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Bug 1: Incorrect Payout on win

Following is the screenshot of the output of the junit test for the payout test. So to carry out his test, I created a player “Fred” with starting balance 100 and bet 5 on “CROWN”.

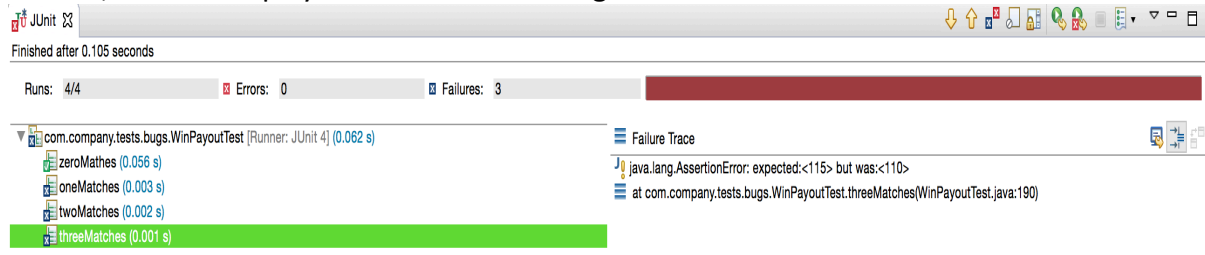


Fig: screenshot showing the failure on one match

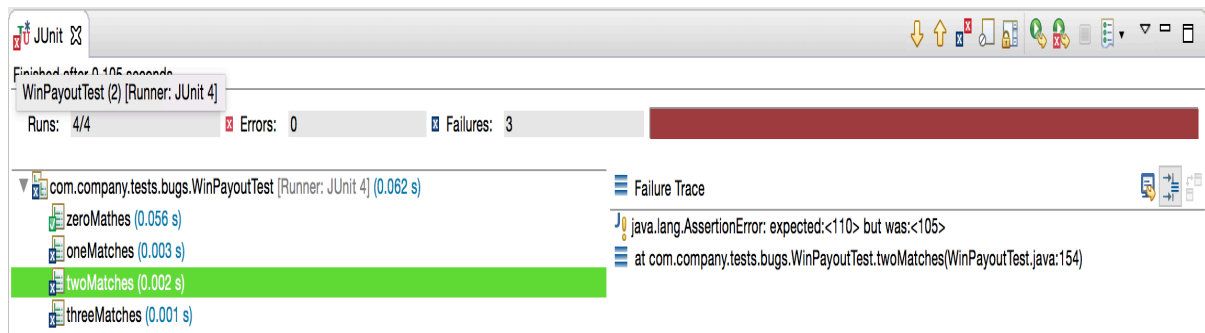


Fig : screenshot showing the failure on two matches

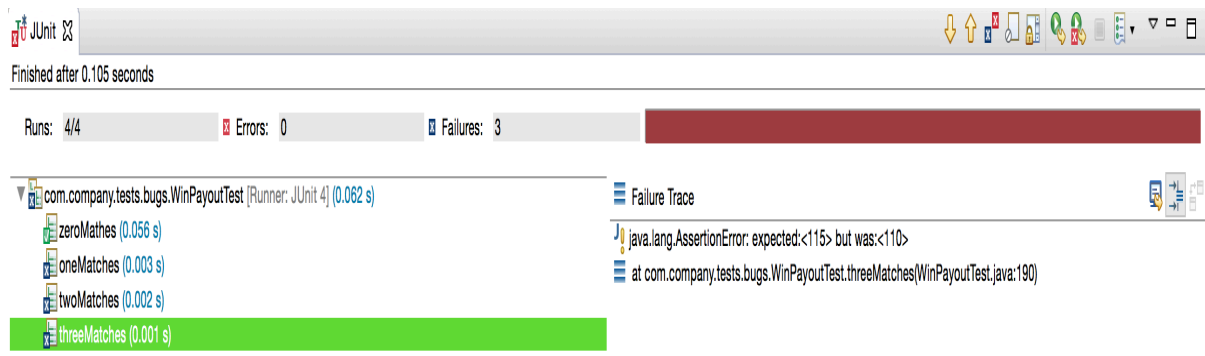


Fig : screenshot showing the failure on two matches

The above screenshot shows there is a failure on one match, two match and three match while one match passes because we have only bug on returning the bet which is only done whilst winning.

