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Get Started

Introduction to Python and its importance in data science

Python is a highly recommended programming language for data science. It has very rich libraries to perform data science tasks like Pandas, Numpy etc

Installing Python and an integrated development environment (IDE)

1. Install Python https://www.python.org/downloads/
2. Install Anaconda https://docs.anaconda.com/free/anaconda/install/windows/

Basic Python syntax: variables, data types, arithmetic operations

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Task: Write a Python program to calculate the area of a rectangle given its length and width.

In [1]:
```
# Step 1:
# Input Length
length = float(input("Enter the length of the rectangle: "))
print("You have entered the Length: ")
print(length)
```

```
Enter the length of the rectangle: 500
You have entered the Length:
500.0
```

In [2]:
```
# Step 2:
# Input Width
width = float(input("Enter the width of the rectangle: "))
print("You have entered the Width: ")
print(width)
```

```
Enter the width of the rectangle: 350
You have entered the Width:
350.0
```

In [3]:
```
# Step 3:
# Calculate Area
area = length * width
```

In [4]:
```
# Step 4:
# Print Results
print("Rectangle Area with Length = ",length," and width = ",width," is = ",
```

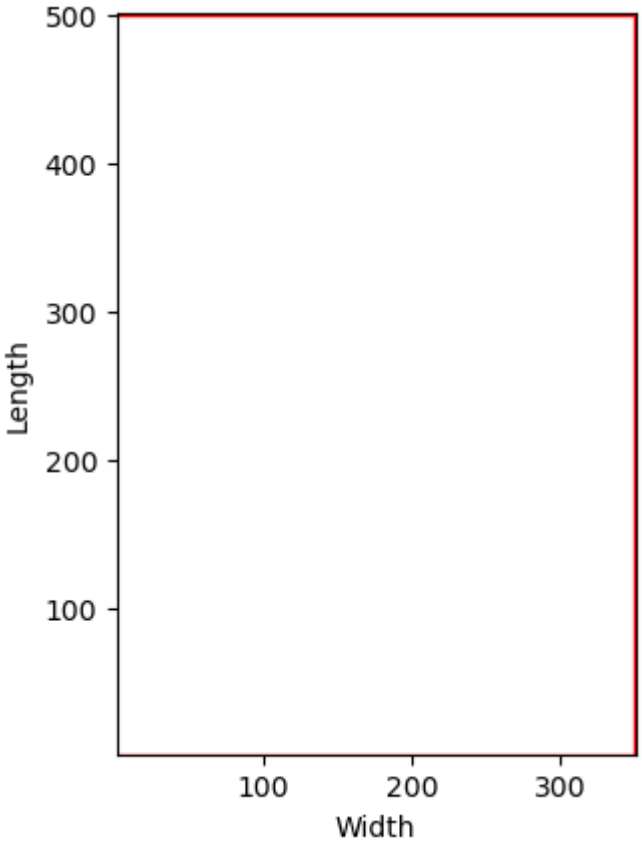
```
Rectangle Area with Length =  500.0  and width =  350.0  is =  175000.0
```

BONUS: Drawing rectangle

In [5]:
```
#Import Libraries
import matplotlib.pyplot as plt
import matplotlib.patches as patches
```

In [15]:
```
# Create a figure and axis
fig, ax = plt.subplots()

# Create a rectangle patch
rectangle = patches.Rectangle((0, 0), width, length, linewidth=1, edgecolor=

# Add the rectangle patch to the axis
ax.add_patch(rectangle)

# Set axis limits and labels
ax.set_xlim(1, width + 1)
ax.set_ylim(1, length + 1)
ax.set_xlabel('Width')
ax.set_ylabel('Length')
ax.set_aspect('equal', adjustable='box')

# Print the result
print("The area of the rectangle is:", area)

# Display the plot
plt.show()
```

```
The area of the rectangle is: 175000.0
```


500
400
300
200
100
Length
100
200
300
Width