# Bug Resolution Report

## Changes Made:

* The roll() method in the Dice class was changed to set the new random values to the stored value field.
* The roll() method in the Dice class was made to return null instead of a DiceValue.
* The getRandom method in the dice value class was changed to allow random generation of the full range of possible values.

## Automated test output:

------------- Standard Output ---------------

Bug 1

… //Bug 1 test output removed

Bug 2

… //Bug 2 test output removed

Bug 3

Start Game 0:

122 turns later.

End Game 0: Fred now has balance 0

Start Game 1:

168 turns later.

End Game 1: Fred now has balance 0

Start Game 2:

253 turns later.

End Game 2: Fred now has balance 200

…

… //The execution of the main logic repeats 10000 times, making checks every 1000 times

…

Win count = 92964, Lose Count = 127864, 0.42 …

Win count = 92366, Lose Count = 126645, 0.42 …

Win count = 90421, Lose Count = 124043, 0.42 …

Win count = 90350, Lose Count = 124196, 0.42 …

Win count = 89455, Lose Count = 123579, 0.42 …

Win count = 94462, Lose Count = 129530, 0.42 …

Win count = 89775, Lose Count = 123504, 0.42 …

Win count = 90353, Lose Count = 123829, 0.42 …

Win count = 91642, Lose Count = 125913, 0.42 …

Win count = 87010, Lose Count = 120153, 0.42

Tests run: 3, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 2.61 sec

## User Test Case Results

## Script 1: Bug 3 replication

### Script Description

* Reproduces a bug that has been reported, wherein the odds in the game do not appear to be correct.

### Setup

* None

### Teardown

* None

### Script Steps

| **Step #** | **Test Action** | **Expected Results** | **Pass/ Fail** |
| --- | --- | --- | --- |
| 1 | Run the game via the main class. | Some number of games occur. | Pass |
| 2 | Look at the end of the output, for a line that shows the number of games won and lost, as well as what fraction of total games were run. | A line matching that description is found. | Pass |
| 3 | Read the fraction. Repeat steps 1 through 3 at least 6 times. | Correct behavior: The number at the end of the line should be 0.42 each time, with some margin of error allowed. Bugged behavior: The number at the end of the line varies significantly across runs of the program, deviating significantly from 0.42 for at least one run of the program. | Pass |

### Test Execution

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Date/Time | Tester | Test ID | Test Phase | Status |
| 11/10/2017 3:32pm | Ryan Smith | Test 3-1 |  | Bug present |
| 11/10/2017 9:20pm | Ryan Smith | Test 3-2 |  | Pass |