BUG 2: Player cannot reach betting limit

This junit test tests the ending balance of the player. As per the rule of the game the game ends only when the balance of the player is less than the bet balance which is 5. Even if the balance of the player is equivalent to the bet balance then game shouldn't end.

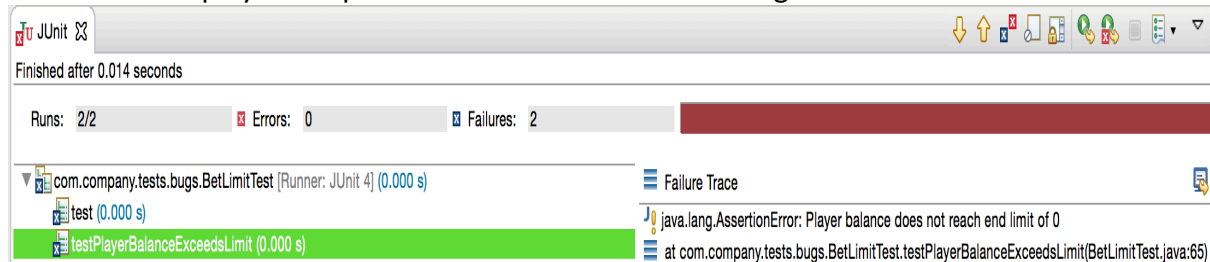


Fig: screenshot confirming the balance isn't 0

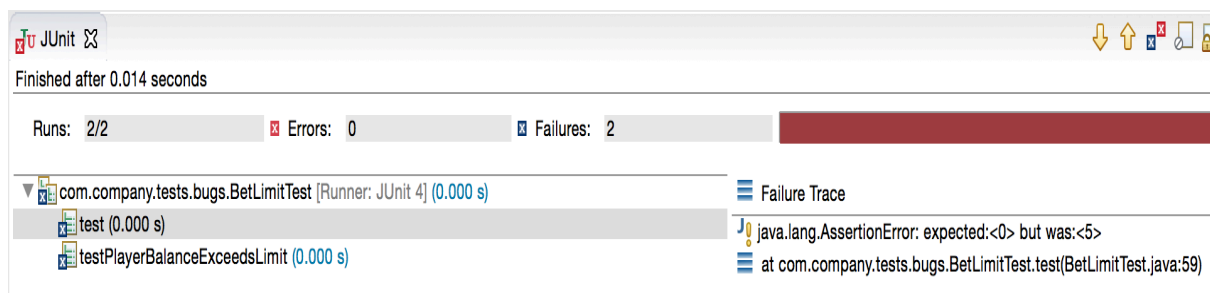


Fig: screenshot showing the failure of the test.

In the above screenshot we can see that the expected result was 0 but the actual result was 5. This is why the unit test has failed.

Bug 3: Game overall odds

This test tests the fact if the win ratio is approx. 0.42. As per the rule of the game the win ratio should only be in between 0.42 to 0.45. Following is the result of the test.

