Seaborn kdeplot

SHARP SIGHT

What you'll learn

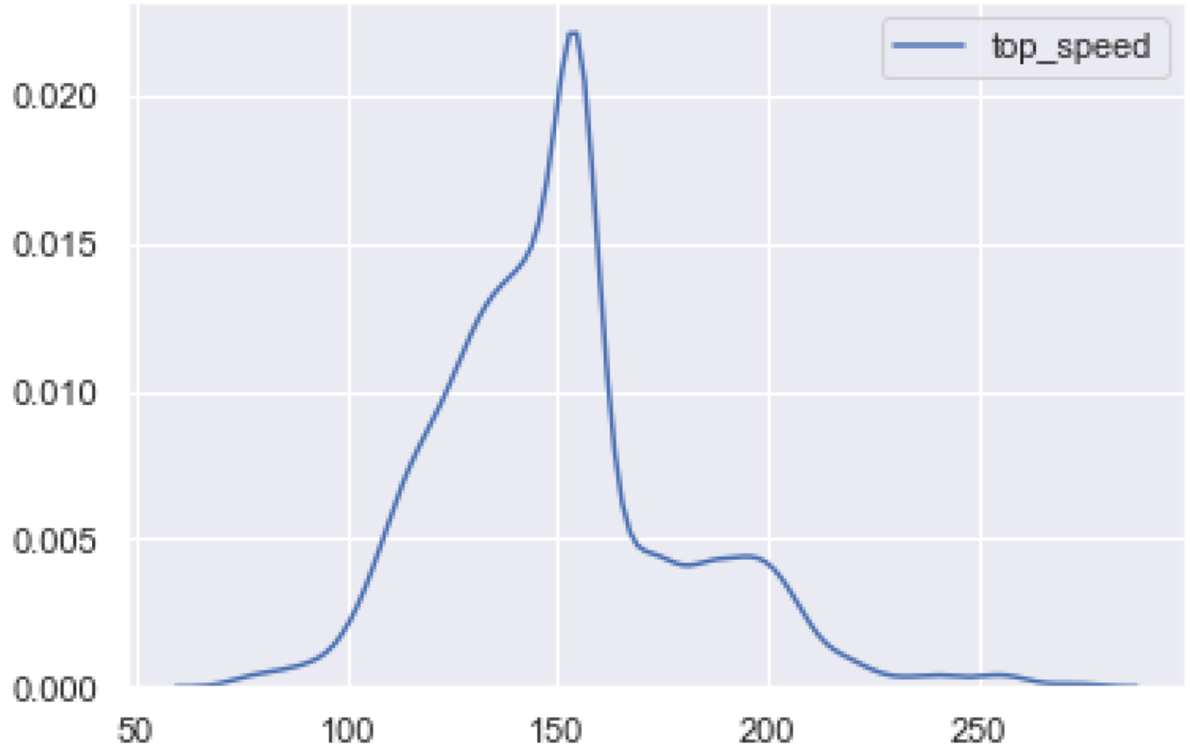
- How to create a KDE plot in Seaborn
  - i.e., a density plot
  - i.e., "kernel density estimate" plot

- How to modify your KDE plots
  - change color
  - change the smoothness
  - add shading under the line

