L.A.G.’s Physics Engine

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**Idea**

To create a 2-D physics engine which can simulate simple kinematics using rectangles and circles where density, size, position, and force can be artificially applied. Other plans we are hoping to add may be some simple machines, general shapes for collisions, and maybe fluids.

**Menu System and more Details**

The main screen will have buttons leading to options, files, and start new system. Options will have a button leading to credits, which will just credit us and whoever helped, and on the actual options screen we’ll be able to edit music and sound volume, along with things such as FPS, and maybe a help manual. The files menu will have a list of systems you’ve made before you can select to start, each with their own name and such. There will be no limit to the number of systems that can be made, as there will be a page system. The new system page will lead to starting to create a completely blank system. This will start by being able to give the system a name, as everything else about the system will be editable once it’s made. All saved systems will be saved in a txt file that will hold information about the system, including the number of objects, then a number of lines describing each object. Finally comes the system, where objects can be edited and placed on the screen, along with options to edit the system itself, such as changing the scale, origin, seconds per second (how fast the system runs), and forces such as gravity. Each object will be selectable for you to see factors such as it’s position, velocity, acceleration, and kinetic energy. They can also be made to be immovable, into different materials where you can edit the coefficient of static and kinetic friction between these materials. These objects will also be able to rotate, and this will also affect how they interact with other objects.

**Usefulness**

The program could be used for testing how objects react where multiple calculations may be too tedious, it could be used to actually see how physics work, it could be used to check your physics homework in a tangible way, it could be used for the fun of trying to break the program.

**More Notes**

#EZ99InPhysicz #WeDontKnowWhatWereDoing

**Diagrams and Expected Visuals**