In [1]:
```
#IMPORTING LIBRARIES
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
import seaborn as sns
```

In [2]:
```
#READ THE DATASET('TITANIC')
sc = pd.read_csv('train.csv')
```

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

Out[3]:

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

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

Out[4]:

| | PassengerId | Survived | Pclass | Name | Sex | Age | SibSp | Parch | Ticket | Fare | Cabin | Er |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **886** | 887 | 0 | 2 | Montvila, Rev. Juozas | male | 27.0 | 0 | 0 | 211536 | 13.00 | NaN | |
| **887** | 888 | 1 | 1 | Graham, Miss. Margaret Edith | female | 19.0 | 0 | 0 | 112053 | 30.00 | B42 | |
| **888** | 889 | 0 | 3 | Johnston, Miss. Catherine Helen "Carrie" | female | NaN | 1 | 2 | W./C. 6607 | 23.45 | NaN | |

| | PassengerId | Survived | Pclass | Name | Sex | Age | SibSp | Parch | Ticket | Fare | Cabin | Er |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **889** | 890 | 1 | 1 | Behr, Mr. Karl Howell | male | 26.0 | 0 | 0 | 111369 | 30.00 | C148 | |
| **890** | 891 | 0 | 3 | Dooley, Mr. Patrick | male | 32.0 | 0 | 0 | 370376 | 7.75 | NaN | |

In [5]:
```
sc.isnull()
```

Out[5]:

| | PassengerId | Survived | Pclass | Name | Sex | Age | SibSp | Parch | Ticket | Fare | Cabin | Embark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **0** | False | False | False | False | False | False | False | False | False | False | True | Fal |
| **1** | False | False | False | False | False | False | False | False | False | False | False | Fal |
| **2** | False | False | False | False | False | False | False | False | False | False | True | Fal |
| **3** | False | False | False | False | False | False | False | False | False | False | False | Fal |
| **4** | False | False | False | False | False | False | False | False | False | False | True | Fal |
| **...** | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | |
| **886** | False | False | False | False | False | False | False | False | False | False | True | Fal |
| **887** | False | False | False | False | False | False | False | False | False | False | False | Fal |
| **888** | False | False | False | False | False | True | False | False | False | False | True | Fal |
| **889** | False | False | False | False | False | False | False | False | False | False | False | Fal |
| **890** | False | False | False | False | False | False | False | False | False | False | True | Fal |

