CZ4031 - Database System Principles

Project 1 Installation Guide for Source Code

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Software and Files Needed:

1. Visual Studio Code
2. "Group 46 - CZ/CE4031 Project 1 Submission" File
3. Programming Language Used: Java

Files	Experiments
test1.java	Experiment 1 for 100B Database storage
test2.java	Experiment 1 for 500B Database storage
start1.java	Experiment 2,3,4 and 5 for 100B Database storage
start2.java	Experiment 2,3,4 and 5 for 500B Database storage
BTree.java, Node.java, DictionaryPair.java, InternalNode.java, LeafNode.java,	Supporting files for creating the B+ tree and carrying out the experiments

1. To run the codes, open terminal/command prompt and go into "Group 46 - CZ/CE4031 Project 1 Submission"

```
[nikitabachhas@Nikitas-MBP ~ % cd desktop
[nikitabachhas@Nikitas-MBP desktop % cd Group_46_CZCE4031Project1Submission
[nikitabachhas@Nikitas-MBP Group_46_CZCE4031Project1Submission % cd project
```

2. Run javac "*filename*".java
3. Run java "*filename*"

```
[nikitabachhas@Nikitas-MBP project % javac test1.java
[nikitabachhas@Nikitas-MBP project % java test1
Total number of blocks is: 356774
Total number of bytes(i.e. the size of the file) is (in Megabytes): 20 MB

Success
nikitabachhas@Nikitas-MBP project % ▊
```

4. Run test1.java and test2.java for experiment1 for 100B and 500B respectively

```
[nikitabachhas@Nikitas-MBP project % javac test1.java
[nikitabachhas@Nikitas-MBP project % java test1
Total number of blocks is: 356774
Total number of bytes(i.e. the size of the file) is (in Megabytes): 20 MB

Success
[nikitabachhas@Nikitas-MBP project % javac test2.java
[nikitabachhas@Nikitas-MBP project % java test2
Total number of blocks is: 41171
Total number of bytes(i.e. the size of the file) is (in Megabytes): 21 MB

Success
```

5. Run start1.java and start2.java for experiment 2,3,4 and 5 for 100B and 500B respectively

```
nikitabachhas@Nikitas-MBP project % javac start1.java
nikitabachhas@Nikitas-MBP project % java start1
inserted 1645 and 1.0
inserted 198 and 2.0
inserted 1342 and 3.0
inserted 120 and 4.0
inserted 2127 and 5.0
inserted 115 and 6.0
inserted 652 and 7.0
```

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```
Experiment 5 – Part (D):The content of the root node and its 1st child node of t
he updated B+ tree
Root node key is: 24
First child contains: 6
First child contains: 7
First child contains: 9
First child contains: 12
First child contains: 14
First child contains: 20

[nikitabachhas@Nikitas-MBP project % javac start2.java                          ]
[nikitabachhas@Nikitas-MBP project % java start2                                ]
inserted 1645 and 1.0
inserted 198 and 2.0
inserted 1342 and 3.0
inserted 120 and 4.0
inserted 2127 and 5.0
inserted 115 and 6.0
inserted 652 and 7.0
inserted 1807 and 8.0
inserted 154 and 9.0
inserted 6018 and 10.0
inserted 262 and 11.0
```

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```
Experiment 5 - Part (C):The height of the updated B+ tree
Height after deletion is:
3815

Experiment 5 - Part (D):The content of the root node and its 1st child node of t
he updated B+ tree
Root node key is: 6
Root node key is: 7
Root node key is: 9
Root node key is: 11
Root node key is: 18
Root node key is: 30
Root node key is: 90
First child contains: 5
First child contains: 5
First child contains: 5
First child contains: 5
First child contains: 5
First child contains: 5
First child contains: 5
First child contains: 5
First child contains: 5
First child contains: 5
First child contains: 5
First child contains: 5
First child contains: 5
First child contains: 5
First child contains: 5
First child contains: 5
First child contains: 6
First child contains: 6
First child contains: 6
First child contains: 6
First child contains: 6

nikitabachhas@Nikitas-MBP project % cc
```