Potential Improvements

The engine is unstable (especially springs), this could be improved via a mix of several methods:

- Using *Runge-Kutta integration* instead of the currently implemented *Verlet integration*, as it is much more accurate
- *Warm starting*. Caching the impulses applied in the collision resolution phase, and using it in the next physics step to converge towards the desired solution faster (*typically works best with objects that aren't moving much between frames*).

Third Party Libraries

Library	Description	Version	License	Source Code
GLFW	An open-source windowing library	v3.3.6	zlib/libpng license	GitHub
Glad	OpenGL loader library	v0.1.34	N/A	GitHub
glm	Header only mathematics library	v0.9.9.8	Modified MIT License	GitHub
ImGui	Immediate-mode Graphical User Interface library	v1.87	MIT License	GitHub
STB	Single-file libraries for C/C++	N/A	MIT License	GitHub
termcolor	Header only library to output colored messages to the console	v2.0.0	BSD 3-Clause License	GitHub

References

Szauer, G. (2017). *Game Physics Cookbook.* Packt Publishing. Retrieved January 2022, from https://www.packtpub.com/product/game-physics-cookbook/9781787123663