In [50]:
```
import pandas as pd
import seaborn as sns
```

In [18]:
```
path = "C:/Users/stask/Analitics_Karpov/Module3/taxi_peru.csv"
taxi = pd.read_csv(path, sep=';', parse_dates=['start_at', 'end_at', 'arrived_at'])
taxi.dtypes
```

Out[18]:
```
journey_id                 object
user_id                    object
driver_id                  object
taxi_id                    object
icon                       object
start_type                 object
start_at           datetime64[ns]
start_lat                  object
start_lon                  object
end_at             datetime64[ns]
end_lat                    object
end_lon                    object
end_state                  object
driver_start_lat           object
driver_start_lon           object
arrived_at         datetime64[ns]
source                     object
driver_score              float64
rider_score               float64
dtype: object
```

In [28]:
```
# 1) Now get a series with the number of unique values
# for each column and assign it to the variable unique_num.
unique_num = taxi.nunique()
unique_num
```

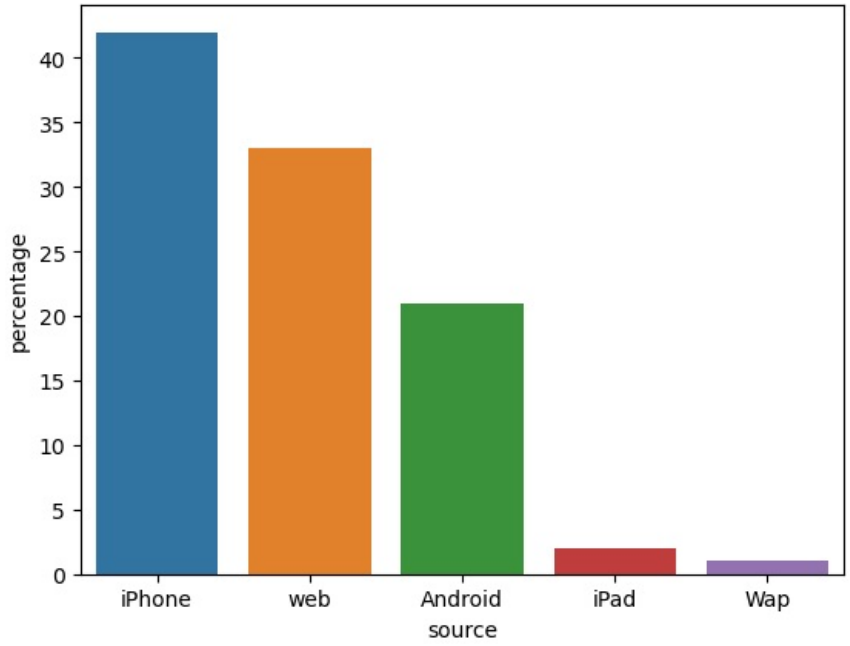
Out[28]:
```
journey_id          23111
user_id              1390
driver_id             168
taxi_id               213
icon                    3
start_type              3
start_at            20987
start_lat           11753
start_lon            8489
end_at              21780
end_lat             12266
end_lon              9084
end_state               6
driver_start_lat    18425
driver_start_lon    18314
arrived_at          17156
source                  5
driver_score            6
rider_score             6
dtype: int64
```

In [49]:
```
#  Check from which platform the most orders were made. Answer with % value rounded to integers.
platform_distribution = (taxi.source.value_counts() / taxi.shape[0]).mul(100).round() \
    .reset_index().rename(columns={'index':'source','source':'percentage'})
platform_distribution
```

Out[49]:

	source	percentage
0	iPhone	42.0
1	web	33.0
2	Android	21.0
3	iPad	2.0
4	Wap	1.0

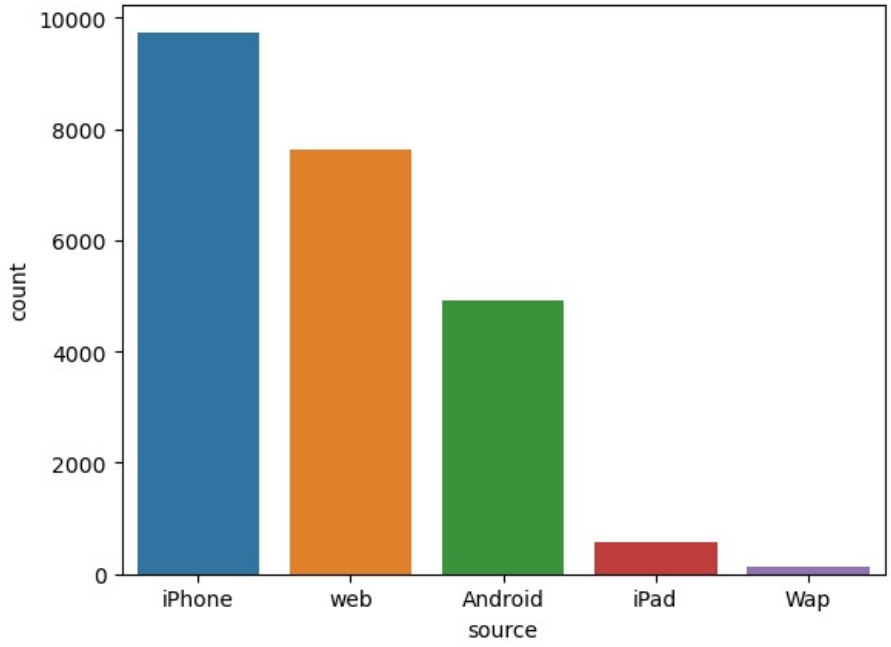
In [65]:
```
ax = sns.barplot(x='source', y='percentage', data=platform_distribution)
```