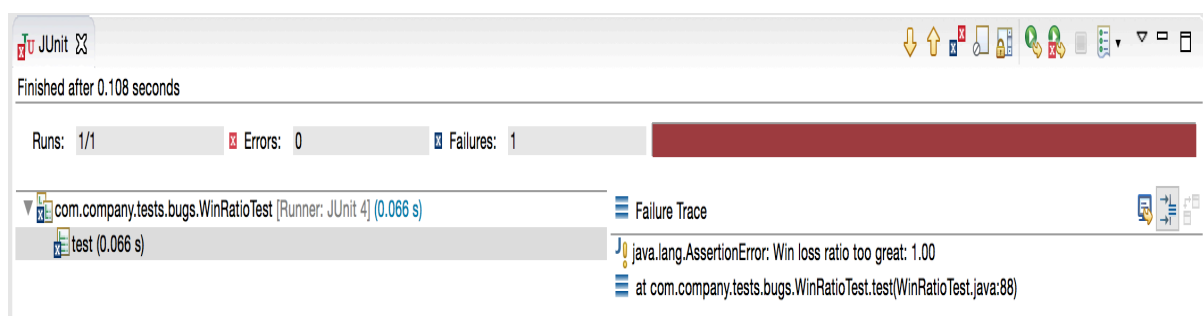


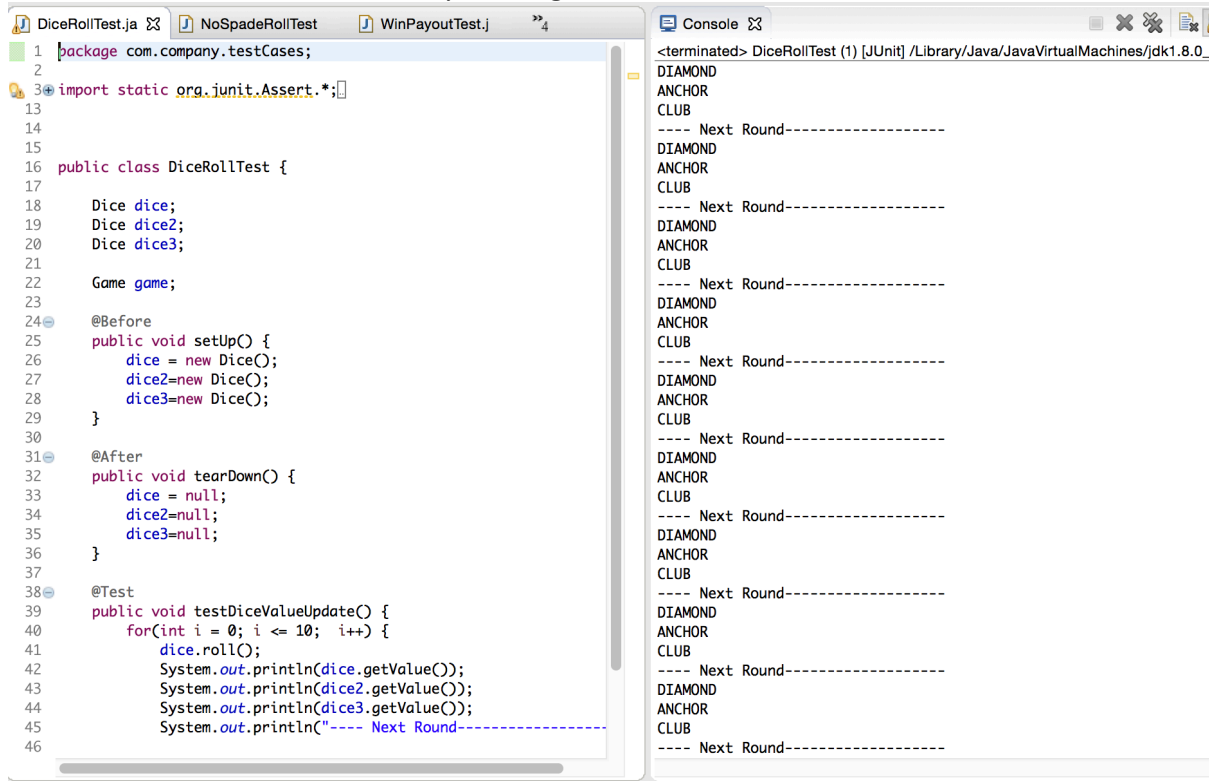
Fig: Screenshot showing the failure of the test.

Above screen shot shows the failure of the test. The failure trace shows the win loss ratio was too great than it was supposed to be. This is why the test has failed.

Bug 4: Dice seem to always roll the same after first roll.

