Final Project Proposals

Tower Defense

This is a game similar to **Balloon Tower Defense**. The player will be facing waves of attacks from enemies and has to defend his/her base by creating and upgrading his/her machines.

Insert hierarchy here
- Enemy
    - Enemy subclasses
        - Diff instance vars (health, damage)
- Tower
    - Tower subclasses
        - Diff instance vars(damage, cost)

Insert features here
1. different levels/mazes for the enemies to travel
   ● Each level is created in a .txt file using ASCII symbols
   ● The file is read by the program and interpreted by the program
   ● A visual representation is drawn in processing
2. Enemies use a path finder algorithm to traverse the maze
3. different defenses
   ● Tower superclass
   ● Tower types subclasses
4. Ability to upgrade defenses
   ● As towers get upgraded, they progress down a hierarchy of more specific subclasses

Concepts used
1. Queues for tower creation
   ● A queue of tower, FIFO, in order of creation
2. Priority Queue used to release enemies
   ● Each round begins by creating an assortment of random enemies based on a player's score
   ● These enemies are stored in a priority queue, where weaker ones are given higher priority
3. Recursion
   ● Each balloon will follow a recursion algorithm to find the path out of the maze, even if it means going through every possible path
   ● Emulate real world creatures, trial and error to find the correct path

Insert to-dos here
- Enemy superclass
- Tower superclass
- Subclasses of towers and enemies

Insert timeline here