1 Introduction

Download today's lab project from Brightspace. The BuggyBlackjack.java file has some code to play the game of blackjack with the user, but it has some issues.

The version of Blackjack played here is a variation of the casino version. The most significant difference is that the ace will always count 1 in this version, whereas in blackjack it can count 1 or 11 at the choice of the player. Face cards all count 10, and other cards count their face values, as in regular blackjack.

One hand or game is played as follows. First, the user chooses an amount to bet before any cards are dealt. Then the dealer deals a face down card to the player and itself, then a face up card to the player and itself. The program will display all these values to the user EXCEPT the dealer's face down card which will be displayed at an X.

The user is then allowed to ask for more cards until the sum of the user's cards values is >21(which means the user "busted"), or the user declines another card(which means the user "stands").

If the user didn't bust, then the dealer deals itself cards face up until the dealer's score is >= 17, showing each card to the user.

The user wins the hand if she/he did not bust and either the dealer busted or the user's card values summed to a value greater than the dealer's sum.

The dealer wins the hand if the user busted or if neither busted and the dealer's cards sum to a value that is higher than the user's sum.

If neither busted and the sums are the same, we will call the hand a draw.

The program will keep track of the net winnings/losings by updating a variable after each hand. It will also keep track of the number of wins, losses, and ties and report these to the user.

The program currently has a number of bugs in it and does not do these things correctly. Depending on how you count them, there are either 7 or 9 errors, precisely. If you run the program, you should see a number of errors in what it produces as output.

Because of the way random is initialized the first cards dealt should be: 6, 6, Jack, 9, Ace, 10, 8, 3, 4, 4, 4, Jack, 9, 3, 5, Ace, 6, 7, 9, Queen. Knowing that should help. You will get the same cards in the same order every time you play.

2 Your Task

Your task for the day is to use the debugging features in NetBeans (setting breakpoints, examining variables) to discover as many of the bugs in the code as you can.

Open Notepad. Type "Without Debugger:" on the first line. Run the program without the debugger. Just to see what happens. Make a note of each thing that you see that is wrong, but don't fix anything yet. Short succinct statements please.

Leave a blank line in your Notepad document and type "With Debugger:" on the next line. Run the program through the debugger. (Debug ->Step into.) If you don't see a tab

labeled Variables down where the output Console is go to Window ->Debugging ->Variables to open it. Most of your variables are properties so they will be listed under "this" You will go back and forth between the two tabs to enter input, see output (Console) and then watch variable values (Variables).

Try to play two hands and write down as many problems as you can find by just watching values and knowing what they should be. Don't try to fix anything yet. For example:

```
line 176    value of netUserWinnings is 0, should be 100
line  97    value of netUserWinnings is 0, should be 100
```

...

Again, leave a blank line in your document and type "Fixes:" on the next line. Once you've done that, find the place where you are certain that there is a problem and fix it. Make a note of the fix. For example if the original line of code was this:

```
while (input < 0 && input > 10);
```

you might write:

```
line 127   while (input < 0 || input > 10);
```

3 Hand in Your Lab

Upload the text file with the problems and fixes. This is one of the few times that I don't want your code.

4 How This Labs is Graded

100% correctly identified at least 6 errors and fixes
90% correctly identified at least 5 errors and fixes
70% correctly identified at least 3 errors and fixes
0% Lab was not handed in: