Project 3 report

First of all , I just want to show the hierarchy of all the classes:

Actor:

* Penelope
* Wall
* Exit
* Pit
* LivingThings
  + Projectile
    - Flame
    - Vomit
  + Goodies
    - Vaccine Goodie
    - Gas Can Goodie
    - Landmine Goodie
  + Zombies
    - Dumb Zombie
    - Smart Zombie
  + Citizen
  + Landmine

1.

Actor’s public member functions:

1. virtual void doSomething() = 0

I define this pure virtual function in my base class: actor because all actors must be given a chance to do something during a tick, and different actors do different things.

1. virtual void goDie()

I define this virtual function in my base class: actor because I want to call this function only using the pointer that is pointing to actors. I make it virtual because for non-living things it will return directly, while for living things it will return the status of living.

1. virtual bool canBlock()

I define this virtual function because I want to know whether an actor can block people or zombies from moving there. I make it virtual because people can block while stuff like goodies or projectiles cannot block.

1. virtual bool canBeFired()

See if the actor can be effected by flame

1. virtual bool isLivingThings()

See if the actor can be set to dead state

1. virtual bool isAlive()

See if the actor is alive

1. virtual bool isDumbZombie()

See if the actor is a dumb zombie

1. virtual bool isSmartZombie()

See if the actor is a smart zombie

1. virtual bool isCitizen()

See if the actor is a citizen

1. virtual bool isWall()

See if the actor is a wall.

1. virtual bool getInfected()

See if the actor is infected.

2. I finished all functionalities.

3. N.A.

4.

Penelope:

I move it around. I try to walk into walls, zombies and citizens to make sure it cannot do that. I try to walk into pit to make sure it dies. I deploy a landmine and then step on it to make sure it dies and lost a life. I run into a zombie and try to get infected, see the infection count at the top of the screen increases. I deploy a landmine, pick up a gas goodie, and then fire the landmine when I stand next to the landmine to make sure I can be killed by the flame.

Wall:

I try controlling the Penelope to walk into a wall to make sure it is blocked. I observe other citizens and zombies to make sure they never walk into a wall.

Exit:

I lead the citizens to the exit and make sure they disappear after walking into an exit. After there are no more citizens, I walk into the exit to make sure I enter the next level.

Pit:

I walk into a pit to make sure the Penelope dies. I also put pits around the citizens and zombies to check whether they die after walking into the pit.

Flame:

I pickup a gas can goodie and then fire. Normaly there are 3 fire objects in front of my Penelope. I fire against the wall to make sure it is blocked. I fire to the citizens, zombies and goodies to make sure the fire can kill them. I fire towards an landmine to make sure it explodes and generate a 3 by 3 fire matrix.

Vomit:

I make Penelope walk to the zombie to induce to zombie to vomit. Then I see whether the infection count increases. I also lead citizens in front a zombie to make it get infected and see whether he will become a zombie after a while.

Vaccine Goodie:

I have the Penelope pick up a Vaccine Goodie. I make sure it disappears after being picked up, and the Vaccine at the top of the screen increases. Then I try to get infected and hit enter. I should see that the number of Vaccine decreases, and the infection counts go back to 0.

Landmine Goodie:

I have the Penelope pick up a Landmine Goodie. I make sure it disappears after being picked up, and the number of landmine at the top of the screen increases. Then I try to hit tab key to deploy a landmine. I should see that the number of Landmines decreases.

Gas Can Goodie

I have Penelope pick it up, make sure it disappear. I should see the number of flames increase at the top of the screen. I hit space key to fire, and I should see that the number of flames decreases.

Zombies:

I approach zombies and try to get infected. I kill dumb zombies to see if it drops vaccines.

Citizens:

I approach citizens and try to lead them to the exit. I make sure they follow me. For the citizens away from me, I observe their behaviors to make sure they are trying to get away from the zombies.

Landmine:

I try to step on it and see whether it explodes. Also I use flame to attack it and see whether it generates a 3 by 3 flame matrix. After that, a Pit should appear.