CSE: 224 DATASTRUCTURE & ALGORITHMS

Lab 5 Report

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# Problem Statement:

1. You are required to implement a generic B-Tree where each node stores key-value pairs and maintains the properties of the B-Trees use the provided interfaces.
2. You will be given a set of Wikipedia documents in the XML format, and you are required to parse them and maintain an index of these documents content using the B-Tree to be able to search them efficiently use the provided interfaces.

# Requirements:

1. A generic B-Tree data structure that implements the given interfaces.
2. A Search Engine that uses the B-tree to search for given words in the provided Wikipedia xml documents.

# Implementation details & design choices:

1. using 3 lists to store keys, values and children’s in every node.
2. to enter any key or value to node it should be wrapped in a list
3. key enter first then value or childe second in the node.
4. the operations (insertion & deletion) happens first and if there is error fixup take place second.
5. search return null if the object is not in the tree.

# Analysis: Graphs & Tables

## B-Tree:

### Tables:

#### Insertion table

#### Deletion table

### Graphs:

#### Insertion Graph

#### Deletion Graph

## Search Engine:

### Tables:

#### Look up word table

#### Look up multiple words table

### Graphs:

#### Look up word Graph

#### Look up multiple words Graph