**Practical : 2**

**Code :**

#include<stdio.h>

#include<math.h>

float f1(float x){

return pow(x,3) + pow(x,2) + x + 10;

}

float df1(float x){

return 3\*pow(x,2) + 2\*x + 1;

}

float f2(float x){

return pow(x,4) - pow(x,3) + x - 1;

}

float df2(float x){

return 4\*pow(x,3) - 3\*pow(x,2) + 1;

}

int main (){

float x[100],diff = 0.0;

printf("Value of Xo : ");

scanf("%f",&x[0]);

printf("\n\tk\t\t\Xk\t\tf(Xk)");

int k = 0;

do {

x[k+1] = x[k]-f1(x[k])/df1(x[k]);

diff = x[k+1] - x[k] ;

printf("\n\t%d\t\t%.4f\t\t%.4f",k,x[k],f1(x[k]));

k++;

}

while(fabs(diff)>0.00001);

printf("\nThe real root of the equation is %.4f",x[k]);

float x1[100],diff1 = 0.0;

printf("\n\tValue of Xo : ");

scanf("%f",&x1[0]);

printf("\n\tk\t\t\Xk\t\tf(Xk)");

int t = 0;

do {

x1[t+1] = x1[t]-f2(x1[t])/df2(x1[t]);

diff1 = x1[t+1] - x1[t] ;

printf("\n\t%d\t\t%.4f\t\t%.4f",t,x1[t],f2(x1[t]));

t++;

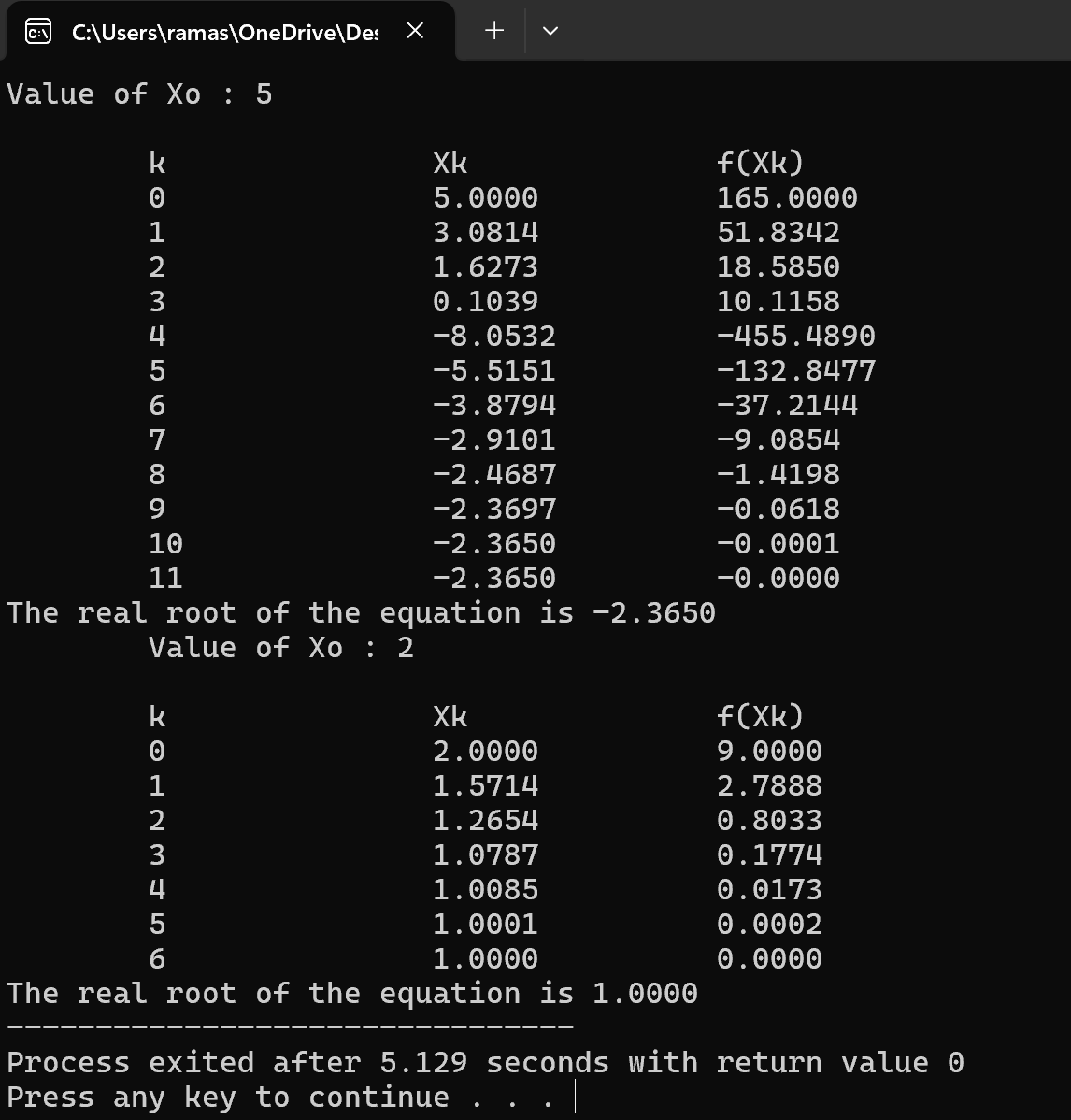
}

while(fabs(diff1)>0.00001);

printf("\nThe real root of the equation is %.4f",x1[t]);

}

**Output :**

****