AI Lab Journal 02

Muhammad Naeem Tahir

01-134202-117

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In [ ]:

Lab Journal 2-A

Task 01

In [25]:
```
#import math library
import math as m


# base class => basic_calc
class basic_calc:
    def __init__(self, x=0, y=0):
        self.x = x
        self.y = y

    # addition function
    def addition(self):
        return self.x + self.y

    # subtraction function
    def subtraction(self):
        return self.x - self.y

    # multipliction function
    def multiplication(self):
        return self.x * self.y

    # division function
    def classic_division(self):
        return self.x / self.y


# inherited class => s_cacl
class s_calc(basic_calc):
    def __init__(self, x=0, y=0):
        self.x = x
        self.y = y

    # factorial function
    def Factorial(self, x):
        factorial = 1

        if(x == 0 and x == 1):
            return x
        elif(x < 0):
            print("Factorial of a negative number is not possible.")
            return
        else:
            for i in range(1, x+1):
```

```
                factorial = factorial * i

        return factorial


    # function to calculate power
    def x_power_y(self):
        return self.x ** self.y

    # function to calculate log
    def log(self, x):
        return m.log(x)


obj_s_cal = s_calc(10, 2)

# outputs
print(f"Power calculated: {obj_s_cal.x_power_y()}")
print(f"Factorial: {obj_s_cal.Factorial(3)}")
print(f"log: {obj_s_cal.log(3)}")
print(f"sum: {obj_s_cal.addition()}")
print(f"subtraction: {obj_s_cal.subtraction()}")
print(f"multiplication: {obj_s_cal.multiplication()}")
print(f"Classic division: {obj_s_cal.classic_division()}")
```

```
Power calculated: 100
Factorial: 6
log: 1.0986122886681098
sum: 12
subtraction: 8
multiplication: 20
Classic division: 5.0
```

Lab Journal 2-B

Task 01

In [26]:

```
def Fibonacci(n):

    if(n == 0 or n == 1):
        return 1

    fib = [1, 1]
    a, b = 1, 1
    for i in range(2, n):
        a, b = b, a + b
        fib.append(b)
    return fib

n = int(input("Enter a number: "))
fibonacci_numbers = Fibonacci(n)
print(fibonacci_numbers)
```

```
Enter a number: 9
[1, 1, 2, 3, 5, 8, 13, 21, 34]
```

Task 02

In [27]:

```
VOWELS = ('a', 'e', 'i', 'o', 'u')

def pig_latin(word):
    first_letter = word[0]
    if first_letter in VOWELS:
        return word + 'hay'
```

```
    else:
        return word[1:] + first_letter + 'ay'

text = input("Enter some English text: ")

words = text.split()

for i in range(len(words)):
    words[i] = pig_latin(words[i].lower())

pig_latin_text = ' '.join(words)
print(pig_latin_text)
```

```
Enter some English text: My name is Muhammad Naeem Tahir
ymay amenay ishay uhammadmay aeemnay ahirtay
```