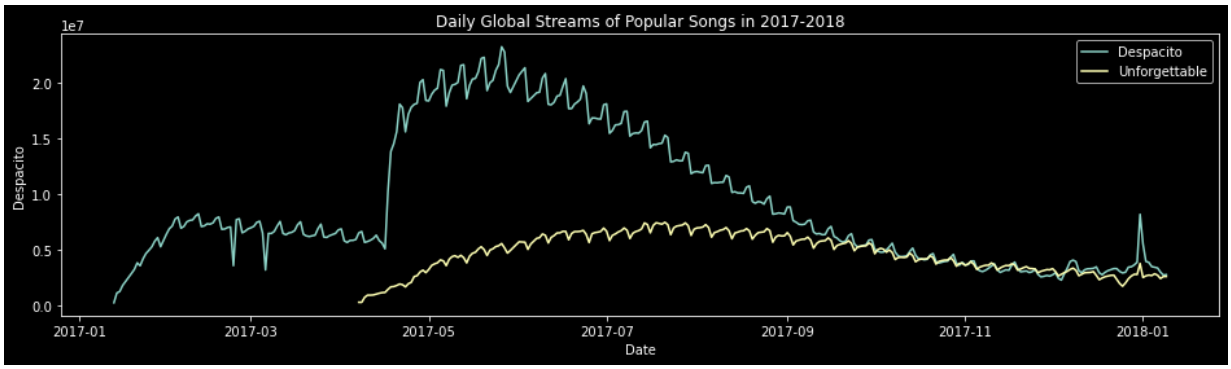
In [48]:
```
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
```

In [52]:
```
spotify_filepath = "./input/spotify.csv"
spotify_data = pd.read_csv(spotify_filepath, index_col="Date", parse_dates=True) #par
```

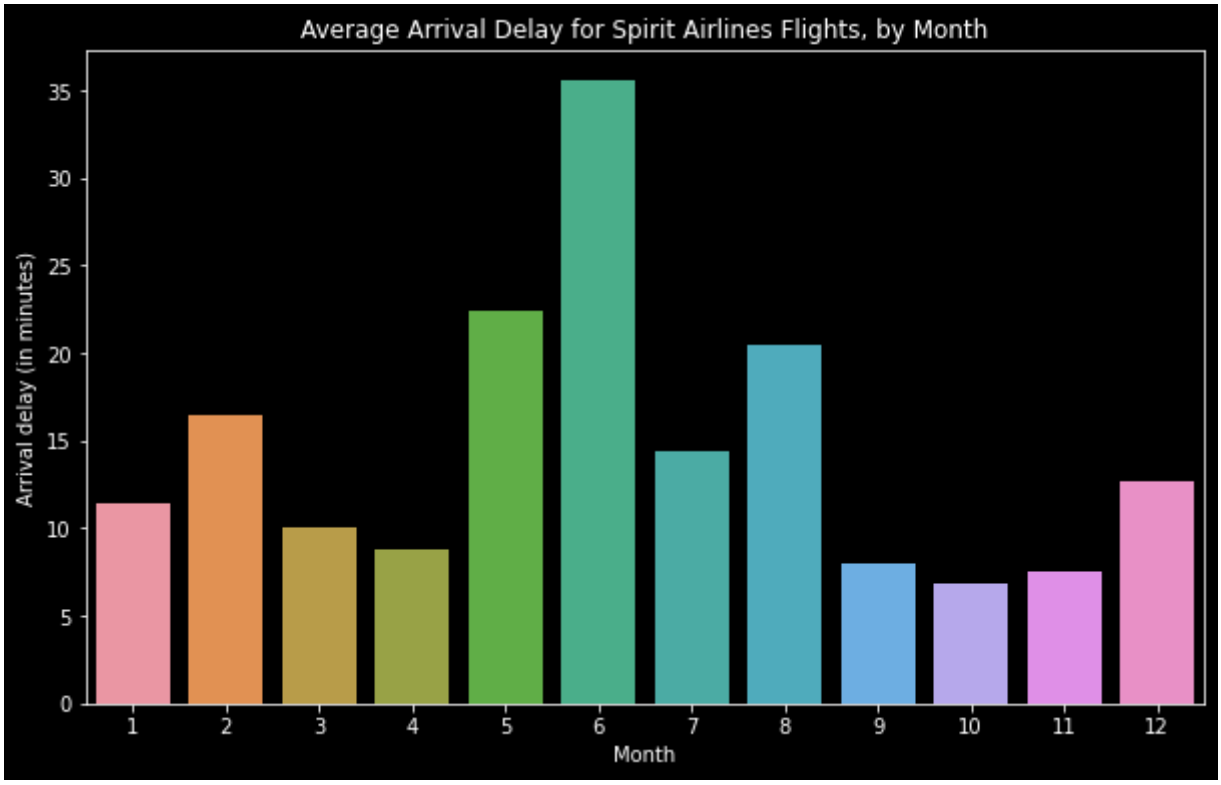
In [58]:
```
plt.figure(figsize=(16,4))
plt.title("Daily Global Streams of Popular Songs in 2017-2018")
sns.lineplot(data=spotify_data["Despacito"], label="Despacito")
sns.lineplot(data=spotify_data["Unforgettable"], label="Unforgettable")
plt.xlabel("Date");
```