Seaborn kdeplot overview

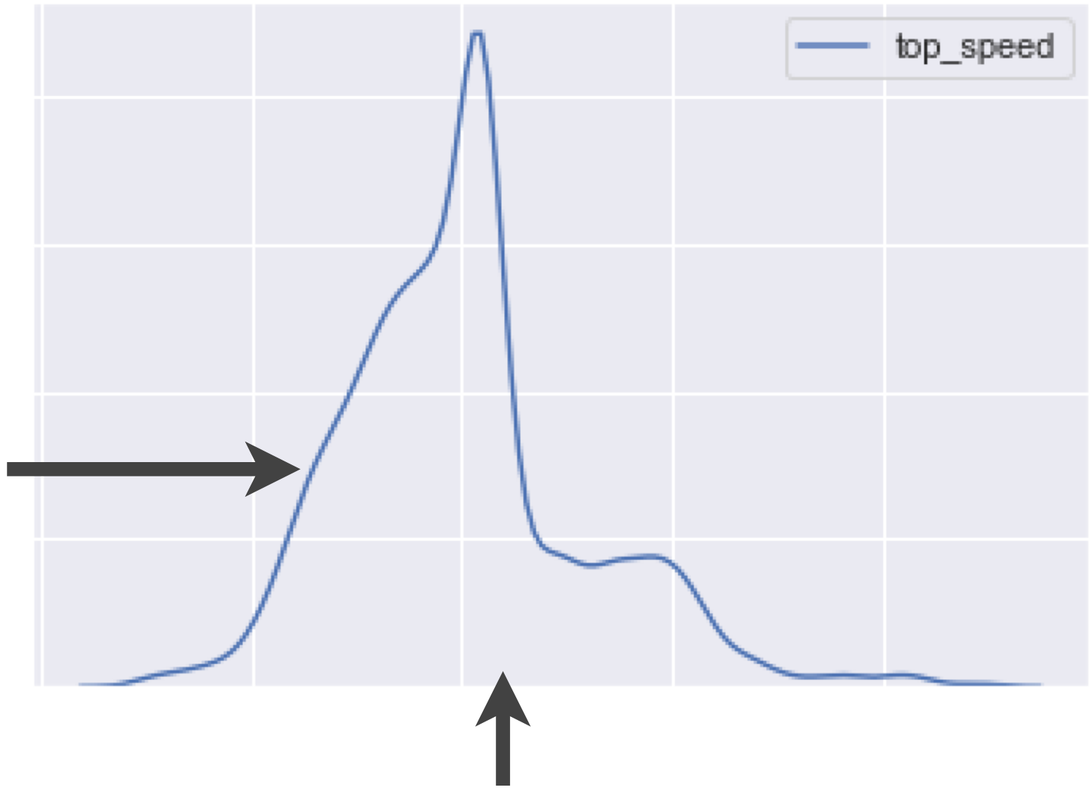
SNS. KDEPLOT CREATES A "KERNEL DENSITY ESTIMATE" PLOT

```
sns.kdeplot(supercars.top_speed)
```



SNS. KDEPLOT CREATES A "KERNEL DENSITY ESTIMATE" PLOT

The height of the line represents the density for that value of the x-axis

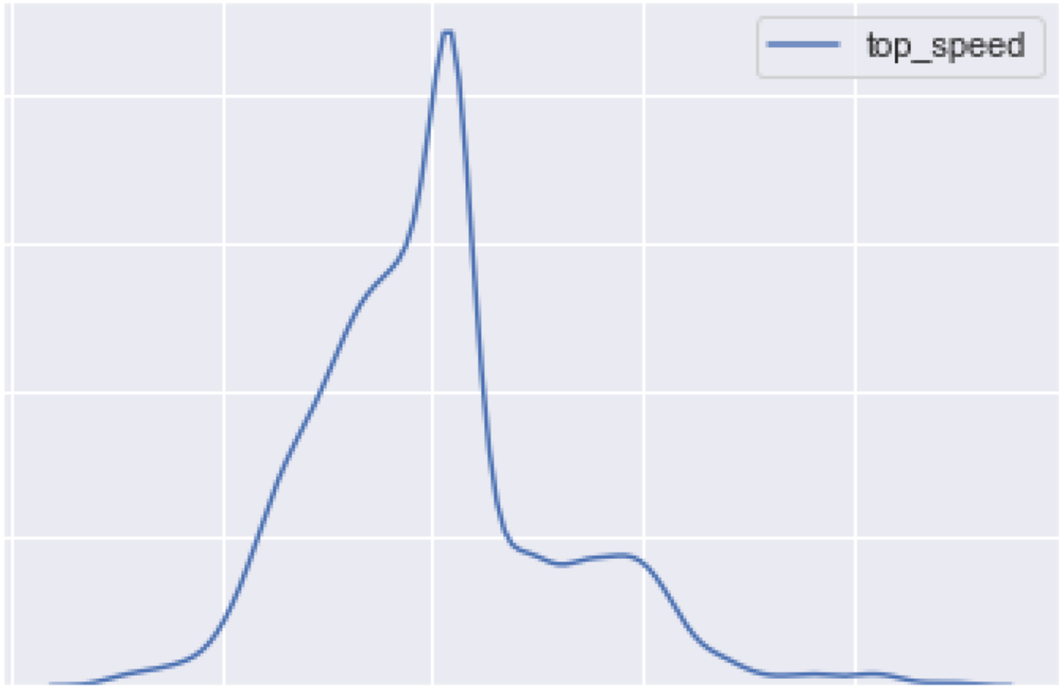


In a KDE density plot, a numeric variable is mapped to the x axis

KDE PLOTS ENABLE US TO VISUALIZE AND EXAMINE HOW A VARIABLE IS DISTRIBUTED

We often use KDE plots to analyze single variables

We're typically looking for unusual shapes, peaks, outliers, etc



Seaborn kdeplot syntax

Syntax of sns.kdeplot

The name of
the function

```
sns.kdeplot(data)
```

A DataFrame variable
or 1-dimensional, array-like data

(A list, Numpy array, etc)

