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1: // C-Program for solving a Differential equation using Runge-kutta 2nd
   order method.
2:
3: int main(){
4:     //Variables
5:     int n, i; float x0, y0, x1, y1, l, h, k1, k2;
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:        k1 = -h*y0;
24:        k2 = -h*(y0+k1);
25:        y1 = y0+0.5*(k1+k2);
26:        //Output
27:        printf("x[%d] and y[%d] : %.6f %.6f\n", i, i, x1, y1);
28:        x0 = x1;
29:        y0 = y1;
30:    }
31: }

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