S.No: 5	Exp. Name: ***Write a Python program to calculate the weight of a steel bar***	Date:2024-10-23

Aim:

You are tasked with writing a program to calculate the weight of a steel bar. The weight of the steel bar is determined by its length and diameter. The program should prompt the user to enter the length and diameter of the steel bar in meters. Using the given inputs, the program should calculate and display the weight of the steel bar in kilograms.

Write a Python program to implement the above requirements. Ensure that the program includes a function **calculate_steel_bar_weight()** which takes the *length* and *diameter* as input parameters and returns the weight of the steel bar.

Note:

1. Assume that the density of steel as 7850 kg/m^3 and the steel bar is cylindrical in shape.
2. Round the final result to three decimal places
3. Take the pi value as **3.14159.**

Sample Test Case:
Input:
Enter the length of the steel bar (in meters): 5
Enter the diameter of the steel bar (in meters): 1

Output:
The weight of the steel bar is: 30826.852 kg

Source Code:

WeightOfSteelBar.py

```
# Type Content here...
def calculate_steel_bar_weight(l,d):
   r=d/2
   v=3.14159*(r**2)*l
   w=v*7850
   print("The weight of the steel bar is:","%.3f"%w,"kg")
l=int(input('Enter the length of the steel bar (in meters): '))
d=int(input('Enter the diameter of the steel bar (in meters): '))
calculate_steel_bar_weight(l,d)
```

```
'''
# Prompt the user for input
length = float(input("Enter the length of the steel bar (in meters): "))
diameter = float(input("Enter the diameter of the steel bar (in meters): "))

# Calculate the weight of the steel bar
steel_bar_weight = calculate_steel_bar_weight(length, diameter)

# Print the result
print("The weight of the steel bar is:", round(steel_bar_weight,3), "kg")
'''
```

Execution Results - All test cases have succeeded!

Test Case - 1
User Output
Enter the length of the steel bar (in meters): 5
Enter the diameter of the steel bar (in meters): 1
The weight of the steel bar is: 30826.852 kg

Test Case - 2
User Output
Enter the length of the steel bar (in meters): 10
Enter the diameter of the steel bar (in meters): 2
The weight of the steel bar is: 246614.815 kg