891 rows × 12 columns

In [6]:
```
sc.shape
```

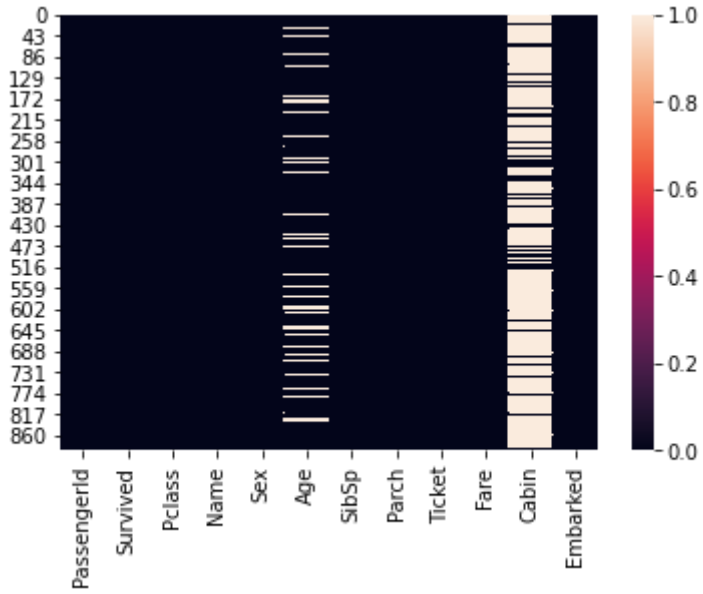
Out[6]:
```
(891, 12)
```

In [7]:
```
sc.isnull().sum()
```

Out[7]:
```
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
```

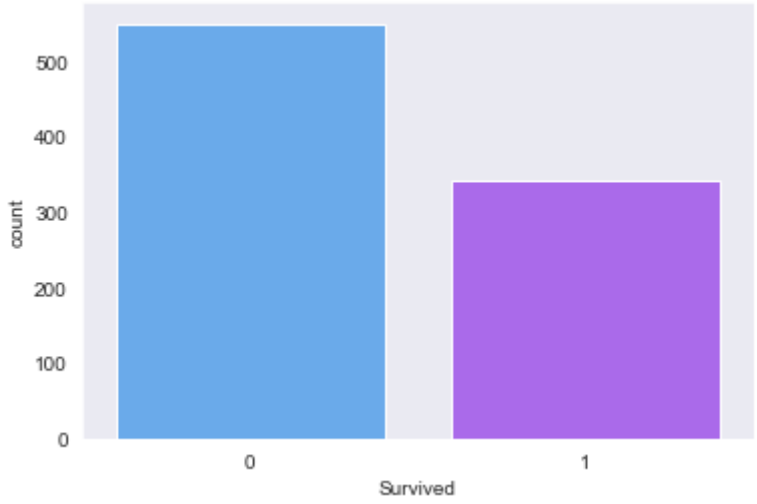
In [8]:
```
sns.heatmap(sc.isnull())
```

Out[8]: <AxesSubplot:>



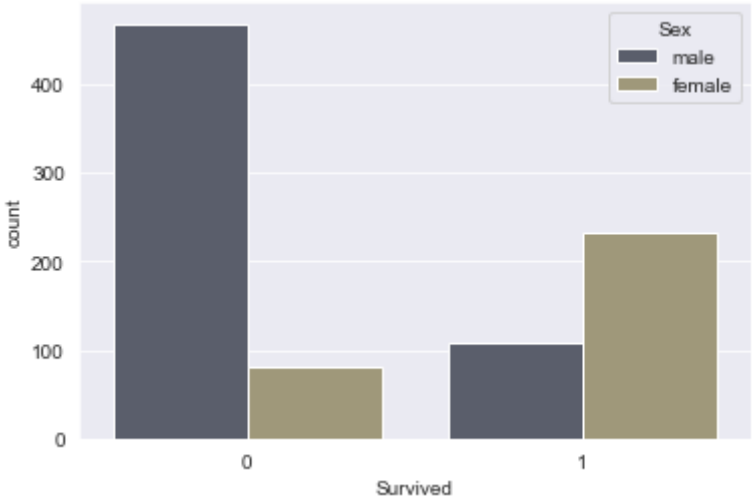

In [9]:
```
#DATA VISUALIZATION
sns.set_style('dark')
sns.countplot(x='Survived',data=sc,palette='cool')
```

Out[9]: <AxesSubplot:xlabel='Survived', ylabel='count'>




In [10]:
```
#COUNT PLOT
sns.set_style('darkgrid')
sns.countplot(x='Survived',hue='Sex',data=sc,palette='cividis')
```

