# Homework: Advanced Tree Structures

This document defines the **homework assignments** for the ["Data Structures" course @ Software University](https://softuni.bg/trainings/1147/Data-Structures-June-2015). Please submit a single zip / rar / 7z archive holding the solutions (source code) of all below described problems.

## Implement AA-Tree

Implement the [**AA-Tree data structure**](https://en.wikipedia.org/wiki/AA_tree). Do not use external library. Write the code yourself, following the pseudocode from Wikipedia or other source. For your reference, you can search in Internet for "***AA-tree C#***".

## Implement an Interval Tree

Implement the [**Interval-Tree data structure**](https://en.wikipedia.org/wiki/Interval_tree). Do not use external library. Write the code yourself.

Hint: you can use other balanced search trees in the internal tree representation in order to make the interval tree operations fast.

## \* Implement a Fibonacci Heap

Implement a class PriorityQueue<T> based on the data structure "**Fibonacci** **Heap**". Do not use any external library!

Hint: learn about the **Fibonacci heaps** data structure, how it works, and how to implement its operations here: <http://www.cs.princeton.edu/~wayne/kleinberg-tardos/pdf/FibonacciHeaps.pdf>.