Parameters of Seaborn kdeplot

The parameters of Seaborn kdeplot

Parameter	What it does	Format
`bw=`	Specify the smoothness of the line	A scalar value or `'scott'` or `'silverman'`
`color=`	Specify the color of the line	A color
`shade=`	Specify whether or not there should be shading underneath the KDE line	`True` or `False`

Note: `sns.kdeplot()` has many more parameters, but these are the most commonly used

Examples of sns.kdeplot

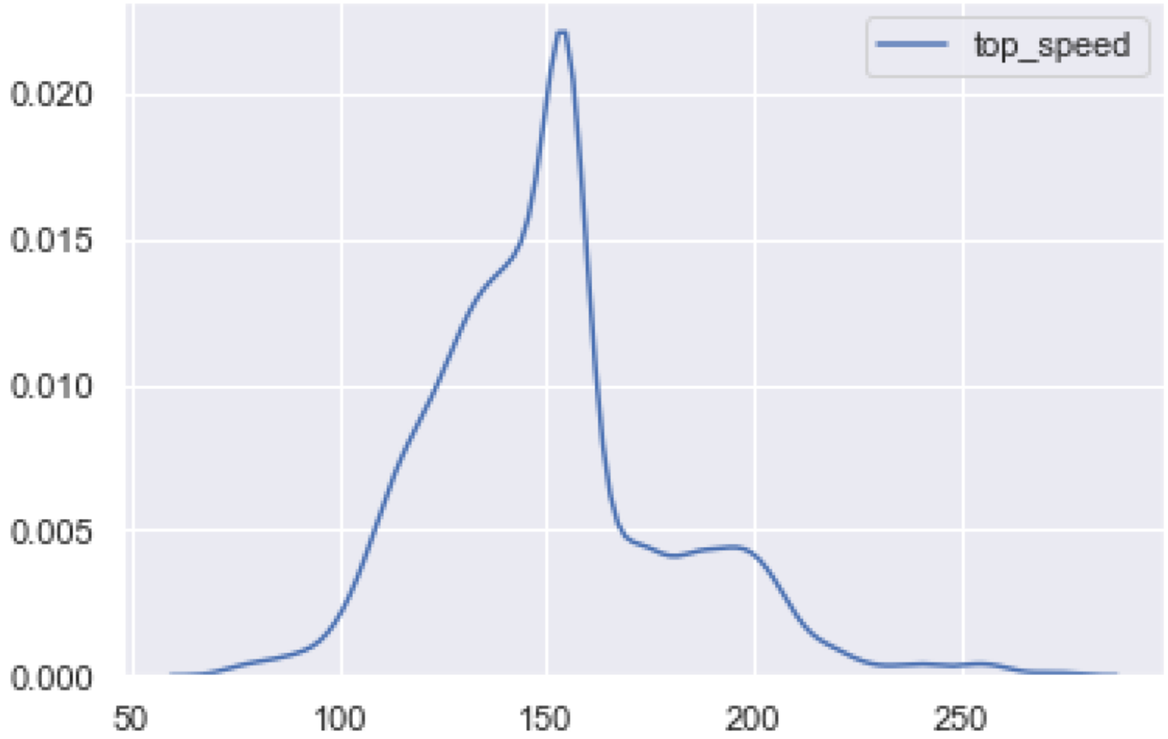
Example 1: a simple KDE density plot

```
sns.kdeplot(supercars.top_speed)
```