Out[10]: <AxesSubplot:xlabel='Survived', ylabel='count'>



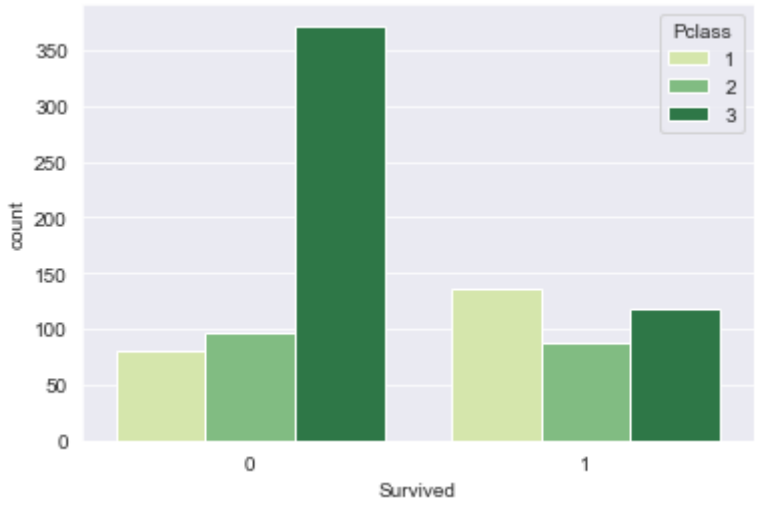

In [11]:
```
#PAIR PLOT
sns.pairplot(sc)
```

Out[11]: <seaborn.axisgrid.PairGrid at 0x24cb9480fd0>


In [12]:
```
#COUNT PLOT
sns.set_style('darkgrid')
```

```
sns.countplot(x='Survived',hue='Pclass',data=sc,palette='YlGn')
```

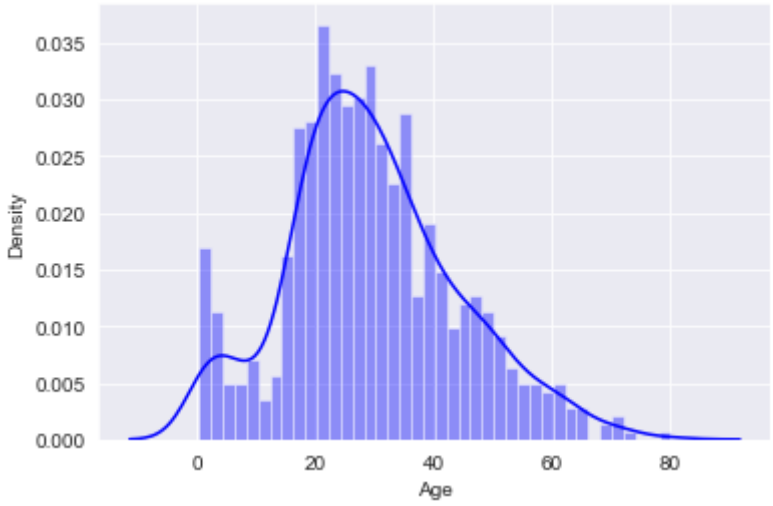
Out[12]: <AxesSubplot:xlabel='Survived', ylabel='count'>




In [13]:
```
#DIST PLOT
sns.distplot(sc['Age'].dropna(),color='blue',bins=40)
```

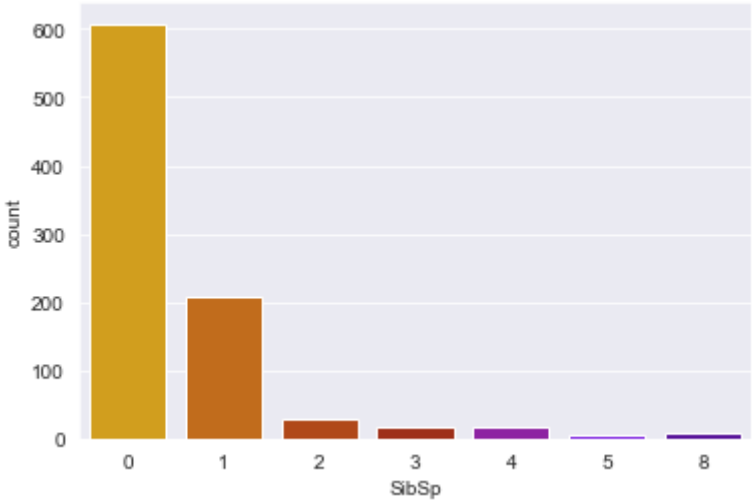
```
C:\Users\eswar\anaconda3\lib\site-packages\seaborn\distributions.py:2557: FutureWarn
ing: `distplot` is a deprecated function and will be removed in a future version. Pl
ease adapt your code to use either `displot` (a figure-level function with similar f
lexibility) or `histplot` (an axes-level function for histograms).
  warnings.warn(msg, FutureWarning)
```

