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Code

JupyterLab Python 3 (ipykernel)

[ ]:
```
#1.Write a Python program to calculate the square root of a number using the math module.
```

[3]:
```
import math
number = float(input("Enter a number to calculate its square root: "))
square_root = math.sqrt(number)
print(f"The square root of {number} is {square_root}")
```

```
Enter a number to calculate its square root:  25
The square root of 25.0 is 5.0
```

[ ]:
```
#2.Write a Python program to generate a random number between 1 and 10 using the random module.
```

[5]:
```
import random

random_number = random.randint(1, 10)
print(f"Random number between 1 and 10: {random_number}")
```

```
Random number between 1 and 10: 4
```

[ ]:
```
#3.Write a Python program to calculate the factorial of a number using the math module.
```

[7]:
```
import math

number = int(input("Enter a number to calculate its factorial: "))
factorial = math.factorial(number)
print(f"The factorial of {number} is {factorial}")
```

```
Enter a number to calculate its factorial:  10
The factorial of 10 is 3628800
```

[ ]:
```
#4.Create a Python module named math_operations that contains functions to calculate
# the area of a circle, the area of a rectangle and the area of a triangle.
```

21° ENG IN 09:44 PM 20-10-2024

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Code

JupyterLab | Python 3 (ipykernel)

[ ]:
```
#4.Create a Python module named math_operations that contains functions to calculate
# the area of a circle, the area of a rectangle and the area of a triangle.
# Write a program to use this module to perform area calculations.
```

[*]:
```
import math

def main():
    print("Welcome to the Area Calculator!")
    while True:
        print("\nChoose a shape to calculate its area:")
        print("1. Circle")
        print("2. Rectangle")
        print("3. Triangle")
        print("4. Quit")

        choice = input("Enter your choice (1-4): ")

        if choice == '1':
            radius = float(input("Enter the radius of the circle: "))
            area = math_operations.circle_area(radius)
            print(f"The area of the circle is {area:.2f} square units.")
        elif choice == '2':
            length = float(input("Enter the length of the rectangle: "))
            width = float(input("Enter the width of the rectangle: "))
            area = math_operations.rectangle_area(length, width)
            print(f"The area of the rectangle is {area:.2f} square units.")
        elif choice == '3':
            base = float(input("Enter the base of the triangle: "))
            height = float(input("Enter the height of the triangle: "))
            area = math_operations.triangle_area(base, height)
            print(f"The area of the triangle is {area:.2f} square units.")
        elif choice == '4':
            print("Thank you for using the Area Calculator. Goodbye!")
            break
```

21° ENG IN 09:44 PM 20-10-2024

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Code

JupyterLab | Python 3 (ipykernel)

```
            base = float(input("Enter the base of the triangle: "))
            height = float(input("Enter the height of the triangle: "))
            area = math_operations.triangle_area(base, height)
            print(f"The area of the triangle is {area:.2f} square units.")
        elif choice == '4':
            print("Thank you for using the Area Calculator. Goodbye!")
            break
        else:
            print("Invalid choice. Please try again.")

if __name__ == "__main__":
    main()
```

```
Welcome to the Area Calculator!

Choose a shape to calculate its area:
1. Circle
2. Rectangle
3. Triangle
4. Quit
Enter your choice (1-4):
```

[ ]:
```
#5. Exercise 5: (score: 2)
# Create a Python module named temperature_conversion that contains functions to convert
# Celsius to Fahrenheit and Fahrenheit to Celsius. Write a program to use this module
# to perform temperature conversions.
```

[15]:

```
Enter a number:  5
Successfully converted '5' to integer: 5
```

[15]:
```
5
```

[ ]:

21° | ENG IN | 09:45 PM 20-10-2024