In [64]:
```
# The same graph, but trying to use countplot function and put in the right order
order = taxi['source'].value_counts().index
order
```

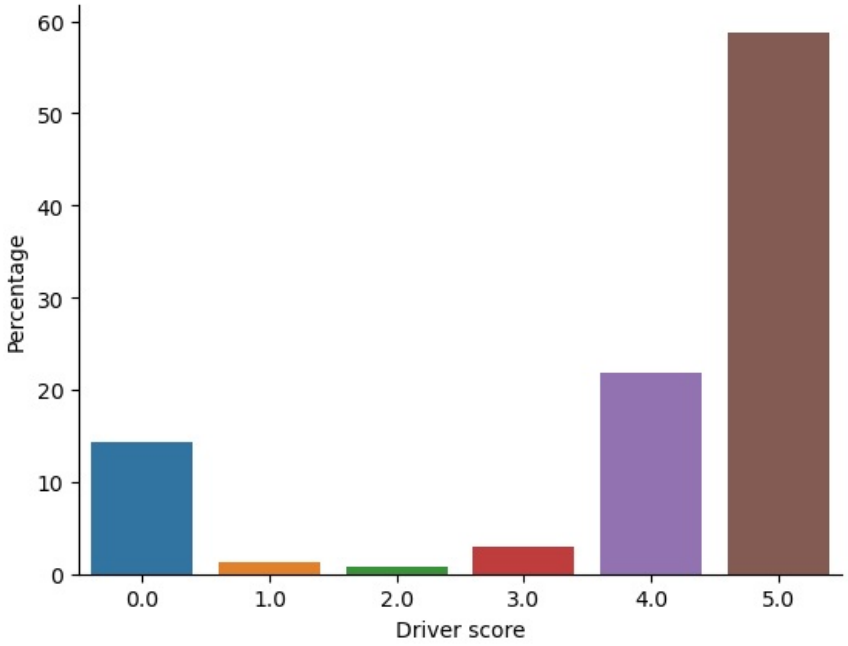
Out[64]:
```
Index(['iPhone', 'web', 'Android', 'iPad', 'Wap'], dtype='object')
```

In [63]:
```
a = sns.countplot(x='source', data=taxi, order=order)
```



4) Check the distribution of driver scores (driver_score). Perform the following steps to prepare the data:
- Calculate the frequency of occurrence of each of the scores
- Convert to percentages and round to 2 decimal places (.mul(100).round(2))
- Reset the indexes
- Rename the columns to driver_score and percentage
- Sort by driver_score in ascending order (0 to 5)
- Write the result to driver_score_counts

In [71]:
```
driver_score_counts = (taxi.driver_score.value_counts() / taxi.query('driver_score >= 0').shape[0]).mul(100).ro
    .reset_index().rename(columns={'index':'score','driver_score':'percentage'}) \
    .sort_values('percentage', ascending=True)
ax = sns.barplot(x='score', y='percentage', data=driver_score_counts)
ax.set(xlabel='Driver score', ylabel='Percentage')
sns.despine() # remove part of the chart frame
```



6) 💀 Difficult task! 💀
Do similar steps for rider_score (customer estimates by drivers), remembering to plot the graph.
How does it differ from the distribution of the drivers' scores?

In [72]:
```
rider_score_counts = (taxi.rider_score.value_counts() / taxi.query('driver_score >= 0').shape[0]).mul(100).roun
    .reset_index().rename(columns={'index':'score','rider_score':'percentage'}) \
    .sort_values('percentage', ascending=True)
ax = sns.barplot(x='score', y='percentage', data=rider_score_counts)
ax.set(xlabel='Rider score', ylabel='Percentage')
sns.despine() # remove part of the chart frame
```