Physics todo:

* Physics stuff (duh)
* Make modifying radius while creating shape actually modify the shape radiusd
* Add polygon shape collision (GJK)
* put transform in its own file
* fix friction (is broken, and circle never slows down)
* Add PointCast for polygon shape
* Make scrolling when creating polygon add polygon points
* Add button to pause and iterate through
* Check if inversetransformpoint actually works
* Make plane-polygon collision check if the two largest negative penetrations are flat enough to the object to be counted as 2 collision points
* Make slider automatically scale text and have a label
* Made toggle exist
* Make right click create shape and left click use a tool on shape (e.g Grab, launch, freeze, rotate, delete)
* Make tool buttons have blue outline and shape creators have green outlines, and put them on different rows
* Add UI for:
  + Modifying amount of points on polygon
  + Changing launch force
  + Make object static toggle
* Think about adding textured quads (for icons)
* Think about allowing transparency for triangle rendering (would require a different shader)
* Add quadtrees maybe?

Links to look at:

<https://gamedevelopment.tutsplus.com/tutorials/how-to-create-a-custom-2d-physics-engine-oriented-rigid-bodies--gamedev-8032>

\/ has the equation for impulse with torque and how it is derived

<https://en.wikipedia.org/wiki/Collision_response>

<https://erikonarheim.com/posts/understanding-collision-constraint-solvers/>

<https://www.youtube.com/watch?v=6rgiPrzqt9w>

[Collision Detection](http://www.jeffreythompson.org/collision-detection/line-circle.php)

[Extracting face/hit data after a GJK step - Math and Physics - GameDev.net](https://gamedev.net/forums/topic/693456-extracting-facehit-data-after-a-gjk-step/5362656/)

[PowerPoint Presentation](http://media.steampowered.com/apps/valve/2015/DirkGregorius_Contacts.pdf)

[computational geometry - How to resolve collisions of compound shapes using SAT? - Game Development Stack Exchange](https://gamedev.stackexchange.com/questions/17180/how-to-resolve-collisions-of-compound-shapes-using-sat)

[game physics - Calculate moment of inertia given an arbitrary convex 2D polygon - Stack Overflow](https://stackoverflow.com/questions/31106438/calculate-moment-of-inertia-given-an-arbitrary-convex-2d-polygon)

when making a game - <https://aie.instructure.com/courses/811/pages/Physics%20for%20Games%20-%20Making%20a%20Physics%20Game?titleize=0>