

**fixedPoint.c**

```
1 #include<stdio.h>
2 #include<math.h>
3
4 #define g(x) 2/(1+x)
5
6 int main() {
7     float x0, x1, e, error;
8     int i = 0;
9
10    printf("f(x) = x^2 + x - 2 = 0\n");
11    printf("x = 2/(1 + x) = g(x)\n");
12    printf("Enter initial guess: ");
13    scanf("%f", &x0);
14    printf("Enter error precision: ");
15    scanf("%f", &error);
16
17    printf("\nSteps \t x0 \t x1=g(x) \t Error\n");
18    do {
19        x1 = g(x0);
20        e = fabs((x1 - x0) / x1);
21        i++;
22        printf("%d \t %.6f \t %.6f \t %.6f\n", i, x0, x1, e);
23        x0 = x1;
24    } while (e > error);
25
26    printf("\nRoot is: %.6f\n", x1);
27    return 0;
28}
29
```