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1: //C-Program for solving a Differential equation using Runge-Kutta 4th
   order method.
2:
3: int main(){
4:     //Variables
5:     int n, i; float x0, xm, y0, x1, y1, l, h, k1, k2, k3, k4;
6:
7:     //Inputs
8:     printf("Enter the number of iteration (n) : ");
9:     scanf("%d", &n);
10:    printf("Enter the initial point (x0) : ");
11:    scanf("%f", &x0);
12:    printf("Enter the last point (l) : ");
13:    scanf("%f", &l);
14:    printf("Enter the initial condition (y0) : ");
15:    scanf("%f", &y0);
16:
17:    //Calculation of no. of sub intervals.
18:    h = (l-x0)/n;
19:
20:    //Calculation using for loop.
21:    for(i=1; i<=n; i++){
22:        x1 = x0+h;
23:        xm = x0+h/2;
24:        k1 = -h*y0;
25:        k2 = -h*(y0+k1/2);
26:        k3 = -h*(y0+k2/2);
27:        k4 = -h*(y0+k3);
28:        y1 = y0+(1.0/6.0)*(k1+2*k2+2*k3+k4);
29:        //Output
30:        printf("x[%d] and y[%d] : %.6f %.6f\n", i, i, x1, y1);
31:        x0 = x1;
32:        y0 = y1;
33:    }
34: }

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