Tess Porter

February 8, 2018

CS 171 – C (Lab Section: 070)

Mark Boady

Homework #2 Analysis

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Number of Tests | 10 | 50 | 100 | 500 | 1000 | 5000 | 10000 |
| Seed 1 (% Switch Wins) | 90.0 | 62.0 | 64.0 | 70.4 | 66.5 | 65.2 | 66.4 |
| Seed 1 (% Stay Wins) | 10.0 | 38.0 | 36.0 | 29.6 | 33.5 | 34.8 | 33.6 |
| Seed 2 (% Switch Wins) | 60.0 | 72.0 | 69.0 | 67.0 | 67.2 | 66.4 | 67.4 |
| Seed 2 (% Stay Wins) | 40.0 | 28.0 | 31.0 | 33.0 | 32.8 | 33.6 | 32.6 |
| Seed 3(% Switch Wins) | 90.0 | 82.0 | 64.0 | 66.0 | 69.2 | 67.3 | 66.5 |
| Seed 3 (% Stay Wins) | 10.0 | 18.0 | 36.0 | 34.0 | 30.8 | 32.7 | 33.5 |
| Seed 4 (% Switch Wins) | 50.0 | 68.0 | 60.0 | 70.4 | 66.7 | 64.9 | 66.3 |
| Seed 4 (% Stay Wins) | 50.0 | 32.0 | 40.0 | 29.6 | 33.3 | 35.1 | 33.7 |
| Seed 5 (% Switch Wins) | 60.0 | 68.0 | 68.0 | 64.0 | 66.3 | 65.7 | 67.0 |
| Seed 5 (% Stay Wins) | 40.0 | 32.0 | 32.0 | 36.0 | 33.7 | 34.3 | 33.0 |

According to my program and the data inserted in the table above it is clear that when playing Let’s Make a Deal with Monty Python it is a much better idea to switch then to stay. The closest the two values get is when the seed is four and the number of tests is ten. However, there is never a point in which the stay to win percentage is higher than the switch to win percentage. As the seed value and the number of tests increases the margin between the percent of stay wins and switch wins narrows. Based on these results we can determine that the choice to switch increases your chances of winning by two times. By the end of 10,000 tests for each seed the results are about 66% switch to win and 33% stay to win.