

Lab 2

Solution of Nonlinear Equations

1. Write a program to solve non-linear equation using Half Interval method. Your program should read an initial guess from keyboard and display the followings if the solution is obtained:
 - a. Estimated root of the equation
 - b. Functional value at calculated root
 - c. Required number of iterations
2. Write a program to solve non-linear equation using Newton's method. Your program should read an initial guess from keyboard and display the followings if the solution is obtained:
 - a. Estimated root of the equation
 - b. Functional value at calculated root
 - c. Required number of iterations
3. Write a program to solve non-linear equation using Secant method. Your program should read an initial guess from keyboard and display the followings if the solution is obtained:
 - a. Estimated root of the equation
 - b. Functional value at calculated root
 - c. Required number of iterations
4. Write a program to solve non-linear equation using Fixed Point Iteration method. Your program should read an initial guess from keyboard and display the followings if the solution is obtained:
 - a. Estimated root of the equation
 - b. Functional value at calculated root
 - c. Required number of iterations
5. Write program to implement Horner's method.
6. Compare various method for solving non-linear equation in terms of speed, accuracy and ease of coding.

Note: Lab report must contain algorithm, source code and output of each programming problem.