Here, we're specifying a DataFrame variable that we want to plot

Example 1: a simple KDE density plot

```
sns.kdeplot(supercars.top_speed)
```



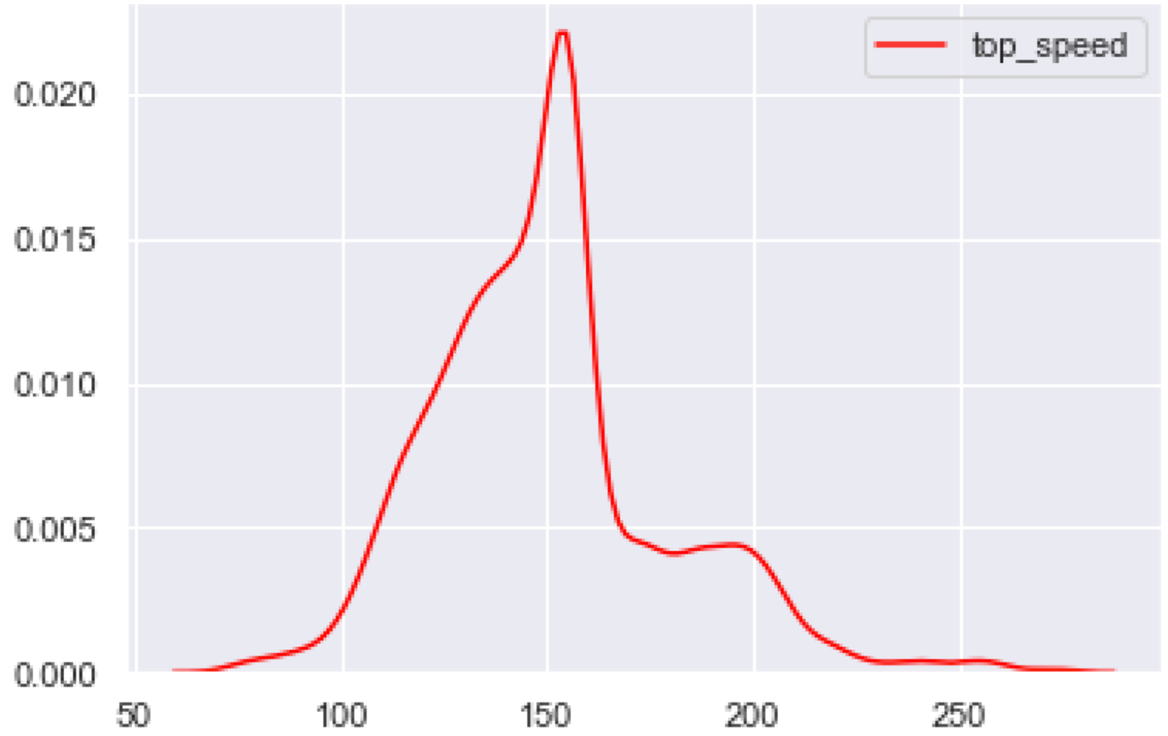
Example 2: change the color

```
sns.kdeplot(supercars.top_speed
            ,color = 'red'
            )
```

Here, we're using the `color` parameter to set the color of the density line to `'red'`

Example 2: change the color

```
sns.kdeplot(supercars.top_speed
            ,color = 'red'
            )
```



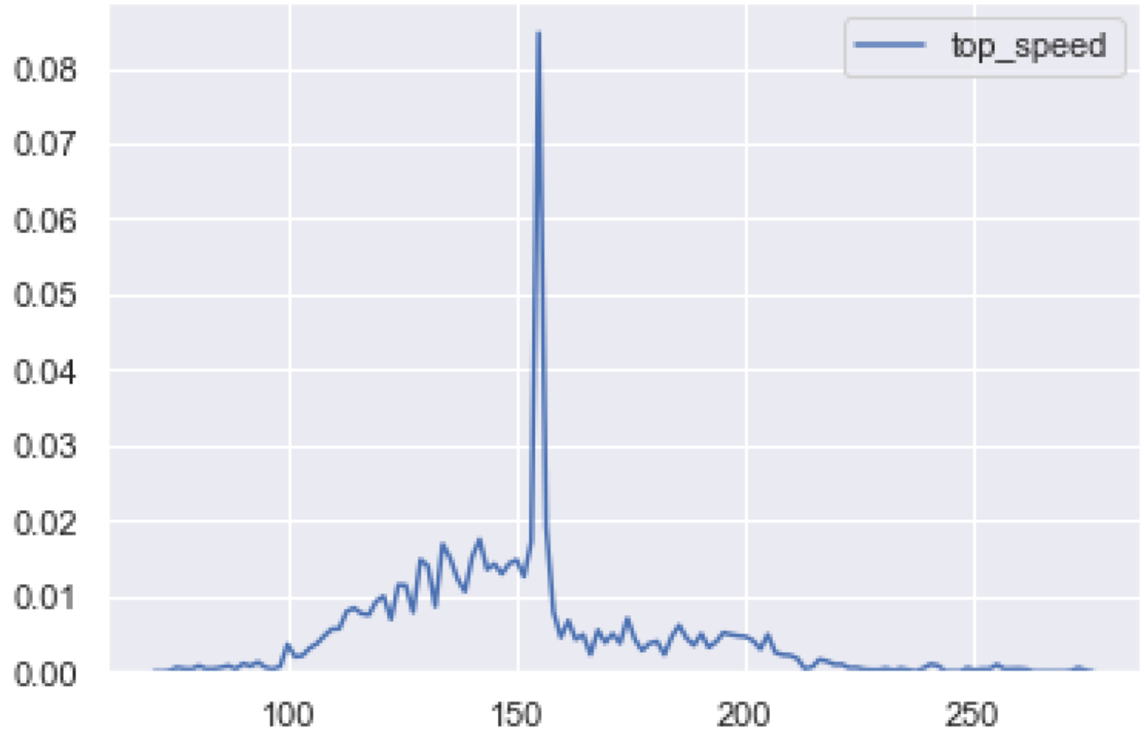
Example 3: change the smoothness

```
sns.kdeplot(supercars.top_speed
            ,bw = 1
            )
```

