PS3B

N-BODY SIMULATION

We'll are working through the Princeton assignment at http://www.cs.princeton.edu/courses/archive/fall13/cos126/assignments/nbody.html .

Here in **Part B,** we are adding physics simulation and animation to the program created in Part A.

- Your `Body` class should be extended with mutators so that the physics simulation can modify the velocities of each object
- You should implement a method named `step` which takes a time parameter (`double seconds`) and moves the Body object given its internal velocity for that much time

- You should build a command-line app which accepts the same parameters as the one specified, and reads the universe file from `stdin`. Name your executable `NBody`, so you would run it with e.g:

```
./NBody 157788000.0 25000.0 < planets.txt
```

- After the animation stops, your program should output the final state of the universe in the same format as the input.
- Please submit all files needed to build your project: `.cpp`'s, any header files, and a `Makefile`
- Include the `planets.txt` file and all associated GIF images with your submission, in the proper directory structure as required by your code
- Submit a ps3b-readme.txt file with your work
- Make sure to do `make clean` before tarring up your code
- Submit your work in a directory named `ps3b`

The grader should be able to type the following to run your code:

```
make
./NBody 157788000.0 25000.0 < planets.txt
```

SUBMITTING

The executable file that your `Makefile` builds should be called `NBody`.

Submit using the submit utility as follows:

submit schakrab ps3b ps3b

Makefile: 2

(Makefile included; targets `all` and `clean` must exist; `all` should build `NBody`; must have dependencies correct)

ps3b-readme.txt: 2

Total: 12

Extra credits:

display elapsed time +1; create new universe (and describe in readme) +1; play sound file +1