The Assam Kaziranga University, Jorhat, Assam

Python Programming Lab
Assignment Report

Submitted by:

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Class: BCA 4th Semester

Subject: Python Programming Lab

Roll No. : CS23BCAGN068

1. Arithmetic and Quadratic Operations

Objective:
Implement basic arithmetic operations and solve a quadratic equation using Python.

Code Summary:
- Takes two numbers and performs addition and multiplication.
- Solves the quadratic equation $ax^2 + bx + c = 0$ using the discriminant formula.

Output Example:
Addition: 8
Multiplication: 15
Roots are: -1.0 and -3.0

2. Linear Equation Implementation

Objective:
Evaluate a linear equation $y = mx + c$ for a given value of x.

Code Summary:
- Inputs slope m and y-intercept c.
- Computes y using the linear equation.

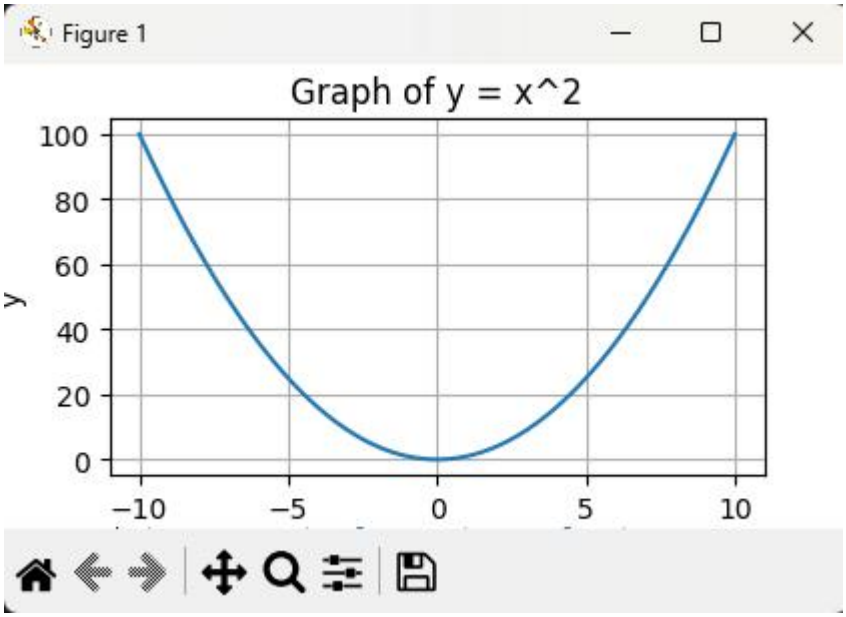
Output Example:
The value of y is: 11.0

3. Graphical Representation of Function

Objective:
Plot the function $y = x^2$ using matplotlib.

Code Summary:
- Uses NumPy to create x-values.
- Uses matplotlib to plot the curve.

Output:



4. Function Implementation

Objective:
Define a function to compute the factorial of a number using recursion.

Code Summary:
- Recursive function factorial(n) defined.
- Accepts user input and prints the result.

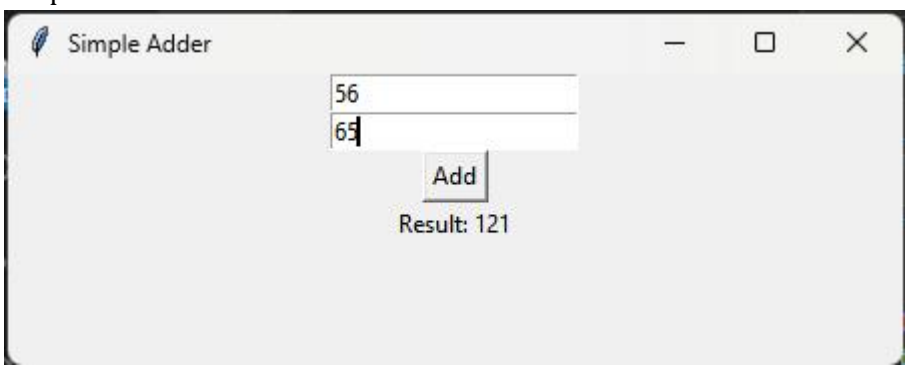
Output Example:
Factorial: 120

5. Tkinter-Based Application - Snake Game

Objective:
Create a GUI-based Snake game using Tkinter.

Code Summary:
- Canvas displays the snake and food.
- Arrow keys control snake movement.
- Game ends on collision.

Output:



Conclusion

This assignment helped in understanding:
- Basic arithmetic and quadratic logic in Python
- Equation solving
- Graph plotting using matplotlib
- Recursive function writing
- GUI creation using Tkinter