In [2]:
```
import pandas as pd
df=pd.read_csv('Titanic-Dataset.csv')
```

In [3]:
```
df.head()
```

Out[3]:

	PassengerId	Survived	Pclass	Name	Sex	Age	SibSp	Parch	Ticket	Fare	Cabin	Embarked
0	1	0	3	Braund, Mr. Owen Harris	male	22.0	1	0	A/5 21171	7.2500	NaN	S
1	2	1	1	Cumings, Mrs. John Bradley (Florence Briggs Th...	female	38.0	1	0	PC 17599	71.2833	C85	C
2	3	1	3	Heikkinen, Miss. Laina	female	26.0	0	0	STON/O2. 3101282	7.9250	NaN	S
3	4	1	1	Futrelle, Mrs. Jacques Heath (Lily May Peel)	female	35.0	1	0	113803	53.1000	C123	S
4	5	0	3	Allen, Mr. William Henry	male	35.0	0	0	373450	8.0500	NaN	S

In [4]:
```
df.tail()
```

Out[4]:

	PassengerId	Survived	Pclass	Name	Sex	Age	SibSp	Parch	Ticket	Fare	Cabin	Embarked
886	887	0	2	Montvila, Rev. Juozas	male	27.0	0	0	211536	13.00	NaN	S
887	888	1	1	Graham, Miss. Margaret Edith	female	19.0	0	0	112053	30.00	B42	S
888	889	0	3	Johnston, Miss. Catherine Helen "Carrie"	female	NaN	1	2	W./C. 6607	23.45	NaN	S
889	890	1	1	Behr, Mr. Karl Howell	male	26.0	0	0	111369	30.00	C148	C
890	891	0	3	Dooley, Mr. Patrick	male	32.0	0	0	370376	7.75	NaN	Q

In [5]:
```
df.shape
```

Out[5]:
```
(891, 12)
```

In [6]:
```
df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 891 entries, 0 to 890
Data columns (total 12 columns):
 #   Column       Non-Null Count  Dtype  
---  ------       --------------  -----  
 0   PassengerId  891 non-null    int64  
 1   Survived     891 non-null    int64  
 2   Pclass       891 non-null    int64  
 3   Name         891 non-null    object 
 4   Sex          891 non-null    object 
 5   Age          714 non-null    float64
 6   SibSp        891 non-null    int64  
 7   Parch        891 non-null    int64  
 8   Ticket       891 non-null    object 
 9   Fare         891 non-null    float64
 10  Cabin        204 non-null    object 
 11  Embarked     889 non-null    object 
dtypes: float64(2), int64(5), object(5)
memory usage: 83.7+ KB
```

In [7]:
```
df.describe()
```

Out[7]:

	PassengerId	Survived	Pclass	Age	SibSp	Parch	Fare
count	891.000000	891.000000	891.000000	714.000000	891.000000	891.000000	891.000000
mean	446.000000	0.383838	2.308642	29.699118	0.523008	0.381594	32.204208
std	257.353842	0.486592	0.836071	14.526497	1.102743	0.806057	49.693429
min	1.000000	0.000000	1.000000	0.420000	0.000000	0.000000	0.000000
25%	223.500000	0.000000	2.000000	20.125000	0.000000	0.000000	7.910400
50%	446.000000	0.000000	3.000000	28.000000	0.000000	0.000000	14.454200
75%	668.500000	1.000000	3.000000	38.000000	1.000000	0.000000	31.000000
max	891.000000	1.000000	3.000000	80.000000	8.000000	6.000000	512.329200

In [8]:
```
df.isnull().sum()
```

Out[8]:
```
PassengerId      0
Survived         0
Pclass           0
Name             0
Sex              0
Age            177
SibSp            0
Parch            0
Ticket           0
Fare             0
Cabin          687
Embarked         2
dtype: int64
```