Out[13]: <AxesSubplot:xlabel='Age', ylabel='Density'>



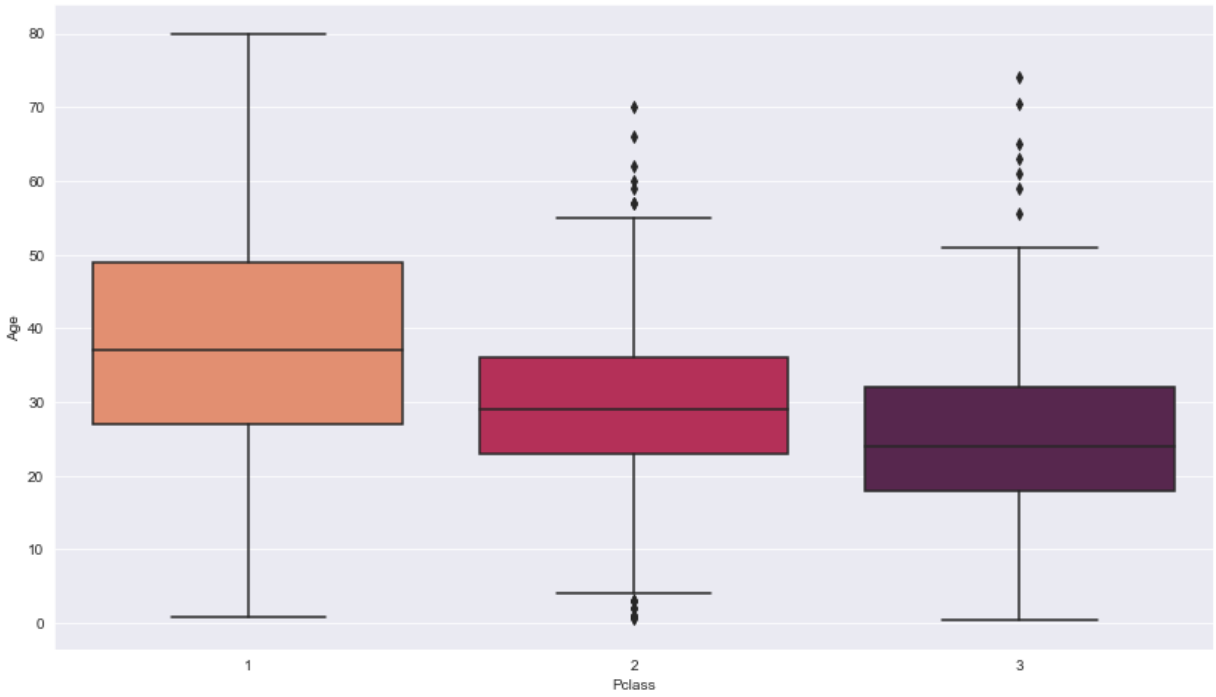

In [14]:
```
#COUNT PLOT
sns.countplot(x='SibSp',data=sc,palette='gnuplot_r')
```

Out[14]: <AxesSubplot:xlabel='SibSp', ylabel='count'>




In [15]:
```
#DATA CLEANING
#BOX PLOT
plt.figure(figsize=(14,8))
sns.boxplot(x='Pclass',y='Age',data=sc,palette='rocket_r')
```

Out[15]: <AxesSubplot:xlabel='Pclass', ylabel='Age'>




In [16]:
```
#FUNCTION
def null_age(cols):
    Age = cols[0]
    Pclass = cols[1]
    if pd.isnull(Age):
        if Pclass == 1:
            return 37
        elif Pclass == 2:
            return 29
        else:
            return 24
    else:
        return Age
```

