

Programming Project 1

Due **10/23/14** on Blackboard

B-trees (40 points)

The task of this programming assignment is to implement B-trees for any given minimum-degree parameter $k \geq 2$. This will be an internal memory data structure, so you do not have to worry about reading or writing external node-blocks to memory.

1. (20 points) Implement the B-tree, and the search and insertion operations that we covered in class.
2. (10 points) Implement one major (or several minor) extension or variation of the B-tree code. For example, implement deletion, or implement different insertion/splitting/adoption strategies for insertion.
3. (10 points) Test your code for different values of k and for different inputs. Measure and record the runtime. Write a short report that documents your test results and conclusions you can draw from them.

Turnin instructions

- You can use Java, C, C++, or Python for this project.
- **The name of your project directory should be**
`project1.<lastName><firstName>`
- Zip up a directory with your entire project (source code and report). Turn in the zip file on Blackboard.
- All projects need to compile and run. If your program does not compile you will receive 0 points on this project.
- Do not use any fancy libraries. We should be able to compile it under standard installs of Java, C, C++, or Python under linux and/or windows.