In [9]:
```
df['Age']=df['Age'].fillna(value=df['Age'].mean())
```

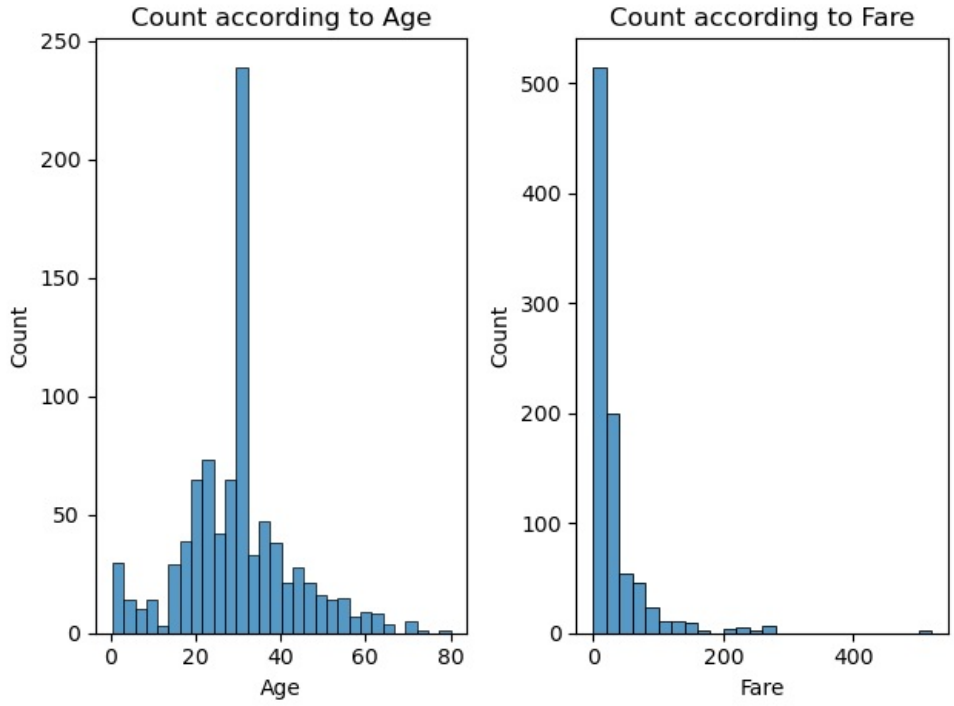
In [10]:
```
df.isnull().sum()
```

Out[10]:
```
PassengerId      0
Survived         0
Pclass           0
Name             0
Sex              0
Age              0
SibSp            0
Parch            0
Ticket           0
Fare             0
Cabin          687
Embarked         2
dtype: int64
```

In [11]:
```
import seaborn as sns
import matplotlib.pyplot as plt
```

In [37]:
```
plt.subplot(1,2,1)
plt.title("Count according to Age")
sns.histplot(data=df,x='Age')
plt.subplot(1,2,2)
plt.title("Count according to Fare")
#binwidth is used for increasing the width of bar
#bins is used to represent number of bars to have between two values
sns.histplot(data=df,x="Fare",binwidth=20,bins=10)
#for having space between the subplots
plt.tight_layout()
plt.show()
```

```
C:\Users\Ashvini Mahajan\miniconda3\Lib\site-packages\seaborn\_oldcore.py:1119: FutureWarning: use_inf_as_na option is deprecated and will be removed in a future version. Convert inf values to NaN before operating instead.
  with pd.option_context('mode.use_inf_as_na', True):
C:\Users\Ashvini Mahajan\miniconda3\Lib\site-packages\seaborn\_oldcore.py:1119: FutureWarning: use_inf_as_na option is deprecated and will be removed in a future version. Convert inf values to NaN before operating instead.
  with pd.option_context('mode.use_inf_as_na', True):
```



