Set 7

1. What methods are implemented in Critter?

Answer:

public void act()

public ArrayList<Actor> getActors()

public void processActors(ArrayList<Actor> actors)

public ArrayList<Location> getMoveLocations()

public Location selectMoveLocation(ArrayList<Location> locs)

public void makeMove(Location loc)

2. What are the five basic actions common to all critters when they act?

Answer:getActors(),processActors(),getMoveLocations(),selectMoveLocation() and makeMove()

3. Should subclasses of Critter override the getActors method? Explain.

Answer: Yes, when we want our own critter move differently from the Critter, we can override the getActors method.

4. Describe the way that a critter could process actors.

Answer:
It could eat all of the actors in its list, it could makethem all change colors, or it could ask them all to move.

5. What three methods must be invoked to make a critter move? Explain each of these methods.

Answer: public ArrayList<Location> getMoveLocations()

public Location selectMoveLocation(ArrayList<Location> locs) public void makeMove(Location loc)

getMoveLocations method
returns a list of all the empty adjacent locations around the critter.

the selectMoveLocation

randomly chooses one of the locations and returns that location. If there are no emp
ty locations to choose from, selectMoveLocation returns the current location of the c
ritter.

the makeMove method

and the critter is moved to the new location

6. Why is there no Critter constructor?

Answer:
Critter extends Actor. The Actor class has a default constructor. If you do not create a
constructor in a class, Java will write a default constructor for you. The Critter default
constructor that Java provides will call super(), which calls the Actor default construc
tor.

SET8

1. Why does act cause a ChameleonCritter to act differently from a Critter even though ChameleonCritter does not override act?
Answer:
The act method calls getActors, processActors, getMoveLocations, selectMoveLocation, and mak
eMove. The ChameleonCritter class overrides the processActors and makeMove
methods. Therefore, calling act for a ChameleonCritter will produce different behavior than callin
g act for a Critter.

2. Why does the makeMove method of ChameleonCritter call super.makeMove?
Answer:
it calls super.makeMove of the Critter class to actually move to the new location.
3. How would you make the ChameleonCritter drop flowers in its old location when it moves?
Answer:
public void makeMove(Location loc)

```
{
  Location oldLoc = getLocation();
  setDirection(getLocation().getDirectionToward(loc));
  super.makeMove(loc);
  if(!oldLoc.equals(loc)) //don't replace yourself if you did not move
  {
    Flower flo = new Flower(getColor());
    flo.putSelfInGrid(getGrid(), oldLoc);
  }
}
```

4. Why doesn't ChameleonCritter override the getActors method?
Answer:
Since ChameleonCritter does not define a new behavior for getActors, it does not need to overri
de this method.

5. Which class contains the getLocation method?
Answer: Actor class

6. How can a Critter access its own grid?
Answer: getGrid()

SET9

1. Why doesn't CrabCritter override the processActors method?
Answer: There is no need to override this method

2. Describe the process a CrabCritter uses to find and eat other actors. Does it always eat all neighboring actors? Explain.
Answer:
The CrabCritter eats the actors in front of it and its rightfront and leftfront of it.

3. Why is the getLocationsInDirections method used in CrabCritter?

Answer:
To get the Locations which there are actors in the certain directions.

4. If a CrabCritter has location (3, 4) and faces south, what are the possible locations for actors that are returned by a call to the getActors method?
Answer:
(4,3), (4,4), and (4,5)

5. What are the similarities and differences between the movements of a CrabCritter and a Critter?

6. How does a CrabCritter determine when it turns instead of moving?
Answer: If the parameter loc in makeMove is equal to the crab critter’s current location, it turns instead of moving.

7. Why don't the CrabCritter objects eat each other?
Answer:
A crab critter only removes actors that are not rocks and not critters.