

Tutorial 14

- during this tutorial we will
 - understand the PGE API
 - create a small pinball game using PGE
 - understand how PGE integrates with PyGame

Using PGE to create a game

- full documentation about PGE is [available](http://floppsie.comp.glam.ac.uk/Glamorgan/gaius/pge/homepage.html) (<http://floppsie.comp.glam.ac.uk/Glamorgan/gaius/pge/homepage.html>)

Creating a pinball game using PGE

- start with the [breakout game source code](http://floppsie.comp.glam.ac.uk/Glamorgan/gaius/pge/example_games.html) (http://floppsie.comp.glam.ac.uk/Glamorgan/gaius/pge/example_games.html) and adapt it
- throw away all the blue boxes and associated callbacks
- see that the modified game still runs to completion

Pinball

- add some extra circles and maybe modify the triangles (smaller possibly)
- add a score so that every time the ball hits a triangle you gain +20 points
 - every time it hits a particular circle it gains +10 points
- every time the points increase by a 100 an extra life should be granted

Pinball

- allow the user to fire a new pinball when the old pinball is lost
 - decrease the life count as a pinball is released
- add a firing shoot for the pinball
 - allow the user to aim the ball with the mouse

Pinball flippers

- PGE is not capable of rotating objects, so you will have to think creatively to implement a way of "interfering" with the pinball
- you could adjust the x movement of the ball slightly if the left/right mouse button was pressed
- or you might introduce a fixed polygon (representing the flipper) as a paddle (aka breakout)
 - the polygon could be deleted and moved upon mouse movement
 - be careful and ensure that the polygon resides along $a, y = \text{constant}$, line
- what simple changes would you make to the API to create a simple flipper?

Conclusion

- we have
 - understood more about the PGE API
 - created a small pinball game using PGE
 - understood how PGE integrates with PyGame
- you might want to read around the subject by reading this paper [The Construction of a Predictive Collision 2D Game Engine](#) (`../..../Papers/paper21/ieee.pdf`)