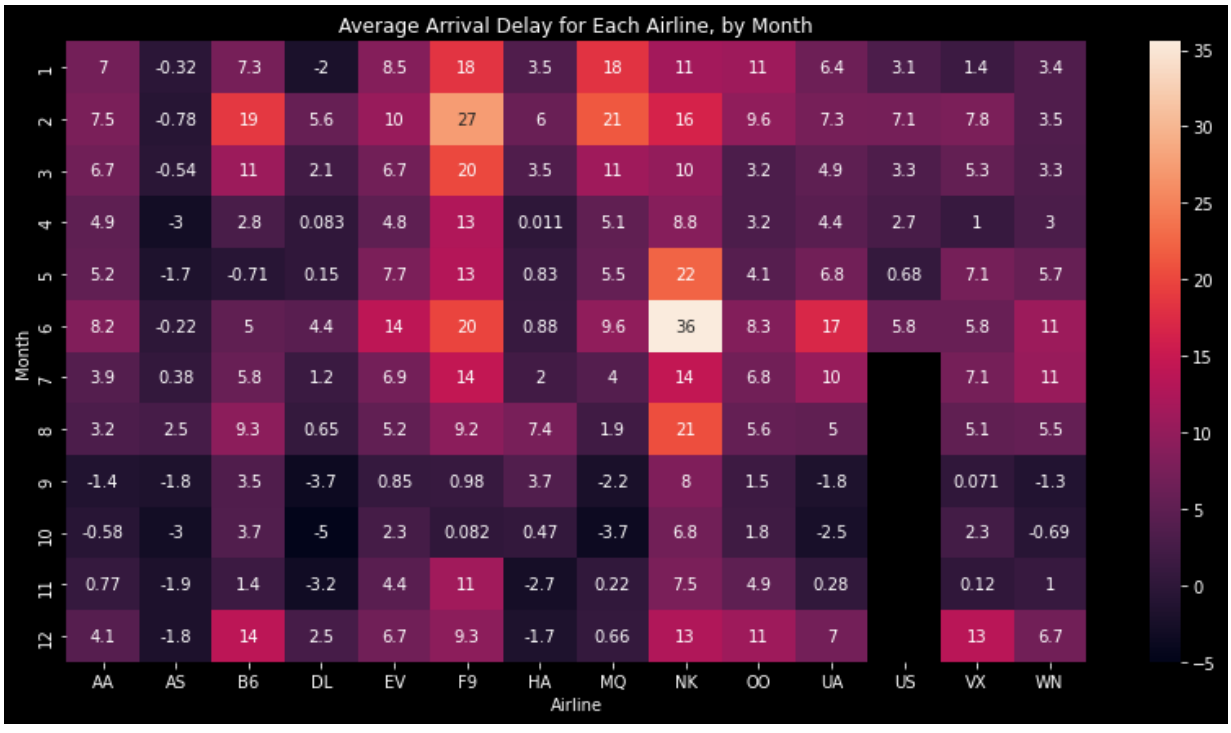
In [59]:
```
# Path of the file to read
flight_filepath = "./input/flight_delays.csv"

# Read the file into a variable flight_data
flight_data = pd.read_csv(flight_filepath, index_col="Month") #index_col은 어떤 열을
```

