Activity 1. [Problem size]

|  |  |
| --- | --- |
| MEASURES FOR THE PROGRAM PythonA1.py | |
| N | Time (s) |
| 10000 | 1,763 |
| 20000 | 7,6 |
| 40000 | 30,206 |
| 80000 | 119,181 (OoT) |
| 160000 | OoT |
| 320000 | OoT |
| 640000 | OoT |

Activity 2. [Computer Performance]

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| SPECS | | | | |
| NAME | CPU | MEMORY | GRAPHIC CARD | SO |
| LAPTOP | I5-12450H | 16Gb | Nvidia RTX 4050 | Windows 11 pro |
| DESKTOP | Ryzen 7 3700x | 16Gb | Nvidia RTX 3060 | Windows 11 pro |

|  |  |
| --- | --- |
| DESKTOP MEASURES | |
| N | Time (s) |
| 10000 | 1,956 |
| 20000 | 7,825 |
| 40000 | 31,984 |
| 80000 | 120,314 (OoT) |
| 160000 | OoT |
| 320000 | OoT |
| 640000 | OoT |

|  |  |
| --- | --- |
| LAPTOP MEASURES | |
| N | Time (s) |
| 10000 | 1,763 |
| 20000 | 7,6 |
| 40000 | 30,206 |
| 80000 | 119,181 (OoT) |
| 160000 | OoT |
| 320000 | OoT |
| 640000 | OoT |

Activity 3. [Implementation Environment]

|  |  |
| --- | --- |
| MEASURES FOR THE PROGRAM PythonA1.py | |
| N | Time (s) |
| 10000 | 1,763 |
| 20000 | 7,6 |
| 40000 | 30,206 |
| 80000 | 119,181 (OoT) |
| 160000 | OoT |
| 320000 | OoT |
| 640000 | OoT |

|  |  |
| --- | --- |
| MEASURES FOR THE PROGRAM JavaA1.py (Optimized) | |
| N | Time (s) |
| 10000 | 0,081 |
| 20000 | 0,321 |
| 40000 | 1,271 |
| 80000 | 5,201 |
| 160000 | 20,321 |
| 320000 | 80,967 (OoT) |
| 640000 | OoT |

Activity 4. [Algorithm that is used]

|  |  |  |  |
| --- | --- | --- | --- |
| PYTHON MEASURES | | | |
|  | PythonA1.py | PythonA2.py | PythonA3.py |
| Number | Time (s) | Time (s) | Time (s) |
| 10000 | 1,76 | 0,21 | 0,11 |
| 20000 | 7,60 | 0,80 | 0,40 |
| 40000 | 30,21 | 3,02 | 1,57 |
| 80000 | 119,18 (OoT) | 23,84 | 6,00 |
| 160000 | OoT | 113,56(OoT) | 56,54 |
| 320000 | OoT | OoT | 215,09(OoT) |
| 640000 | OoT | OoT | OoT |

|  |  |  |  |
| --- | --- | --- | --- |
| JAVA OPTMIZED MEASURES | | | |
|  | JavaA1.java | JavaA2.py | JavaA3.java |
| Number | Time (s) | Time (s) | Time (s) |
| 10000 | 0,081 | 0,011 | 0,008 |
| 20000 | 0,321 | 0,035 | 0,017 |
| 40000 | 1,271 | 0,1274 | 0,066 |
| 80000 | 5,201 | 0,478 | 0,236 |
| 160000 | 20,321 | 1,841 | 0,895 |
| 320000 | 80,967 (OoT) | 6,835 | 3,411 |
| 640000 | OoT | 25,898 | 13,206 |

|  |  |  |  |
| --- | --- | --- | --- |
| JAVA UNOPTMIZED MEASURES | | | |
|  | JavaA1.java | JavaA2.py | JavaA3.java |
| Number | Time (s) | Time (s) | Time (s) |
| 10000 | 0,368 | 0,047 | 0,028 |
| 20000 | 1,604 | 0,173 | 0,106 |
| 40000 | 6,453 | 0,643 | 0,375 |
| 80000 | 25,509 | 2,400 | 1,408 |
| 160000 | 108,213 (OoT) | 9,076 | 5,318 |
| 320000 | OoT | 34,817 | 19,969 |
| 640000 | OoT | 130,778 (OoT) | 123,126(OoT) |