Assignment2

December 30, 2024

[1]:
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#Class: B Tech CE - A
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[7]:
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# Accept three sides of a triangle and print if the triangle is equilateral,␣
 ↪isosceles or scalene.

print("Input three sides of a triangle: ")
s1 = int(input("Side 1: "))
s2 = int(input("Side 2: "))
s3 = int(input("Side 3: "))

if s1 == s2 == s3:
    print("The triangle is an equilateral triangle.")
elif s1 == s2 or s2 == s3 or s3 == s1:
    print("The triangle is an isosceles triangle.")
else:
    print("The triangle is a scalene triangle.")
```

```
Input three sides of a triangle:

Side 1:  3
Side 2:  5
Side 3:  3

The triangle is an isosceles triangle.
```

[15]:
```
# 2.        A function f is defined as follows :
#          f(x)    =    ax3 - bx2 + cx -d,         if x > k
#                  =    0,                         if x = k
#                  =    -ax3 + bx2 - cx +d,        if x < k
#          Write a program that reads a, b, c, d, k and x and prints the value␣
 ↪of f(x).

print("Enter the values of a, b, c, d, k and x.")
a  = int(input("a: "))
b  = int(input("b: "))
c  = int(input("c: "))
d  = int(input("d: "))
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k  = int(input("k: "))
x  = int(input("x: "))

if x > k:
    print(f" f(x) = {a}*({x}^3) - {b}*({x}^2) + {c}*{x} - {d}")
elif x == k:
    print(f" f(x) = 0")
elif x < k:
    print(f" f(x) = -{a}*({x}^3) + {b}*({x}^2) - {c}*{x} + {d}")
```

```
Enter the values of a, b, c, d, k and x.

a:  3
b:  2
c:  4
d:  6
k:  7
x:  2

 f(x) = -3*(2^3) + 2*(2^2) - 4*2 + 6
```

[69]:
```
#     Implement Body Mass Index calculator. Define BMI function to accept␣
 ↪weight and height
#     as parameter and displays appropriate BMI status.
#     BMI = weight(kg)/Height^2
# BM                Status
# <= 18.4            Underweight
# 18.5 - 24.9        Normal
# 25.0 - 39.9        Overweight
# >=40                Obese

def BMI(weight, height):
    return weight/(height**2)

weight = float(input("Enter the weight(in kg): "))
height = float(input("Enter the height(in metres): "))

x = BMI(weight, height)

if x <= 18.4:
    print(f"BMI Status: {x} which is Underweight")
elif x >= 18.5 and x <= 24.9:
    print(f"BMI Status: {x} which is Normal")
elif x >= 25 and x <= 39.9:
    print(f"BMI Status: {x} which is Overweight")
else:
    print(f"BMI Status: {x} which is Obese")
```

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Enter the weight(in kg):  72
```

```
Enter the height(in metres):  1.82

BMI Status: 21.736505252988767 which is Normal
```

[7]:
```python
#4.        Implement distance convertor to convert distances by reading choice␣
 ↪from user
# a.        Inches to feet
# b.        Cm to meter

print("Distance converter: \na. Inches to feet \nb. Centimeters to meters.")
choice = input("Enter the choice a or b: ")

if choice == 'a':
    inch = float(input("Enter the value in inches: "))
    feet = inch*12
    print(f"{inch} inches equals to {feet} feet.")
elif choice == 'b':
    cm = float(input("Enter the valye in centimeters: "))
    m = cm/100
    print(f"{cm} centimeters equals to {m} meters.")
else:
    print("Please enter a valid choice a or b.")
```

```
Distance converter:
a. Inches to feet
b. Centimeters to meters.

Enter the choice a or b:  a
Enter the value in inches:  1.5

1.5 inches equals to 18.0 feet.
```

[9]:
```python
# Write a program to read and display a string

string = input("Enter a string: ")

print(string)
```

```
Enter a string:  Siddhant Puranik

Siddhant Puranik
```

[11]:
```python
# Define one string and display all elements at odd indexes using slicing␣
 ↪operator

string = "123456789"

print(string[0::2])
```

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13579
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[15]:
```
#         Write a program to check entered string is palindrome or not.

string = input("Enter a string: ")

if string == string[-1::-1]:
    print(f" string {string} is a palindrome.")
else:
    print(f" String {string} is not a palindrome.")
```

```
Enter a string:  aibohphobia
 string aibohphobia is a palindrome.
```