In [61]:
```
# Set the width and height of the figure
plt.figure(figsize=(10,6))

# Add title
plt.title("Average Arrival Delay for Spirit Airlines Flights, by Month")

# Bar chart showing average arrival delay for Spirit Airlines flights by month
sns.barplot(x=flight_data.index, y=flight_data['NK'])

# Add label for vertical axis
plt.ylabel("Arrival delay (in minutes)")
```

Out[61]:
```
Text(0, 0.5, 'Arrival delay (in minutes)')
```



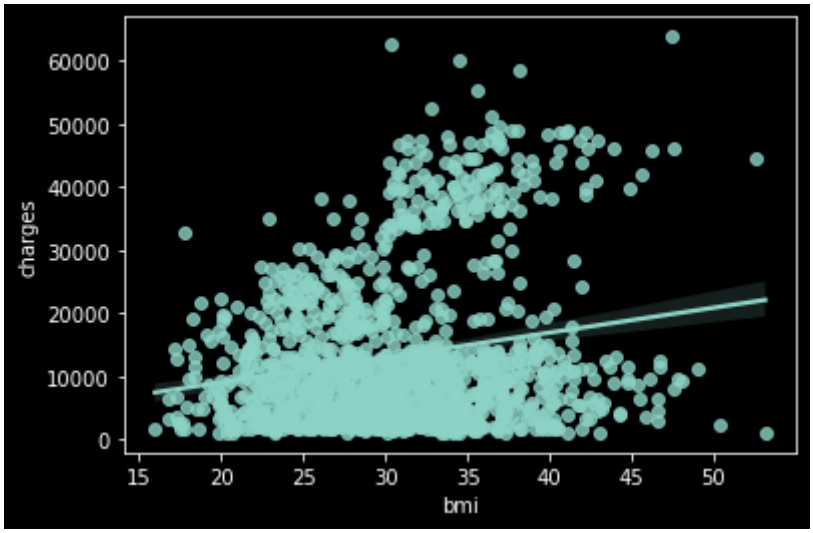
In [62]:
```
plt.figure(figsize=(14,7))
plt.title("Average Arrival Delay for Each Airline, by Month")
sns.heatmap(data=flight_data, annot=True) #annot를 넣으면 숫자가 나옴
plt.xlabel("Airline");
```



In [63]:
```
# Path of the file to read
insurance_filepath = "./input/insurance.csv"

# Read the file into a variable insurance_data
insurance_data = pd.read_csv(insurance_filepath)
```

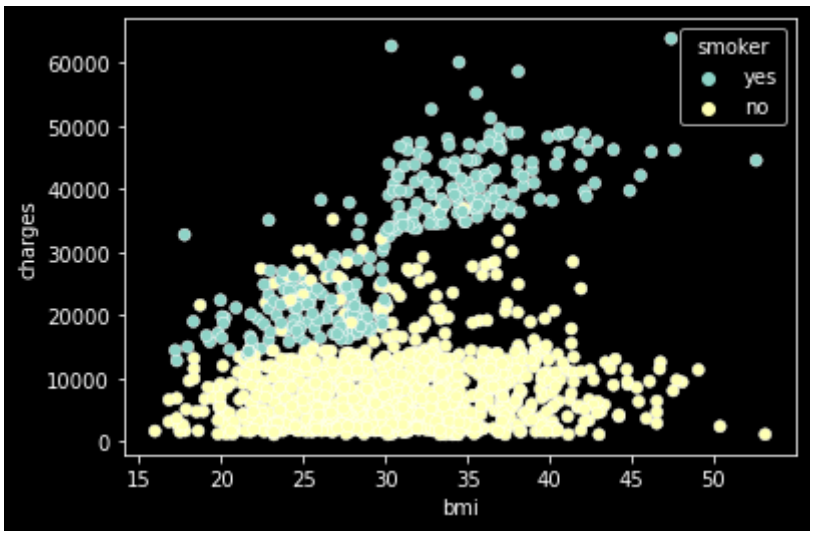
In [66]:
```
sns.regplot(x=insurance_data['bmi'], y=insurance_data['charges'])
```