This test is used to test the roll of dice. This test looks into the bug that seems to roll the same after the first roll. In this automated test I have used System.out.Print procedure to

look into the bug. I have simply printed the dice roll for first 10 rounds using the unit test and looked in the console to verify the bug.



The screenshot shows an IDE with two panes. The left pane displays a Java file named `DiceRollTest.java` with the following code:

```
1 package com.company.testCases;
2
3 import static org.junit.Assert.*;
4
5
6
7
8
9
10
11
12
13
14
15
16 public class DiceRollTest {
17
18     Dice dice;
19     Dice dice2;
20     Dice dice3;
21
22     Game game;
23
24     @Before
25     public void setUp() {
26         dice = new Dice();
27         dice2 = new Dice();
28         dice3 = new Dice();
29     }
30
31     @After
32     public void tearDown() {
33         dice = null;
34         dice2 = null;
35         dice3 = null;
36     }
37
38     @Test
39     public void testDiceValueUpdate() {
40         for(int i = 0; i <= 10; i++) {
41             dice.roll();
42             System.out.println(dice.getValue());
43             System.out.println(dice2.getValue());
44             System.out.println(dice3.getValue());
45             System.out.println("---- Next Round-----");
46         }
47     }
48 }
```

The right pane shows the console output for the test run:

```
<terminated> DiceRollTest (1) [JUnit] /Library/Java/JavaVirtualMachines/jdk1.8.0_
DIAMOND
ANCHOR
CLUB
---- Next Round-----
DIAMOND
ANCHOR
CLUB
---- Next Round-----
DIAMOND
ANCHOR
CLUB
---- Next Round-----
DIAMOND
ANCHOR
CLUB
---- Next Round-----
DIAMOND
ANCHOR
CLUB
---- Next Round-----
DIAMOND
ANCHOR
CLUB
---- Next Round-----
DIAMOND
ANCHOR
CLUB
---- Next Round-----
DIAMOND
ANCHOR
CLUB
---- Next Round-----
DIAMOND
ANCHOR
CLUB
---- Next Round-----
DIAMOND
ANCHOR
CLUB
---- Next Round-----
```

In the above screen shot, we can see that every round of the play has the same dice roll as the first one.

Bug 5: “SPADE” doesn’t appear in roll.

This test tests for the bug that “Spade” doesn’t occur in the values of the dice rolled. The program tests in such a way that it fails if the dice roll results doesn’t contain “Spade”.

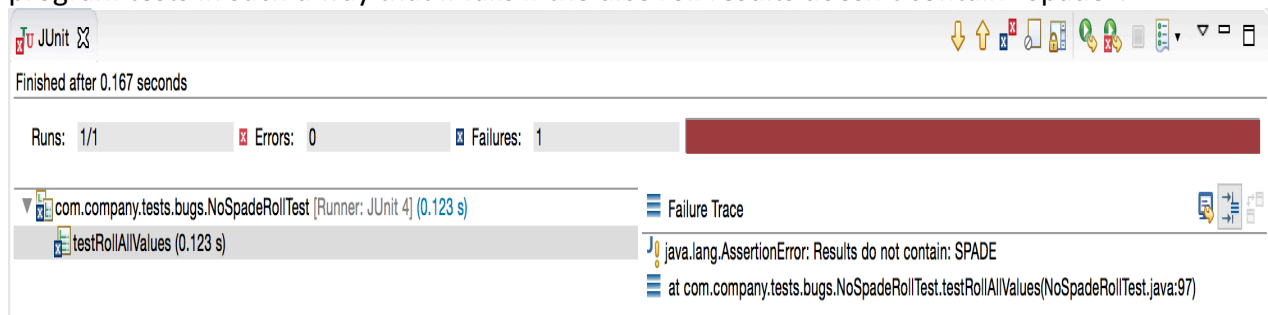


Fig: Screenshot showing the failure of the test.

The above screen shot shows that the test has failed, meaning that the dice roll values doesn’t contain the “Spade”. The “Failure Trace” section also shows the assertion error that “Result do not contain “Spade””.