In [17]:
```
sc.drop('Cabin',axis=1,inplace=True)
```

In [18]:
```
sc.head(88)
```

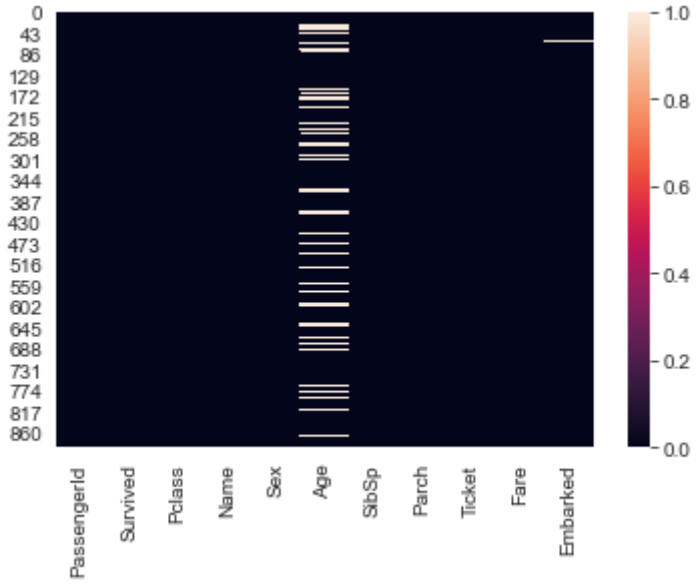
Out[18]:

| | PassengerId | Survived | Pclass | Name | Sex | Age | SibSp | Parch | Ticket | Fare | Eml |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **0** | 1 | 0 | 3 | Braund, Mr. Owen Harris | male | 22.0 | 1 | 0 | A/5 21171 | 7.2500 | |
| **1** | 2 | 1 | 1 | Cumings, Mrs. John Bradley (Florence Briggs Th... | female | 38.0 | 1 | 0 | PC 17599 | 71.2833 | |
| **2** | 3 | 1 | 3 | Heikkinen, Miss. Laina | female | 26.0 | 0 | 0 | STON/O2. 3101282 | 7.9250 | |
| **3** | 4 | 1 | 1 | Futrelle, Mrs. Jacques Heath (Lily May Peel) | female | 35.0 | 1 | 0 | 113803 | 53.1000 | |
| **4** | 5 | 0 | 3 | Allen, Mr. William Henry | male | 35.0 | 0 | 0 | 373450 | 8.0500 | |
| **...** | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| **83** | 84 | 0 | 1 | Carrau, Mr. Francisco M | male | 28.0 | 0 | 0 | 113059 | 47.1000 | |
| **84** | 85 | 1 | 2 | Ilett, Miss. Bertha | female | 17.0 | 0 | 0 | SO/C 14885 | 10.5000 | |
| **85** | 86 | 1 | 3 | Backstrom, Mrs. Karl Alfred (Maria Mathilda Gu... | female | 33.0 | 3 | 0 | 3101278 | 15.8500 | |
| **86** | 87 | 0 | 3 | Ford, Mr. William Neal | male | 16.0 | 1 | 3 | W./C. 6608 | 34.3750 | |
| **87** | 88 | 0 | 3 | Slocovski, Mr. Selman Francis | male | NaN | 0 | 0 | SOTON/OQ 392086 | 8.0500 | |

88 rows × 11 columns

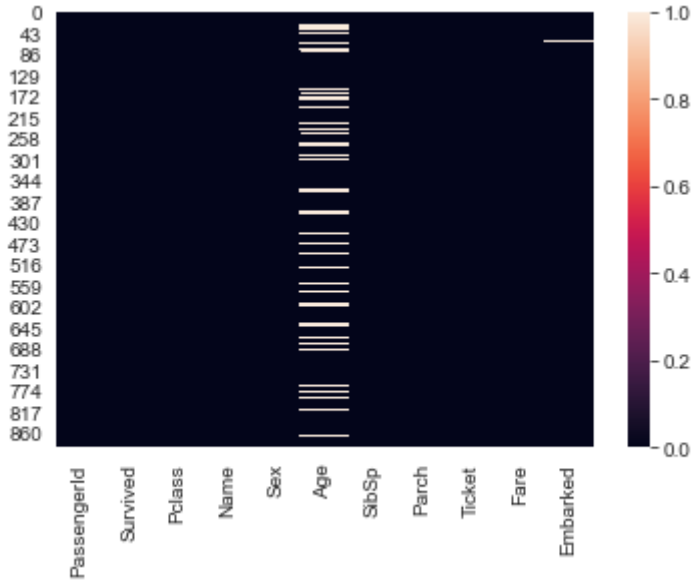
In [19]:
```
#HEAT MAP (NULL VALUES)
sns.heatmap(sc.isnull())
```