Out[66]: <AxesSubplot:xlabel='bmi', ylabel='charges'>



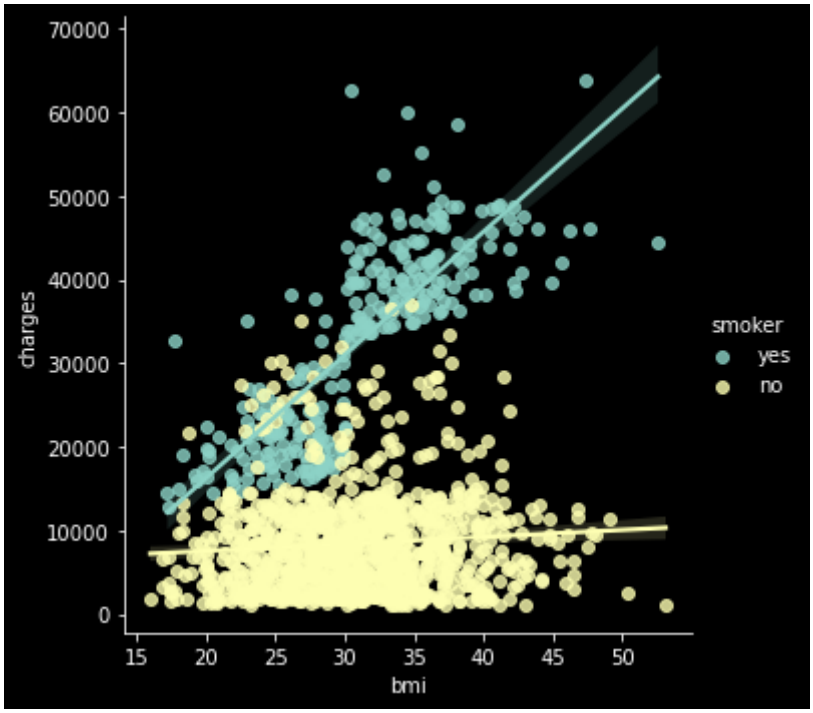
In [67]:
```
sns.scatterplot(x=insurance_data['bmi'], y=insurance_data['charges'], hue=insurance_d
```

Out[67]: <AxesSubplot:xlabel='bmi', ylabel='charges'>



In [68]:
```
sns.lmplot(x="bmi", y="charges", hue="smoker", data=insurance_data)
```

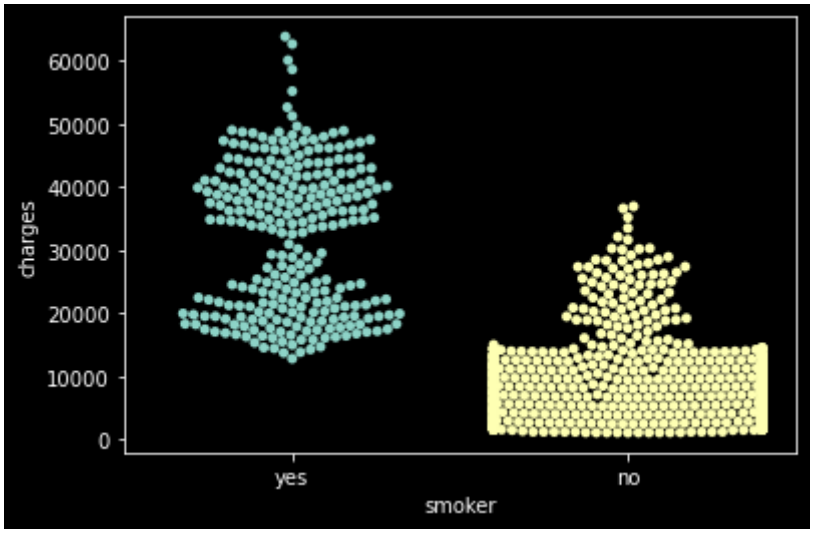
Out[68]: <seaborn.axisgrid.FacetGrid at 0x1f53201b850>



