TOPIC 3	
Title:	**Performance comparison of an AVL tree and B-tree**
Tasks:	• Implement an AVL tree and B-tree with varying m-values ○ Including the capability to visualize at all steps ○ Provide a link to the implementation’s public Github repository ○ Provide instructions to run the code in the README.md file ▪ If the code is Python, use virtual environments ▪ If in another language, use docker ○ Provide the datasets in the repository • Run experiments to show the difference in time and memory complexity ○ Scenarios include search, insert, and delete ○ Experiments must be run over incremental dataset sizes ○ Integer types are enough • Show performance graphs and discuss the experiments’ results ○ Note if the results are expected ○ If the results diverge from expectations, explain the reason
Seminar structure:	The seminar must have at least 3000 words or between 6 and 8 pages including figures. The seminar text should be single-spaced. The seminar must at least have the following sections: 1. Introduction 2. Algorithm presentation 3. Experiment setup 4. Experiment results 5. Discussion and conclusion
Note:	Use benchmarking tools to gather your results, such as Python profilers https://docs.python.org/3/library/profile.html, gperf, or valgrind. Be sure to use a sequential memory data structure for arrays. Python lists are not adequate for this, but you can use arrays https://docs.python.org/3/library/array.html or NumPy arrays. For visualization we suggest using GraphViz. Experiments **MUST** be reproducible.