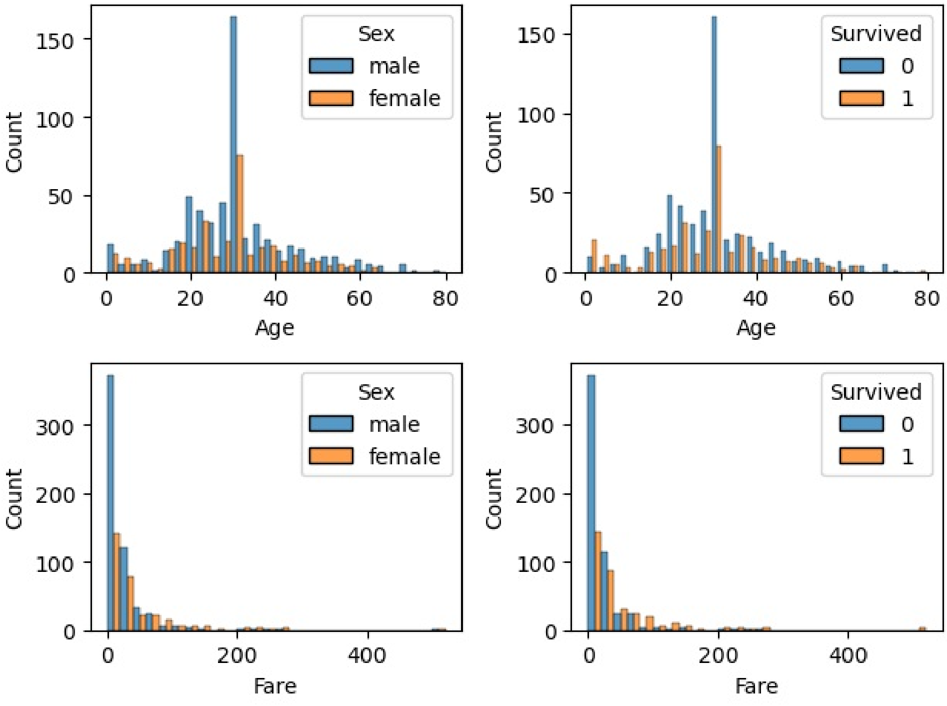
In [29]:
```
print("Conclusions from above plots are : ")
```

```
print("1) Peolple with age between 20-40 has highest count on the ship ")
print("2) Most of the people paid Fare between 0-40")
```

```
Conclusions from above plots are :
1) Peolple with age between 20-40 has highest count on the ship
2) Most of the people paid Fare between 0-50
```

In [50]:
```
plt.subplot(2,2,1)
#multiple="dodge" is use to represent the male and female side by side instead of in one stack
sns.histplot(data=df,x='Age',hue='Sex',multiple="dodge")
plt.subplot(2,2,2)
sns.histplot(data=df,x='Age',hue='Survived',multiple="dodge",shrink=.8)
plt.subplot(2,2,3)
#log scale allows you to better understand the distribution without needing to create very stretched visualizat
# sns.histplot(data=df,x='Fare',hue='Sex',multiple="dodge",shrink=.8,log_scale=2)
#Note- 1 represents survived while 0 represents died
sns.histplot(data=df,x='Fare',hue='Sex',multiple="dodge",binwidth=20,bins=10)
plt.subplot(2,2,4)
# sns.histplot(data=df,x='Fare',hue='Survived',multiple="dodge",shrink=.8,log_scale=2)
sns.histplot(data=df,x='Fare',hue='Survived',multiple="dodge",binwidth=20,bins=10)
plt.tight_layout()
plt.show()
```

```
C:\Users\Ashvini Mahajan\miniconda3\Lib\site-packages\seaborn\_oldcore.py:1119: FutureWarning: use_inf_as_na opt
ion is deprecated and will be removed in a future version. Convert inf values to NaN before operating instead.
  with pd.option_context('mode.use_inf_as_na', True):
C:\Users\Ashvini Mahajan\miniconda3\Lib\site-packages\seaborn\_oldcore.py:1119: FutureWarning: use_inf_as_na opt
ion is deprecated and will be removed in a future version. Convert inf values to NaN before operating instead.
  with pd.option_context('mode.use_inf_as_na', True):
C:\Users\Ashvini Mahajan\miniconda3\Lib\site-packages\seaborn\_oldcore.py:1119: FutureWarning: use_inf_as_na opt
ion is deprecated and will be removed in a future version. Convert inf values to NaN before operating instead.
  with pd.option_context('mode.use_inf_as_na', True):
C:\Users\Ashvini Mahajan\miniconda3\Lib\site-packages\seaborn\_oldcore.py:1119: FutureWarning: use_inf_as_na opt
ion is deprecated and will be removed in a future version. Convert inf values to NaN before operating instead.
  with pd.option_context('mode.use_inf_as_na', True):
```



In [32]:
```
print('Conclusions from the above plots are : ')
print("1) Males and Females from age group 20-40 has the highest count on the ship. But comparatively Males are
print("2) Survival rate is less in every age group")
print("3) The count of males who paid fare between 0-150 are more compare to females")
print("4) THe Survival rates is less of people who paid more fare than the people who paid fare between 0-10")
```

```
Conclusions from the above plots are :
1) Males and Females from age group 20-40 has the highest count on the ship. But comparatively Males are more th
an Femlaes
2) Survival rate is less in every age group
3) The count of males who paid fare between 0-150 are more compare to females
4) THe Survival rates is less of people who paid more fare than the people who paid fare between 0-10
```