

# Choosing best sorting algorithms for one-dimensional and two-dimensional arrays\*

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## 1 Introduction

Nowadays all big companies are working with a big amount of data. And when it comes to working with it, it should be sorted in order to provide more efficient work with it. However, sorting itself must be optimized in order to save precious time. When it comes to sorting an array which consists of  $10^9$  elements, optimization is a must. The goal of my research is to find out which algorithms are best for sorting one-dimensional arrays and for two-dimensional arrays.

Firstly, I will find out what are the major differences between algorithms and what are the parameters that we count when choosing an algorithm to sort our data. (I will tell about this in chapter 2)

Secondly, I will define what algorithms are being used to sort data in each types of arrays (You can find it in chapters 3 and 4)

All results of my tests will be clearly showcased in chapters 3.1 and 4.1.

After this work I will sum up everything that I did in my coursework and do a conclusion about what algorithms are the best choices for these two types of arrays. (You will be able to find it in chapter 5)

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## **2 Algorithm differences**

### **2.1 How hard is it to code it**

### **2.2 How much RAM does it consume**

### **2.3 How long does it takes to sort**

## **3 One-dimensional arrays**

### **3.1 Results of testing one-dimensional sort**

### **3.2 Choosing the winner (One-dimensional arrays)**

## **4 Two-dimensional arrays**

### **4.1 Results of testing two-dimensional sort**

### **4.2 Choosing the winner (Two-dimensional arrays)**

## **5 Conclusion**