
print("MEDIA")
g
```

```
MEDIA
```

Out[18]:

```
<seaborn.axisgrid.FacetGrid at 0x21946c43c08>
```



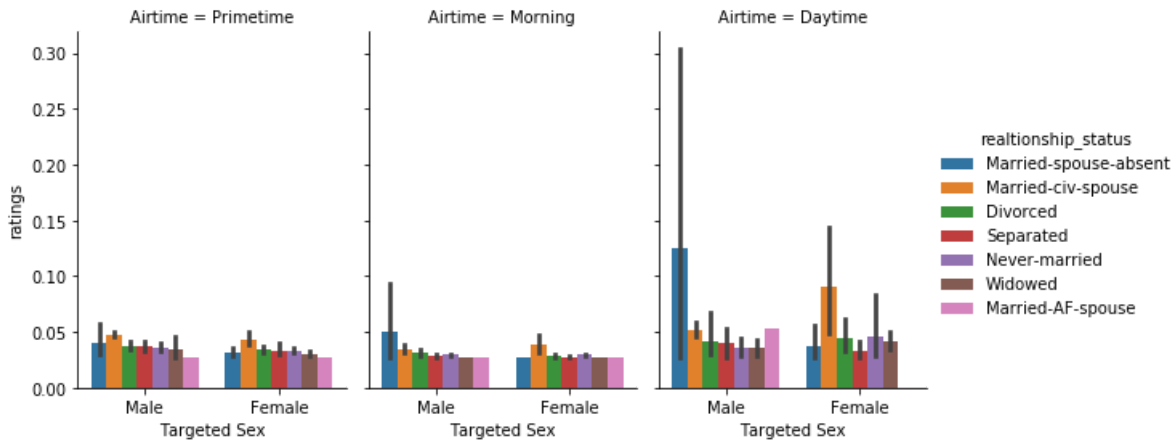
In [19]:

```
g = sns.catplot(x="Targeted Sex", y="ratings",
                hue="realtionship_status", col="Airtime",
                data=actual, kind="bar",
                height=4, aspect=.7);
print("ACTUAL")
g
```

```
ACTUAL
```

Out[19]:

```
<seaborn.axisgrid.FacetGrid at 0x21947326288>
```



INFERENCE:

Compairing Media and Actual Dataset its clear that media has maniplucated the dataset. There is a drastic change in Relationship status vs targeted sex when compared between Actual and media.