Cardy Wei

Pd.1

Case Study Part 3

1.

(a) Turn

(b)Turn

(c)Turn

(d)Turn or remove the actor

(e)Turn or remove the jumper

(f)Can the jumper jump over other actors or jumpers instead of just rocks?

2.

(a) Actor

(b)Bug class

(c)Yes, to be able to change the default color of the Jumper

(d)Act

(e) A method to check if the jumper can jump (jumpable) and a method to make the jumper jump (jump).

(f)Place the objects around the jumper as obstacles and put the jumper at the edge of the board.

3.

Jumper:

import info.gridworld.actor.Actor;

import info.gridworld.actor.Flower;

import info.gridworld.actor.Rock;

import info.gridworld.grid.Grid;

import info.gridworld.grid.Location;

import java.awt.Color;

public class Jumper extends Actor{

public Jumper(){

setColor(Color.PINK);

}

public Jumper(Color JumperColor){

setColor(JumperColor);

}

public void act(){

if (canJump())

jump();

else

turn();

}

public void turn(){

setDirection(getDirection() + Location.HALF\_RIGHT);

}

public void jump(){

Grid<Actor> gr = getGrid();

if (gr == null)

return;

Location loc = getLocation();

Location next = loc.getAdjacentLocation(getDirection());

Location twoAway = next.getAdjacentLocation(getDirection());

if (gr.isValid(twoAway))

moveTo(twoAway);

else

removeSelfFromGrid();

}

public boolean canJump() {

Grid<Actor> gr = getGrid();

if (gr == null)

return false;

Location loc = getLocation();

Location next = loc.getAdjacentLocation(getDirection());

if (!gr.isValid(next))

return false;

Actor neighbor = gr.get(next);

if (!((neighbor == null) || (neighbor instanceof Flower) || (neighbor instanceof Rock)))

return false;

Location twoAway = next.getAdjacentLocation(getDirection());

if (!gr.isValid(twoAway))

return false;

neighbor = gr.get(twoAway);

return (neighbor == null) || (neighbor instanceof Flower);

}

}

import info.gridworld.actor.ActorWorld;

import info.gridworld.actor.Bug;

import info.gridworld.actor.Rock;

import info.gridworld.actor.Flower;

JumpRunner:

public class JumperRunner{

public static void main(String[] args){

ActorWorld another = new ActorWorld();

another.add(new Jumper());

another.add(new Rock());

another.add(new Bug());

another.add(new Flower());

another.show();

}

}