In [69]:
```
sns.swarmplot(x=insurance_data['smoker'],
              y=insurance_data['charges'])
```

```
c:₩Users₩hyeonsu₩anaconda3₩envs₩data_visualization₩lib₩site-packages₩seaborn₩categoric
al.py:1296: UserWarning: 67.3% of the points cannot be placed; you may want to decreas
e the size of the markers or use stripplot.
  warnings.warn(msg, UserWarning)
```

Out[69]:
```
<AxesSubplot:xlabel='smoker', ylabel='charges'>
```

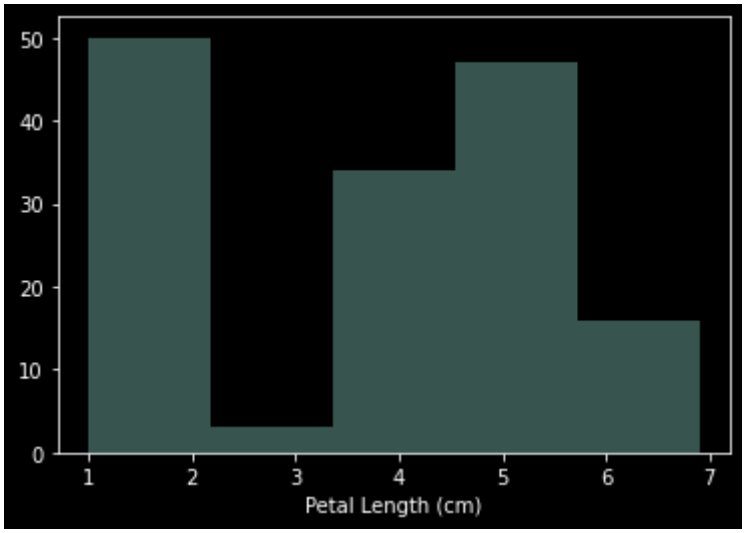


In [75]:
```
iris_filepath = "./input/iris.csv"

iris_data = pd.read_csv(iris_filepath, index_col="Id")
```

In [72]:
```
sns.distplot(a=iris_data['Petal Length (cm)'], kde=False)
```

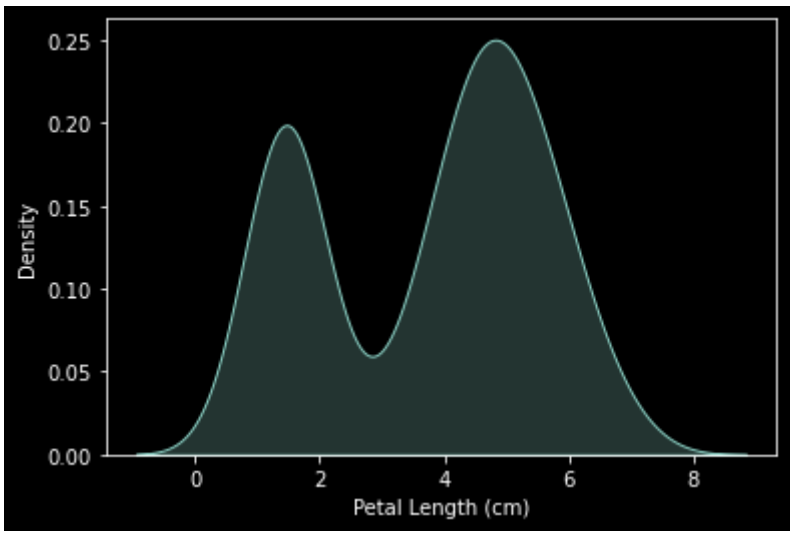
```
c:₩Users₩hyeonsu₩anaconda3₩envs₩data_visualization₩lib₩site-packages₩seaborn₩distribut
ions.py:2619: FutureWarning: `distplot` is a deprecated function and will be removed i
n a future version. Please adapt your code to use either `displot` (a figure-level fun
ction with similar flexibility) or `histplot` (an axes-level function for histograms).
  warnings.warn(msg, FutureWarning)
<AxesSubplot:xlabel='Petal Length (cm)'>
```