Here, we're using the `bw` parameter to decrease the smoothness of the line

Example 3: change the smoothness

```
sns.kdeplot(supercars.top_speed
            ,bw = 1
            )
```



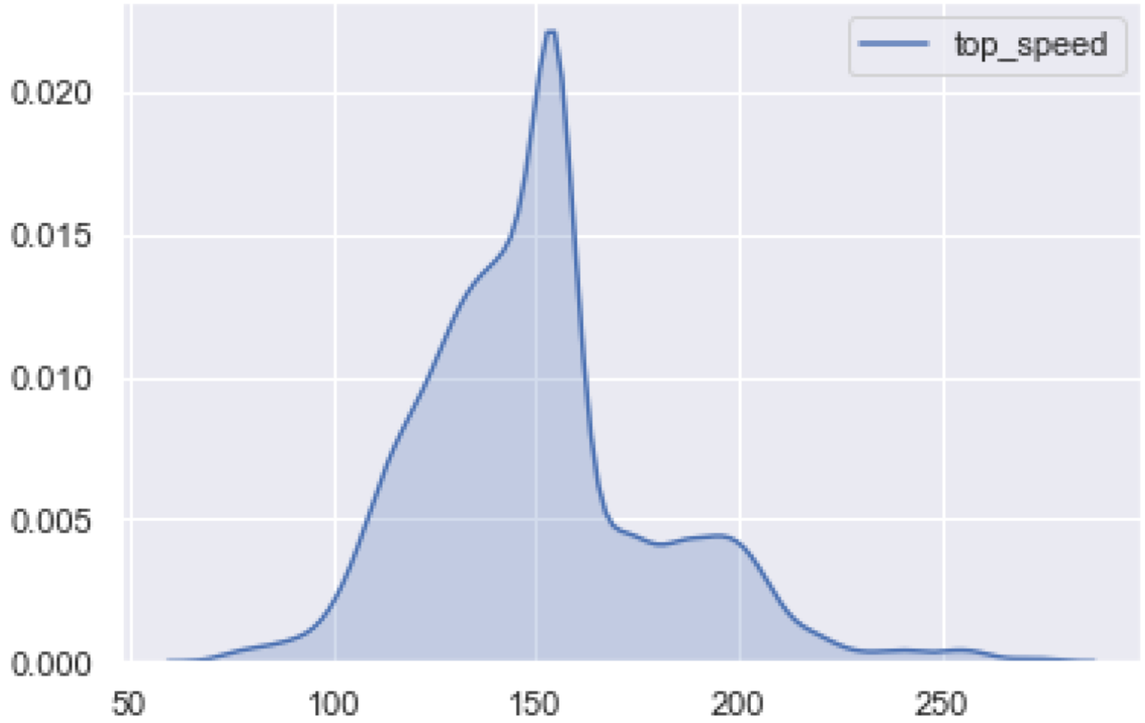
Example 4: add shading under the line

```
sns.kdeplot(supercars.top_speed
            ,shade = True
            )
```

Here, we're setting the `shade` parameter to `shade = True` in order to add shading under the density line

Example 4: add shading under the line

```
sns.kdeplot(supercars.top_speed
            ,shade = True
            )
```



Recap

Recap of what we learned

- How to create a KDE plot in Seaborn
  - i.e., a density plot
  - i.e., "kernel density estimate" plot

- How to modify your KDE plots
  - change color
  - change the smoothness
  - add shading

- **Next Steps**: Watch the code walkthrough video for step-by-step examples