COLD COLLAPSE

1.- Generate a homogeneous sphere with N particles

I. Select a random number generator (tipically the generate homogeneous numbers between 0-1)
II. Generate coordinates x,y,z and that belong to a sphere with radius = 1 centered at the origin. Assume vx=vy=vz=0 and with the same mass = 1/Nparticles
III. Load the output into tipsy or other visualization tool. Measure the mass density profile with the function profile if you selected tipsy.
IV. Evolve the evolution with nbody1.f. You have to choose softening, number of particles,time step and total time of integration.
V. Study energy conservation and evolution of the system. Discuss. (Make plots)
VI. Parallelize the initial condition generator with OMP.