**Bug**: Player.balance does not decrease to the limit of 0 when it should but rather stays 5.

**Hypothesis 1**: The Bug exists within a while loop of the main method starting on line 41.

Test: Check Balance and Limit before and after the while loop

Prediction: Before Loop – player.balance = 100, player.limit = 0.  
 After Loop – player.balance = 5, player.limit = 0.

Result: Balance and limit values are as expected.   
 Hypothesis confirmed.

**Hypothesis 2**: The While Boolean is made false and the loop is exited before the limit is reached.

Test: check player.balance after while loop.

Prediction: Balance is 5.   
 While loop is exited before limit is reached.

Result: Balance is 5.   
 While loop is exited before limit is reached.   
 Hypothesis confirmed.

**Hypothesis 3**: The player.exceedsLimitBy(bet) call on line 41 returns false when bet is 5 and balance is 5.

Test: Check bet parameter and test the query using the debuggers evaluate expression tool.

Prediction: Method call returns false.

Result: Method returned false value.   
 Hypothesis confirmed.   
 Bug is within method.

**Hypothesis 4**: Origins of line 30 are sane and the Boolean result calculated is insane.

Test: Check variable values at line 29 and then check the Boolean result of line 30.

Prediction: Balance is 5, Limit is 0 and amount is 5. Boolean result will be false.

Result: Variables are sane.   
 Boolean is false.   
 Variables are sane before origin and insane following therefor line 30 is infected.   
 Hypothesis confirmed.

**Hypothesis 5**: Bug is due to the use of > operator where >= should be used.

Test: change > to >=

Prediction: Bug fixed.

Result: Bug fixed.   
 Hypothesis confirmed.

Before:

C:\Users\Chris\Desktop\limitbefore.PNG

After:

C:\Users\Chris\Desktop\limitafter.PNG