Debugging Log Book

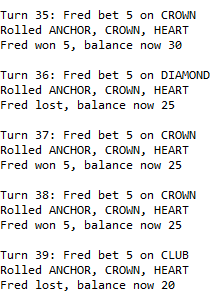
# Bug 1

## Hypothesis:

The program appears to be running correctly and as it should as the payouts are matching what is outlined in the rules, however, it could be that the user is becoming confused as the system does not advise the user on the balance change when they make their bet. This leaves the user feeling as though they are not winning anything.

## Evidence to support the hypothesis

As shown below Fred bets 5 on Crown and won 5 credits which made his balance 30, he then bets another 5 on Diamond and loses which changes his balance to 25, this shows that the bet is successfully being taken for the bet as he did not win anything. In the next game Fred bets 5 credits on Crown and wins 5 and his balance stays at 25. This indicates that the application is working correctly as Fred has received the 5 credits as per the rules.



## Tracing

In order to prove my hypothesis I created 4 tests in JUnit under the test class Bug1Test, each test was run 3 times. The Tests were as follows:

* Test 1: Test that 1 match repays the betted amount as per the game rules
* Test 2: Test that 2 matches repays 2 times the betted amount as per the game rules
* Test 3: Test that 3 matches repays 3 times the betted amount as per the game rules
* Test 4: Test that 0 matches does not repay the betted amount as per the game rules.

The test outputs are:

**Test 1:**

Test 1 - Single Match

Start Game 0:

Fred starts with balance 100, limit 0

Turn 1: Fred bet 5 on CROWN

Rolled CROWN, ANCHOR, HEART

Fred won 5, balance now 100

Test 1 - Single Match

Start Game 1:

Fred starts with balance 100, limit 0

Turn 1: Fred bet 5 on CROWN

Rolled CROWN, ANCHOR, HEART

Fred won 5, balance now 100

Test 1 - Single Match

Start Game 2:

Fred starts with balance 100, limit 0

Turn 1: Fred bet 5 on CROWN

Rolled CROWN, ANCHOR, HEART

Fred won 5, balance now 100

**Test 2:**

Test 2 - Double Match

Start Game 0:

Fred starts with balance 100, limit 0

Turn 1: Fred bet 5 on CROWN

Rolled CROWN, CROWN, HEART

Fred won 10, balance now 105

Test 2 - Double Match

Start Game 1:

Fred starts with balance 105, limit 0

Turn 1: Fred bet 5 on CROWN

Rolled CROWN, CROWN, HEART

Fred won 10, balance now 110

Test 2 - Double Match

Start Game 2:

Fred starts with balance 110, limit 0

Turn 1: Fred bet 5 on CROWN

Rolled CROWN, CROWN, HEART

Fred won 10, balance now 115

**Test 3:**

Test 3 - Triple Match

Start Game 0:

Fred starts with balance 100, limit 0

Turn 1: Fred bet 5 on CROWN

Rolled CROWN, CROWN, CROWN

Fred won 15, balance now 110

Test 3 - Triple Match

Start Game 1:

Fred starts with balance 110, limit 0

Turn 1: Fred bet 5 on CROWN

Rolled CROWN, CROWN, CROWN

Fred won 15, balance now 120

Test 3 - Triple Match

Start Game 2:

Fred starts with balance 120, limit 0

Turn 1: Fred bet 5 on CROWN

Rolled CROWN, CROWN, CROWN

Fred won 15, balance now 130

**Test 4:**

Test 4 - No Match

Start Game 0:

Fred starts with balance 100, limit 0

Turn 1: Fred bet 5 on CROWN

Rolled HEART, ANCHOR, HEART

Fred lost, balance now 95

Test 4 - No Match

Start Game 1:

Fred starts with balance 95, limit 0

Turn 1: Fred bet 5 on CROWN

Rolled HEART, ANCHOR, HEART

Fred lost, balance now 90

Test 4 - No Match

Start Game 2:

Fred starts with balance 90, limit 0

Turn 1: Fred bet 5 on CROWN

Rolled HEART, ANCHOR, HEART

Fred lost, balance now 85

## Resolution:

As can be seen from the testing and outputs the application is behaving as it should in relation to the payouts. In order to resolve this issue I have added a print statement advising of the starting balance before Fred makes his bet in order to remove the player’s confusion. As this is a print statement it will not affect any of the existing code.