

1. Implement the recursive FFT, and iterative FFT algorithms and test the output of your program by comparing it with the in-built library function.

Compute the DFT of the input vector (0,2,3, -1,4,5,7,9) using algorithms you implemented.

2. Implement a program to demonstrate how FFT can be used to multiply the polynomials. Show the result of multiplication of following two polynomials.

$A(x) = 6x^3 + 7x^2 - 10x + 9$ and $B(x) = -2x^3 + 4x - 5$