Activity 1. Factor 1 (problem size)

Procesador :Intel(R) Core(TM) i7-4790 CPU @ 3.60GHz 3.60 GHz

RAM: 16.00 GB

Python A1:

|  |  |
| --- | --- |
| N | TIME (seconds) |
| 10000 | 2,474 |
| 20000 | 10,642 |
| 40000 | 42,236 |
| 80000 | Oot |
| 160000 | Oot |
| 320000 | Oot |
| 640000 | Oot |

Activity 2. Factor 2 (computer power)

Procesador: Intel(R) Core(TM) i5-1035G1 CPU @ 1.00GHz 1.19 GHz

RAM: 16.0 GB

Python A1:

|  |  |
| --- | --- |
| N | TIME (seconds) |
| 10000 | 2,098 |
| 20000 | 8,512 |
| 40000 | 33,785 |
| 80000 | Oot |
| 160000 | Oot |
| 320000 | Oot |
| 640000 | Oot |

Activity 3. Factor 3 (implementation environment)

Java A1:

|  |  |
| --- | --- |
| N | TIME (seconds) |
| 10000 | 0,124 |
| 20000 | 0,477 |
| 40000 | 1,914 |
| 80000 | 7,238 |
| 160000 | 28,300 |
| 320000 | Oot |
| 640000 | Oot |

As we can see, java is much faster than python as it is an older language.

Activity 4. Factor 4 (algorithm that is used)

Python A2:

|  |  |
| --- | --- |
| N | TIME (seconds) |
| 10000 | 0,284 |
| 20000 | 1,114 |
| 40000 | 4,880 |
| 80000 | 15,083 |
| 160000 | 59,510 |
| 320000 | Oot |
| 640000 | Oot |

Python A3:

|  |  |
| --- | --- |
| N | TIME (seconds) |
| 10000 | 0,148 |
| 20000 | 0,540 |
| 40000 | 2,01 |
| 80000 | 9,576 |
| 160000 | 30,291 |
| 320000 | Oot |
| 640000 | Oot |

Java A1 without optimizacion:

|  |  |
| --- | --- |
| N | TIME (seconds) |
| 10000 | 0,460 |
| 20000 | 1,789 |
| 40000 | 6,871 |
| 80000 | Oot |
| 160000 | Oot |
| 320000 | Oot |
| 640000 | Oot |

Java A2 without optimizacion:

|  |  |
| --- | --- |
| N | TIME (seconds) |
| 10000 | 0,053 |
| 20000 | 0,178 |
| 40000 | 0,691 |
| 80000 | 2,466 |
| 160000 | 9,345 |
| 320000 | 34,357 |
| 640000 | Oot |

Java A3 without optimizacion:

|  |  |
| --- | --- |
| N | TIME (seconds) |
| 10000 | 0,029 |
| 20000 | 0,095 |
| 40000 | 0,357 |
| 80000 | 1,262 |
| 160000 | 4,755 |
| 320000 | 21,474 |
| 640000 | Oot |

Java A1 with optimizacion:

|  |  |
| --- | --- |
| N | TIME (seconds) |
| 10000 | 0,124 |
| 20000 | 0,477 |
| 40000 | 1,914 |
| 80000 | 7,238 |
| 160000 | 28,3 |
| 320000 | Oot |
| 640000 | Oot |

Java A2 with optimizacion:

|  |  |
| --- | --- |
| N | TIME (seconds) |
| 10000 | 0,016 |
| 20000 | 0,050 |
| 40000 | 0,18 |
| 80000 | 0,689 |
| 160000 | 2,632 |
| 320000 | 10,038 |
| 640000 | 35,163 |

Java A3 with optimizacion:

|  |  |
| --- | --- |
| N | TIME (seconds) |
| 10000 | 0,009 |
| 20000 | 0,031 |
| 40000 | 0,1 |
| 80000 | 0,34 |
| 160000 | 1,224 |
| 320000 | 4,599 |
| 640000 | 17,88 |