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#include <stdio.h> // for formatted print & scan
#include <math.h> // for sqrt & M_PI

int main(void) // main function
{
    double k; printf("k = "); scanf("%lf", &k); // input k
    double m; printf("m = "); scanf("%lf", &m); // input m

    double omega = sqrt(k/m);
    double period = 2*M_PI/omega;
    double dt = 0.01*period; // integration time step

    double x = 0.0; // initialize variables
    double v = 1.0;
    double t = 0.0;

    while(t < 6*period)
    {
        double f = -k*x; // Hooke's Law
        double a = f/m; // Newton's law

        v += a*dt; // Euler-Cromer integration
        x += v*dt;

        t += dt; // increment time

        FILE *outputFileP = fopen("/Users/jlindner/Desktop/output.txt", "a");
        {
            fprintf(outputFileP, "%lf\t%lf\n", t, x);
        }
        fclose(outputFileP); // output data one line at a time
    }

    return 0; // normal exit
}
```