My Nguyen – 914 329 026 Project 2

1. **Part 1:**
   1. Simulation vs. Theoretical:

|  |  |  |
| --- | --- | --- |
| Lamda | Simulated | Theoretical |
| 0.2 | 1.251 | 1.250 |
| 0.4 | 1.658 | 1.667 |
| 0.6 | 2.529 | 2.500 |
| 0.8 | 4.996 | 5.000 |
| 0.9 | 9.558 | 10.000 |
| 0.99 | 86.938 | 100.000 |

* 1. Packet Loss Probability:

|  |  |  |
| --- | --- | --- |
| Lamda | B = 10 | B = 50 |
| 0.2 | 0.0000000 | 0.0000000 |
| 0.4 | 0.0000573 | 0.0000000 |
| 0.6 | 0.0025258 | 0.0000000 |
| 0.8 | 0.0228220 | 0.0000025 |
| 0.9 | 0.0509166 | 0.0003248 |
| 0.99 | 0.0853698 | 0.0152500 |

1. **Part 2:**
   1. Exponential and Linear Backoff Algorithm Results:

|  |  |  |
| --- | --- | --- |
| Lamda | Exponential | Linear |
| 0.01 | 0.098910 | 0.100546 |
| 0.02 | 0.049455 | 0.050273 |
| 0.03 | 0.032970 | 0.033515 |
| 0.04 | 0.024728 | 0.025137 |
| 0.05 | 0.019782 | 0.020109 |
| 0.06 | 0.016485 | 0.016758 |
| 0.07 | 0.014130 | 0.014364 |
| 0.08 | 0.012364 | 0.012568 |
| 0.09 | 0.010990 | 0.011172 |