

CSE 142 Final Cheat Sheet

Math Method	Description
Math.abs(<i>value</i>)	absolute value
Math.min(<i>v1</i> , <i>v2</i>)	smaller of two values
Math.max(<i>v1</i> , <i>v2</i>)	larger of two values
Math.round(<i>value</i>)	nearest whole number
Math.pow(<i>b</i> , <i>e</i>)	b to the e power

Random Method	Description
nextInt(<i>max</i>)	random integer from 0 to <i>max</i> -1

Construction Examples

```
int[] data = new int[10];
```

```
Random r = new Random();
```

Types: ArrayList<String>, ArrayList<Integer>

String Method	Description
contains(<i>str</i>)	true if this string contains the other's characters inside it
endsWith(<i>str</i>), startsWith(<i>str</i>)	true if this string starts/ends with the other's characters
equals(<i>str</i>)	true if this string is the same as <i>str</i>
equalsIgnoreCase(<i>str</i>)	true if this string is the same as <i>str</i> , ignoring capitalization
indexOf(<i>str</i>)	index in this string where given string begins (-1 if not found)
length()	number of characters in this string
substring(<i>i</i> , <i>j</i>)	characters in this string from index <i>i</i> (inclusive) to <i>j</i> (exclusive)
toLowerCase(), toUpperCase()	a new string with all lowercase or uppercase letters
charAt(<i>i</i>)	returns char at index <i>i</i>

Scanner Method	Description
nextInt(), hasNextInt()	read/return token as <code>int</code> and test if reading will succeed
next(), hasNext()	read/return token as <code>String</code> and test if reading will succeed
nextDouble(), hasNextDouble()	read/return token as <code>double</code> and test if reading will succeed
nextLine(), hasNextLine()	read/return line as <code>String</code> and test if reading will succeed

ArrayList Method	Description
add(<i>value</i>)	appends value at end of list
add(<i>index</i> , <i>value</i>)	inserts given value at given index, shifting subsequent values right
clear()	removes all elements of the list
get(<i>index</i>)	returns the value at given index
remove(<i>index</i>)	removes/returns value at given index, shifting subsequent values left
set(<i>index</i> , <i>value</i>)	replaces value at given index with given value
size()	returns the number of elements in list

Critter classes

```
public class name extends Critter {
    fields/constructor

    public Color getColor() {
        statement(s) that return a Color (e.g., Color.RED, Color.BLUE, Color.GREEN)
    }

    public Action getMove(CritterInfo info) {
        statement(s) that return Action.INFECT, Action.HOP, Action.RIGHT, OR Action.LEFT
    }

    public String toString() {
        statement(s) that return a String;
    }
}
```

CritterInfo Method	Description
getFront(), getBack(), getLeft(), getRight()	returns one of Neighbor.WALL, Neighbor.EMPTY, Neighbor.SAME, Neighbor.OTHER
getDirection()	returns one of Direction.NORTH, Direction.SOUTH, Direction.EAST, Direction.WEST