1. Binection Method

Aim: The binection method in used to find the mosts of a polynomial equation. It peparater the interval and publivides the interval in which the root of equation liers. The principle behind this method is the intermedi theorem for continuous functions.

1 decimal of

1,21 1 1 1 1 1 2 2 2 2 3

Preudocode:

clc

6 = c;

f = input ('Enter non-linear equations: '); a = input (' Enterz first quent : '); b = input (Enter Second gueho: 1); n = input('Number of iteration:'); if + (a) * + (b) <0 for i=1:n c=(a+b)/2 i+ +(a) x +(c) <0

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elne if f(b) x f(c) <0 Justell notiveder it a = e; end and a builter politocald collisionist endolds so drimonglog of to also many dirp ('No root beetween given bracketi) end of bortom will Inited a Intering · anoids mut auopaitance not me crossit Input : Phonobine a? $f = 2^{\infty} - 5 \times + 2;$ for input (, Enter non-linears editations); p = 1, when fresh tish dash in the n = 200 tous tomosois nothing) tugni = d [Output] to neclmun!) dugni = " のつ(い)ナナイのナナ Ir: I = j _sm} 12 (d. 1-x) 12 0 - (3) 1 % (1) 1 /1

2: Experiment Name: False Position Method

Aim: An algorithm for finding roots which retains that prior estimate for which the function value has opposite right from the function value at the current bent estimate of the root. In this way, the method of Jahre position keeps the root bracked preudocode:

J = input ('Enter hon-linear equationn:') a = input ('Enter first quenn:'); b = input ('Enter second quenn:');if f(a) * f(b) < 0for i = 1:n a(f(b)) - b(f(a)) $c = \frac{a(f(b)) - b(f(a))}{f(b) - f(a)}$

1+ +(a) x+(c) <0 6 = 6 9 1009 -0010] elne it $f(b) \times f(c) \times f(c)$ ended soing took miotes doined for which the function value of disp (No root between given brackets); the terest the way, then [input] outling - alot to $f = \cos(x) - x;$ il-non instal !) tugai = t illiment (Furit rotari) ; (indoné paroses motari) ; (indoné paroses motari) ; (indoné paroses paroses d'indoné d'indoné paroses d'indoné · のう (の) も * (の) も も. [output]
((0)=) d-10,111

3: Experiment Name: Newton Raphson Method

Aim: The Newton-Raphnon method also known as Newton's method in a way to quickly find a good approximation for the root of a real valued function f(x) = 0. It uses the idea that a continuous and differentiable function can be approximated by a straight line tangent to it.

Prieudocode:

 $f = x^{2} + 2x + 3;$ df = 2x + 2; $e = 10^{4};$ $x_{0} = 0;$

it idt (x0) = 0Arraminages: 3 for 1=4:n x1 = x0 - (+(x0)/d+(x0)) fprintf (1x%d= %4f\n', i, x1) if abrox = xo) < e rousonino on Brown on bareak end only and rousonino siggs xo=x1: moitemet bouter lass the idea that a contin else ("Newton Rapshon Failed"): end · to ot for a Birmot

: oborobusing

Method:

3. Experiment Name: Secart Method

Aim: In numerical analysis; the secant method is a root finding algorithm that dubes a succession of roots of secant lines to better approximate a root of a function of the secant method can be thought of as a finite-difference approximation of Newton's method.

Preudocode:

cle;

xo = input ('Enternant's); galo

tol = input ('Enter tolarance:'); itr = input ('Enter Iteration;');

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x2=(x0 x + (xc1) - x1 x + (x0))/(+(x1)-+(x0)) it about (x2-x2) < tol ANTIPEA; gallaif Iron of all horteria K=1: p normanonua a madu & dout breaking solved of dead hoods. trether and bandloant of the bond xo=x1; no to Whenly sol mos 121 = 23 well to millomisonogo end Theudocode.; end if P==1 fprintf ('Solution is det at iteration %i', elne ((i box snatraj') hogai = fprintt (Norconvergent policion exist in the given number iteration end, motory J. Fugari . siti [Input] itetration = 10 x0=0.5 21 = 5 tolanance = 0.0001

5. Experiment Name: Fixed Point Method Aim: Fixed point method allows us to notive nonlinear one variable equations. We build an iterative method, using a requence which converges to a fixed point of g(x), this fixed point in the exact solution of f(x)=0.

Preudocode:

elc

$$q = Q(x)(2^{x+2})/5;$$

x = = input (Enter initial values: 1);

ton 1 = 1: n

it about 22-x0) < e

+ print ('x'.d=164.f\n'), i, xi).

break

end xo=x1; end

G: Experiment Name: Basic Grauns Elimination Method

Aim: The goal of Craunnian elimination in to get the matrix in row echelon forzm. If a matrix in in now echelon forzm. If a matrix in en now echelon forzm, that means that reading from left to right each now will ntant with at least one more zero term with at least one more zero term

Preudo code:

A = input ('Enter your coefficient matrix:');

B = input ('Enter Source vector:');

N = length (B);

X = zeron (N,1);

Aug = [AB]

for j = 1: N-1

Jon izj+1:N

Aug(i,:) = Aug(i,:) -m × Aug(j,:);

end

end Aug X(N) = Aug(N,N+1)/Aug(N,N);for R = N-1:1:1

X(K) = (Aug(K, N+1) - Aug(K, K+1:N)X X(K+1:N))/Aug(K,K);

end X

directional governor coefficient

(('inchern)

((अ) अन्द्रका = 14

X - Zerzen (N.L.)

GAJ = 50A

L-vib-bi-d-b

7. Experiment Name: Jacobi Iterration Method

Aim. In Neumenical linear algebra, the sacopi method in an iterative algorithm iterative algorithm determining the solutions of a strictly diagonally dominant system of linear equations. Each diagonal element is solved for, and an approximate value is plugged in, the pocess in then iterated until it converges.

Pseudocode.

A=input('Enter co-efficient matrix A:);

B=input('Enter nounce vector B:);

P=input('Enter initial guent vector:');

n=input('Enter no of Iterationn:');

e=input('Enter tolerance:');

N=length(B);

X=zeron(N,1);

for i = 4: N x(i)=(B(i)/A(i,i))-(A(i, [2:1-1,it1:N])xP([3:1-1,i of anotheles and printern); anii to condus to mimab y is mapail in francist prints ('Iteration non vid m'ij) i solo. Xaladalpro addo co poo last break, aspasyans di litiri end p-x; end; 120000000000000 And throspoilto - 00 A = input (taten a morphy sorruge astal') bugair a intow amount into wistary) - Jugarie 9