# 

# Practical 4 – Searching & Sorting

## Exercise 1:

## Step 1:

For this exercise you need to read the file **cars.csv** and create an array list to insert each car. The csv file has the following columns:

***price, brand, model, year, mileage, color, vin***

While you are reading the file you need to ignore the first row since it contains the column’s names. Also note that each column is separated with a comma ‘,’. Use the class **Car.java** that is uploaded in blackboard.

## Step 2:

1. Use **Merge sort** to sort the list of cars based on the **field year** in descending order. (From the newest to older).
2. Then print the newest car (considering there is only one with that year) and then change the year field to *2022.*

Note

## Step 3:

Write a method **public Car[] dublicatesBinarySearch(int year)** that uses **Binary search** to find the car/cars with the given manufacture year. You need to take into consideration that some cars have the same manufacture year.

## Step 4:

Use the above method to get the following data and print:

1. The details of the car with a year **2013**
2. The details of the cars with a year **2015**.

## Exercise 2

1. Write a code that implements the Quicksort algorithm that uses the median as a pivot.
2. Then sort the following array int [] unsorted = {3, 10, 1, 45, 14, 22, 5, 36}