**CS342 -OS**

**Project 1**

**Raza Faraz**

**21404239**

**Section1**

**Part A**

**For M = 1**

|  |  |
| --- | --- |
| Value of N | Time Taken ( Seconds) |
| 1000 | 0.5 |
| 10000 | 1.2 |
| 100000 | 4.5 |
| 1000000 | 189 |

**For M = 10**

|  |  |
| --- | --- |
| Value of N | Time Taken ( Seconds) |
| 1000 | 0.8 |
| 10000 | 1.8 |
| 100000 | 5.2 |
| 1000000 | 191 |

**For M = 50**

|  |  |
| --- | --- |
| Value of N | Time Taken ( Seconds) |
| 1000 | 1.2 |
| 10000 | 2.6 |
| 100000 | 5.6 |
| 1000000 | 195 |

**Explanation**

From all the graphs it can be seen that the time taken for the process to complete is more dependent on the value of N i.e the largest value compared to the value of M i.e the number of child processes. This is because after the first traversal of the link list all the M child processes have a prime and its multiples attached to it and any number after that is added to a new position i.e copied to the end the link list. This frequent insertion to the end of the link list results in a larger run time.