Technical Goal of Project:

Write Python script that will test my Roulette system against a one million spin dataset to try and cash in on the new casino in Everett.

The inputs for the simulation will be 1) an established number of bets to be made in each betting ‘round’, 2) a dollar amount of cash, and 3) the dataset itself.

The script will iterate through the million spins, using the first spin as the starting point for the first ‘round’ of betting, the second spin as the starting spin for the second ‘round’, and so forth. The results for each round will be recorded and analyzed, so we can get a sense for whether my roulette system offers any real value.

The Roulette System:

If you bet even or odd in Roulette, the odds of a win are slightly worse than ½, and the payout for a win is double your bet. My system calls for you to 1) bet $1 on odd, 2) whenever you win pocket your winnings and then bet $1, and 3) whenever you lose, triple your last bet.

If you look at the math quickly, you will see that my system sets it up so that no matter how many times you lose, you only need to win once to win everything back and more. Let’s say you lose your first bet (net loss = -1) and then your second bet, which of course tripled (-1 - 3 = net loss = -4). Your net loss is now -4, but your next bet is 9 - you win. So you are up 5. This math carries out to eternity, meaning if you had unlimited money, you will eventually walk away a winner. Of course you don’t. That’s why we have a starting bankroll in our script. And also, casinos have bet limits. We implemented a maximum bet of $10k, which is pretty standard.

To start off, let’s see how we do with a $1000 starting bankroll, betting on 100 spins in each ‘round’.