Excersize 5

There is the Octave (MATLABa) function heat_time.m that runs heat transfer (or diffusion) simulations over the square domain

>> heat_time

In line 642 it defines the simulation parameters

knot = simple_knot(16, 2);   %16 segments in knot vector, quadratic B-splines

dt = 0.0001;   % time step size

theta = 0;   % what numerical scheme we are going to use

 % (0 - explicit Euler, 1 - implicit Euler, 1/2 - Crank-Nicolson)

K = 100;   % the number of time steps

The simulation starts from the heat ball defined in init_state

(callig the initi_state_ball function)

For the explicit Euler simulation, please change the number of segments to your birthday
        and quadratic B-splines (e.g. I was born on October 12 so simple_knot(12,2))

Please find the maximum time step size where the simulation does not explode.

Please show pictures of simulation not exploding yet, and simulation that starts to explode