**GridWorld Test Review**

**Part I –** **Write the code**

You can assume the code you write will be called from an Actor object during its Act method. Any references made to “the Actor” are the Actor who is called the act method.

1. Set the direction of an Actor to face south.

setDirection(180);

setDirection(Location.SOUTH);

1. Count the number of empty Location surrounding the Actor.

int count = getGrid().getEmptyAdjacentLocations(getLocation());

1. Remove all Rocks from the grid.

ArrayList<Location> locs = getGrid().getOccupiedLocations();

for(Location loc: locs){

 Actor a = getGrid().get(loc);

 if(a instanceof Rock) a.removeSelfFromGrid();

1. If the Location NE of the Actor is on the Grid, add an orange Flower there.

Location loc = getLocation().getAdjacentLocation(Location.NORTHEAST);

if(getGrid().isValid(loc) && getGrid().get(loc) == null)

 getGrid().put(loc, new Flower(Color.ORANGE)

1. Find all adjacent Critters and change their color to match the Actor.

ArrayList<Actor> actors = getGrid().getNeighbors(getLocation());

for(int i = 0; i < actors.size(); i++)

 Actor a = actors.get(i);

 if(a instanceof Critter) setColor(getColor());

1. Add a Critter to the Location behind the Actor

Location loc = getLocation().getAdjacentLocation( getDirection() + 180);

if(getGrid().isValid(loc) && getGrid().get(loc) == null)

 getGrid().put(loc, new Critter() )

1. Find all the Bugs in the same row as the Actor and make them face East.

for(int c = 0; c < 10; c++){

 Location loc = new Location(getLocation().getRow(), c);

Actor a = getGrid().get(loc);

 if(a instanceof Bug && c != getCol())

 a.removeSelfFromGrid();

**Part II – Design an Actor**

This part will have you writing the code on paper.

TeleportBug – The TeleportBug, in its constructor will receive the direction it is facing(0, 45, 90). If the received direction isn’t divisible by 45, the TeleportBug will face north. The TeleportBug never changes its direction. When it cannot move ahead, due to another object, or hitting the edge of the Grid, it will teleport to a new Location that is empty, within the grid, the space that it teleports to, must have an empty space in front of it. In other words, the TeleportBug won’t teleport to an empty space from which it cannot move forward. So a TeleportBug shouldn’t teleport two steps in a row.

Write this entire class below: