

INST 326 FINAL PROJECT

POLYNOMIAL PLOTTER

Diwash- I have created a class called polynomial and then initialized a magic method called “__init__” and used two functions: evaluate() and derivative()

Class Polynomial: stores information about polynomials and its derivatives.

__init__ () method: Initializes the list of coefficients representing polynomials and stores them as an attribute. They are stored in descending power of x i.e, the first element has the highest power of x.

$$\text{Ex:- } f(x) = 4x^3 + 3x^2 + 2x + 1$$

evaluate() function: calculate the polynomial at given x value using list comprehension.

$$\text{Ex:- } f(2) = 4*2^3 + 3*2^2 + 2*2 + 1 = 49$$

derivative() function: compute the new polynomial from the current polynomial by multiplying each coefficient by the given power of x and decreasing power by 1. If the coefficient is constant, it returns 0. The function uses the Conditional Expression to return a new polynomial.

$$\text{Ex:- } f'(x) = 12x^2 + 6x + 2$$

[illegible]