### <Title of the documentation/report>

### A major course output

### for the course on

### <course name>

### (<course code>)

### Submitted by

### <lastname, firstname of group members>

### (in alphabetical order)

### 

### <Teacher’s Name>

### Teacher

### <Date of Submission>

### Introduction

### In paragraph form, describe the task that is assigned.

### Describe the algorithms that will be analyzed and compared. Dedicate one paragraph per algorithm. Do not forget to cite the sources of the codes and information for each algorithm. Follow the APA citation.

### Experiments and Results In paragraph form, describe the experiments that you have performed. Indicate the number of runs *r* that you performed for each sorting algorithm and array size.

### Show the results in detailed. Follow the tables below.

### For each algorithm, discuss the results. State your notable observations on its behavior in terms of the average machine execution time and average counter value. Try to make a connection between its growth rate, average machine execution time, and average counter value.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Size *n*** | **Average Machine Execution Time (indicate time unit here)** | | | | | |
| **Bubble** | **Insertion** | **Selection** | **Merge** | **Algo5** | **Algo6** |
| 1024 |  |  |  |  |  |  |
| 2048 |  |  |  |  |  |  |
| 4096 |  |  |  |  |  |  |
| : |  |  |  |  |  |  |
| : |  |  |  |  |  |  |
| : |  |  |  |  |  |  |

Table 1. Average Machine Execution Time (indicate time unit here)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Size *n*** | **Average Counter Value** | | | | | |
| **Bubble** | **Insertion** | **Selection** | **Merge** | **Algo5** | **Algo6** |
| 1024 |  |  |  |  |  |  |
| 2048 |  |  |  |  |  |  |
| 4096 |  |  |  |  |  |  |
| : |  |  |  |  |  |  |
| : |  |  |  |  |  |  |
| : |  |  |  |  |  |  |

Table 2. Average Counter Value

### Comparison and Analysis

### Compare the growth rate, average machine execution time, and average counter value of the algorithms.

### Use visualizations like line graphs and log-log plots to show the comparisons between the algorithms. One visualization for the average *MET* and one for the average *counter* value. The x-axis is for size *n* and the y-axis is for the average *MET*/*counter* value of each sorting algorithm. The average MET of all sorting algorithms should be combined in a single line graph.

### Discuss the comparisons.

### Explain/hypothesize why one algorithm seems better than the other based on the comparisons. Do not forget to cite sources if there are. Follow the APA citation.

### Conclusion

### Summarize what you did.

### Highlight the significant and interesting findings.

### References (Follow the APA format)

### Cite all references of this document.

### Code Sources

### Cite the sources of the codes that you used in the experiments.

### Appendix A: Contribution of Members

|  |  |
| --- | --- |
| Name | Contributions |
|  |  |
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|  |  |