CSE 373 Winter 2015

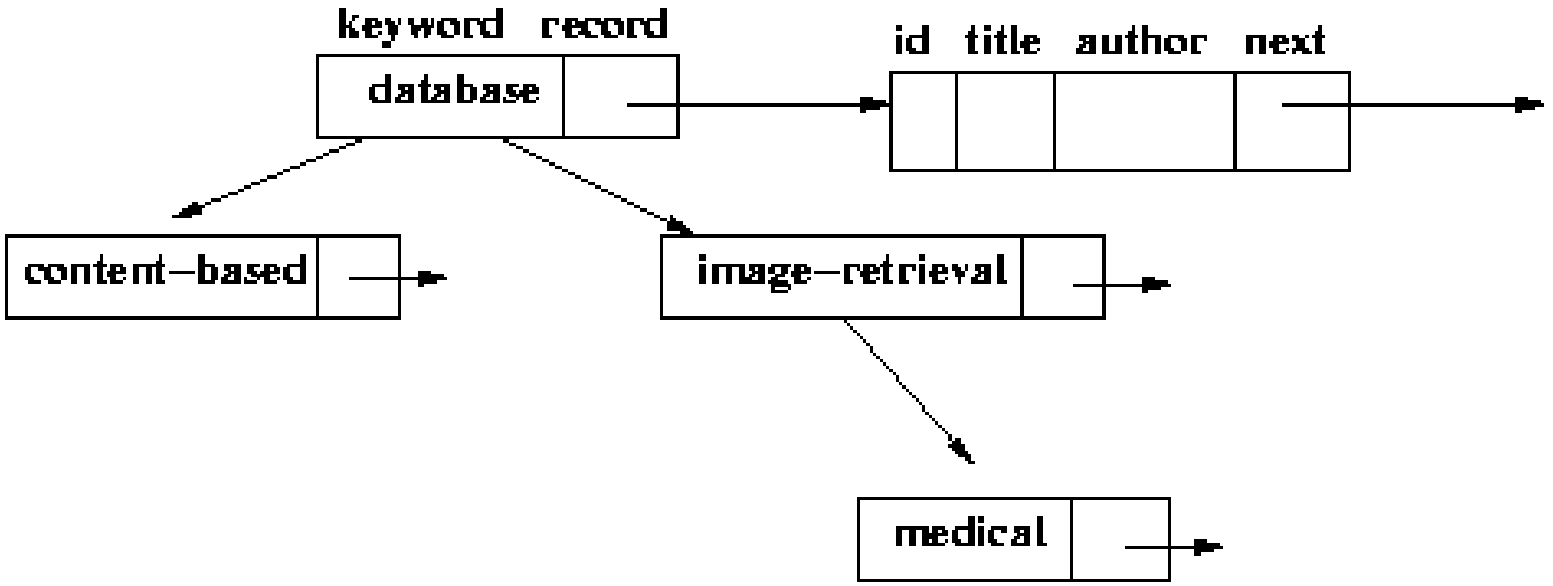
HW 3

Keyword Search

due Monday Feb 2

The Concept

- binary search tree
- keys are keywords
- values are lists of records for technical papers having that keyword



The Details

- You will implement a standard binary search tree.
- The keys will be keywords that come in a file along with associated technical papers.
- The values associated with the keys will be records for those technical papers.
- Since each keyword may have multiple technical papers, the value at a node will be a list of all the papers that have this keyword.
- So you will also implement linked lists, which will operate like stacks, putting new records at the beginning.

What We Give You

- Record.java
  - the record class (you should not change it)
- bst.java
  - the methods you need to implement and some that we give you
- test.java
  - a partial test that creates the tree (with your methods), retrieves a record, prints the tree in inorder, deletes 3 keywords, prints it again. You should add more tests to it.
- datafile.txt
  - the data for the tree

Record.java

```
public class Record{
   int id;
   String title;
   String author;
   Record next;

   Record(int i, String a, String t, Record r){
      this.id = i;
      this.title = t;
      this.author = a;
      this.next = r;
   }

}
```

datafile.txt

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A Content-Based Retrieval System for Medical Images
John Anderson
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database
image-retrieval
content-based
medical

83528
Query by Example: the CANDID Approach
Paul Kelly
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database
image-retrieval
medical
query-by-example
...

Methods to Implement (5pts each)

- Node constructor
- Node update(Record r) adds Record r to a list
- insert(String keyword, FileData fd) creates the Record r for FileData fd, finds or inserts the keyword in the tree, and updates.
- boolean contains(String keyword) determines if keyword is in the tree
- get_records(String keyword) returns the list of Records for keyword
- delete(String keyword) removes keyword from tree

Extra Credit (up to 10 points)

- Insertion into AVL Trees
- (First you still do binary search trees with all functionality)

Questions?