**Test Name**

TestIncorrectBalance

**Use Case Tested**

When a player has one or more die matches.

**Test Description**

* The test will assess the players balance after a single turn and then compare it to what balance the player is expected to have. This test does not manipulate the program in terms of the random die values, it only tests the expected balance after the values of each dice is returned.
* When a player wins a bet with exactly 1 match, their balance is increased by the amount they bet and they maintain the same balance they had before the bet.
* If they have 2 matches, they maintain their original balance and win double their bet (if their bet 5, they get 10)
* If they are three matches, they maintain their original balance and win 3 times their bet (bet 5, win 15)

**Pre-conditions**

* The player will have an initial balance of 15, the player has a bet of 5 and the game is limited to 1 turn.
* A test is written that fails whenever the players balance does not match the balance expected
* There are three dice objects that have the faces (diamond, crown, anchor, club, spade)

**Post-Conditions**

* The test will fail whenever the expected balance does not match the actual balance
* The test will pass when the expected balance matches the actual balance. This only occurs whenever there are no matches
* The test will output the value of each die, the initial balance, the expected balance after the turn, and the actual balance

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|  | Test Step | Expected Test Results | P | F |
| 1 | Set balance to 15 | Balance should be 15 | x |  |
| 2 | Set number of games to 1 | Should only roll the 3 dice once | x |  |
| 3 | Remove turns. Ensures that the test is only run once | The program executes only one turn | x |  |
| 4 | Run the test | * 1 match – balance is 20 * 2 matches – balance is 25 * 3 matches – balance is 30 |  | x |

Test Name

TestBetLimit

Use Case Tested

Rolling the three dice for the bet.

Test Description

* The test will check to ensure that the values of the dice are being changed after every roll.
* When the program runs, the first roll made by the dealer produces three values that are random (heart, crown, diamond, clubs spade, anchor).
* Every consecutive roll for each round and each game played does not result in new random dice values. Instead, the dice values for every round and game reflect the same values of the original roll made by the dealer.
* The test aims to prove that this in fact the case, by recording the results of many rounds and games, but also aims to isolate and therefore locate the cause of this bug.
* The test is developed for a single game that has over 200 rounds. If there are no changes after to the die after 200 rounds, it can be accurately confirmed that the dice values do not change after each round. If this is the case, the test will fail.

Pre-conditions

* The test will be set up so that only one game is played and contains 200 rounds
* To ensure that the full 200 rounds are played, the player’s die will be manipulated to always show a match to at least one of the dealers dice.
* The test will be developed so that to count the number of rounds has exactly the same value for each die.

Post-Conditions

* A count of the number of rounds that produced the exact same values for each die
* The number of rounds that produced the same values should match the number of rounds played. Each round should produce the same values as the previous
* If the number of rounds that result in the same die values equal the number of rounds played, the test will fail.

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| --- | --- | --- | --- | --- |
|  | Test Step | Expected Test Results | P | F |
| 1 | Set the balance to 201 | Balance should be 201 | x |  |
| 2 | Set bet to 1 | Bet should be 1 | x |  |
| 3 | Create the dice | Initial dice should have random values | x |  |
| 4 | Create two lists to compare the current and previous round | The list that contains the previous round should be different to the values of the current round |  | x |
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