Out[19]:
```
<AxesSubplot:>
```



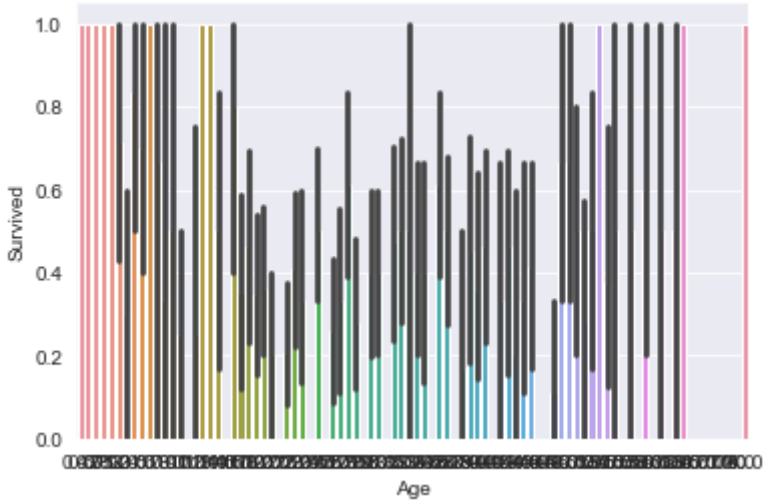

In [20]:
```
#HEAT MAP (NULL VALUES)
sns.heatmap(sc.isnull())
```

Out[20]: <AxesSubplot:>



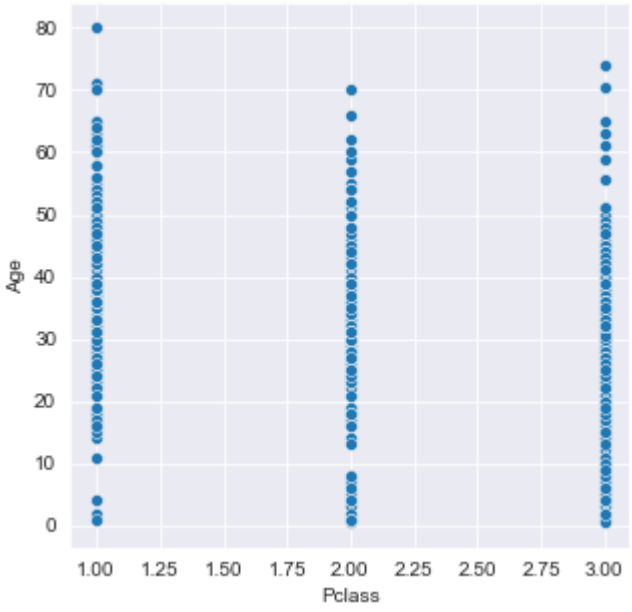

In [21]:
```
#BAR PLOT
sns.barplot(data=sc,x="Age",y="Survived")
```

Out[21]: <AxesSubplot:xlabel='Age', ylabel='Survived'>




In [22]:
```
#SCATTER PLOT
plt.figure(figsize=(5,5))
sns.scatterplot(x='Pclass',y='Age',data=sc,palette='Dark2_r')
```

Out[22]: <AxesSubplot:xlabel='Pclass', ylabel='Age'>




In [ ]: