Object Pooling

Object pooling was implemented by having the ghost entities loaded into a pool in which upon the spawning of new ghosts(such as within the center box) instead of spawning a new ghost entity it simply takes the most recently killed ghost or the ghost that is farthest of screen from the player(as the map has increased size due to the increase of ghosts) and moves the entity to the location of the new spawn. This would optimize the scene by not having to spawn new ghosts whenever one is killed meaning performance would be better due to less entities being active. This would also benefit the game as having more ghosts that are able to support a larger map.

Command Design Pattern

Command would be implemented by having the command pattern store the location of the last seven pellets that PacMan has eaten and upon hitting the spacebar would undo the eating of these pellets and move him to the location of the least recent of the 7 pellets. This would enhance gameplay by allowing PacMan some additional mobility due to the increased number of ghosts now in the scene at the cost of PacMan losing some pellets.

Management System(achievement system)

This system was implemented by storing player specific information such as pellets eaten, ghosts eaten or time survived in an array and having specific checks every set amount of ticks to see if achievement standards have been met. Upon being met a achievement notification will pop up within the UI and the user will be able to view the achievements on the main menu.