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\* Bug.java

\* Models a bug moving along a horizontal line

\* **@author** Hunter Damron

\* Honor code: This is my own work

\* Purpose: Bug class moves horizontally at 1 unit per second and can turn

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**public** **class** **Bug** {

/\*

\* Instance variables

\*/

**private** **int** position;

**private** **int** direction; //Positive 1 for positive direction

/\*

\* Construct a Bug facing to the right at initial position.

\*/

**public** **Bug**(**int** initialPosition) {

position = initialPosition;

direction = 1;

}

/\*\*

\* The bug turns to face the opposite direction but remains in the same place

\*/

**public** **void** **turn**() {

direction = direction \* -1;

}

/\*\*

\* The bug moves one unit in the direction that it is facing

\*/

**public** **void** **move**() {

position = position + direction;

}

/\*\*

\* returns the position where the bug is currently positioned

\*/

**public** **int** **getPosition**(){

**return** position;

}

}

/\*\*

\* BugTester.java

\* **@author** Hunter Damron

\* Honor Code: This work is mine and mine only

\* Purpose: tests Bug class

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**import** java.util.Random;

**public** **class** **BugTester** {

**public** **static** **void** **main**(**String**[] args){

**Bug** **bugsy** = **new** Bug(3);

**Random** **gen** = **new** Random();

**int** **next**, **end** = 20;

**System**.***out***.println("Bugsy starts at " + bugsy.getPosition());

**while**(end > 0) {

next = gen.nextInt(5);

**if**(next == 0){

bugsy.turn();

**System**.***out***.println("Bugsy made a turn at " + bugsy.getPosition());

}

**else** {

bugsy.move();

**System**.***out***.print(". ");

}

end--;

}

**System**.***out***.println("Bugsy ended at " + bugsy.getPosition());

}

**public** **static** **void** **othermain**(**String**[] args) { //Kept for simpler testing purposes only

**Bug** **bugsy** = **new** Bug(3);

**System**.***out***.println("Bugsy starts at " + bugsy.getPosition());

bugsy.move();bugsy.move();bugsy.move();bugsy.move();bugsy.turn();

bugsy.move();bugsy.move();bugsy.turn();bugsy.move();bugsy.move();

**System**.***out***.println("Bugsy is now at " + bugsy.getPosition() + "; Should be at 7");

}

}