Out[72]:



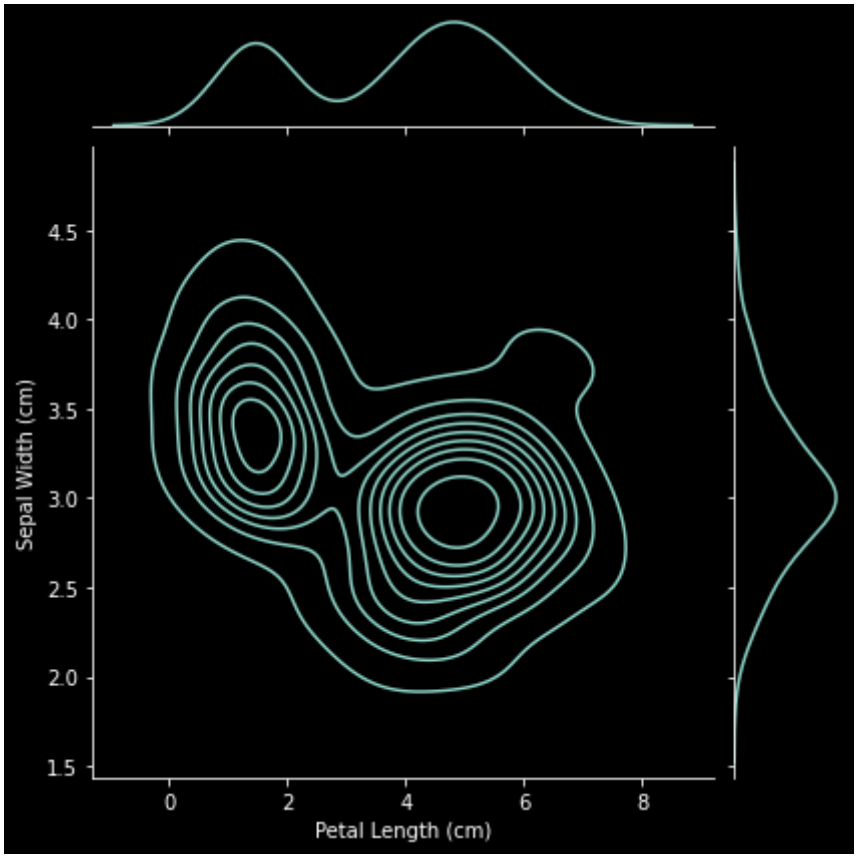
In [73]:
```
sns.kdeplot(data=iris_data['Petal Length (cm)'], shade=True)
```

Out[73]:
```
<AxesSubplot:xlabel='Petal Length (cm)', ylabel='Density'>
```



In [74]:
```
sns.jointplot(x=iris_data['Petal Length (cm)'], y=iris_data['Sepal Width (cm)'], kind
```

Out[74]:
```
<seaborn.axisgrid.JointGrid at 0x1f533c65e50>
```


Sepal Width (cm)
4.5
4.0
3.5
3.0
2.5
2.0
1.5
0
2
4
6
8
Petal Length (cm)