This is the bug class:  
**1 /\*  
 2 \* Programer --> Akhil Devarapalli  
 3 \* 10/7/2020  
 4 \* On my honor I have neither given or recived unauthorized help  
 5 \*/  
 6** publicclassBug  
 **7** {  
 **8 //instacne variable  
 9** privateintposition**;  
10** privateintdirection**;  
11   
12 //constructor methods  
13** publicBug**(**intInitialposition**,** intInitialdirection**)  
14** {  
**15** position **=** Initialposition**;  
16** direction **=** Initialdirection**;  
17** }  
**18   
19 //Defualt values  
20** publicBug**()  
21** {  
**22** position **=** 0**;  
23** direction **=** 1**;  
24** }  
**25   
26 //Accessor methods  
27** publicintGetPosition**()  
28** {  
**29** returnposition**;  
30** }  
**31   
32** publicintGetDirection**()  
33** {  
**34** returndirection**;  
35** }  
**36   
37 //mutator methods  
38** publicvoidsetPosition**(**intnewPosition**)**{  
**39** position **=** newPosition**;  
40** }  
**41   
42** publicvoidmoveOne**()  
43** {  
**44** if **(**direction **>** 0**)  
45** {  
**46** position **+=** 1**;  
47** }else{  
**48** position **-=** 1**;  
49** }  
**50** }  
**51   
52** publicvoidTurnAround**()  
53** {  
**54** direction **\*= -**1**;  
55** }  
**56** }

This is the BugTester class and its output

**1 /\*  
 2 \* Programmer --> Akhil Devarapalli  
 3 \* 10/7/2020  
 4 \* On my honor I have neither given or recived unauthorized help  
 5 \*/  
 6** importjava**.**util**.**Scanner**;  
 7** publicclassBugTester  
 **8** {  
 **9 /\*  
10 Items going to be tested  
11 - moveOne()  
12 - Bug with parameters  
13 - Bug without parameters  
14 - Turnaround  
15 - Get position  
16 - Get direction  
17 - Set new position  
18 \*/  
19** publicstaticvoidmain**(**String[]args**)  
20** {  
**21 //Get input to pass into a new bug class  
22** intStartPos**;  
23** intStartDirection**;  
24** System**.**out**.**println**("Input a starting postion from -100 to 100 and -1 for it start facing left and 1 for it to start facing right");  
25** Scannerscan **=** newScanner**(**System**.**in**);  
26** StartPos **=** scan**.**nextInt**();  
27** StartDirection **=** scan**.**nextInt**();  
28** BugladyBug **=** newBug**(**StartPos**,** StartDirection**);  
29 // We are going to verify if the input that we passed into ladyBug works correctly  
30 //The output should be the things we inputed  
31** System**.**out**.**println**(" The position is " +** ladyBug**.**GetPosition**() + " The direction is " +** ladyBug**.**GetDirection**());  
32 /\*  
33 \* Make the bug move one return value  
34 \* Turn it around and move one and return value  
35 \* Call moveOne 3 times and return values  
36 \* Call TurnAround and call moveOne again  
37 \* Have it return value  
38 \* The code below makes sure the moveOne, TurnAround, GetPosition, GetDirection works. They do  
39 \*/   
40** ladyBug**.**moveOne**();  
41** System**.**out**.**println**(**ladyBug**.**GetPosition**());  
42** ladyBug**.**TurnAround**();  
43** for **(**inti **=** 1**;** i **<=** 3**;** i**++)**{  
**44** ladyBug**.**moveOne**();  
45** }  
**46** System**.**out**.**println**(**ladyBug**.**GetPosition**());  
47** ladyBug**.**TurnAround**();  
48** ladyBug**.**moveOne**();  
49** System**.**out**.**println**("The Position is " +** ladyBug**.**GetPosition**() + " The Direction is " +** ladyBug**.**GetDirection**());  
50 /\*  
51 \* Uses the same lady bug class but this one makes sure that the SetPostion mutator method works  
52 \* We will start on ladyBugs last poistion and try to move it to 50 and print position.  
53 \* When we get position it should return 50  
54 \*/   
55** ladyBug**.**setPosition**(**50**);  
56** System**.**out**.**println**("The Position is " +** ladyBug**.**GetPosition**() + " The Direction is " +** ladyBug**.**GetDirection**());  
57 /\*  
58 We are going to do what we did above, but this time we will create a Bug class and not pass in any parameters  
59 We will create Bug with no values and make it go three units, turn around and go two units   
60 We will print direction and postion, the output should be "The postion is 1 the direction is -1"  
61 ladyBug2 will be initlized with defualt values of position = 0 and direction 1  
62 \*/  
63** BugladyBug2 **=** newBug**();  
64** for **(**inti **=** 1**;** i **<=**3**;** i**++)  
65** {  
**66** ladyBug2**.**moveOne**();  
67** }  
**68** ladyBug2**.**TurnAround**();  
69** for**(**inti **=** 1**;** i **<=** 2**;** i**++)  
70** {  
**71** ladyBug2**.**moveOne**();  
72** }  
**73** System**.**out**.**println**("The Position of bug 2 is " +** ladyBug2**.**GetPosition**() + " The Direction of bug 2 is " +** ladyBug2**.**GetDirection**());  
74 /\*  
75 We are going to test SetPostion to 50  
76 The final output here should be "The Position of bug 2 is 50 The Direction of bug 2 is -1"  
77 \*/  
78** ladyBug2**.**setPosition**(**50**);  
79** System**.**out**.**println**("The Position of bug 2 is " +** ladyBug2**.**GetPosition**() + " The Direction of bug 2 is " +** ladyBug2**.**GetDirection**());  
80** }  
**81** }

Output:  
MM«M ----jGRASP exec: java BugTester  
MM§MInput a starting postion from -100 to 100 and -1 for it start facing left and 1 for it to start facing right  
¼¼§M50 -1  
MM§M The position is 50 The direction is -1  
MM§M49  
MM§M52  
MM§MThe Position is 51 The Direction is -1  
MM§MThe Position is 50 The Direction is -1  
MM§MThe Position of bug 2 is 1 The Direction of bug 2 is -1  
MM§MThe Position of bug 2 is 50 The Direction of bug 2 is -1  
MM§M  
MM©M ----jGRASP: operation complete.