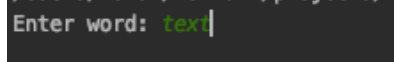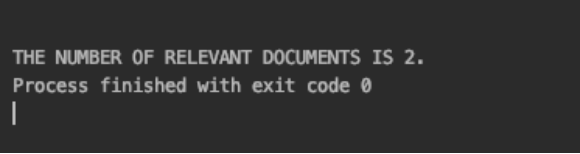CSE225 Data Structures, 2020(FALL)
Project 2

Ranking Documents for Information Retrieval with Priority Queues
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1. Screen shot that you are taking the keyword from the user:

```
Enter word: text
```

2. Screen shot that you are taking number of relevant documents:

```
THE NUMBER OF RELEVANT DOCUMENTS IS 2.
Process finished with exit code 0
```

3. Enqueue and dequeue implementation:

```c
void enqueue(node_heap *heap, int number_of_words, char *filename) {   //insert element

    node_tree *tree = malloc(sizeof(node_tree));
    tree->child = NULL;
    tree->sibling = NULL;
    tree->number_of_words = number_of_words;
    tree->filename = filename;
    tree->k = 0;


    node_heap *newheap = malloc(sizeof(node_heap));


    newheap->root = tree;
    heap->root = anUnion(heap, newheap);
    free(newheap);
}


void dequeue(node_heap *heap, node_tree *root, node_tree *prev) { // remove element. it is used in heap_MAX function.
    if (root != heap->root)
        prev->sibling = root->sibling;

    else
        heap->root = root->sibling;

    node_tree *currentCh = root->child;
    node_tree *rn = NULL;
    while (currentCh != NULL) {
        currentCh->sibling = rn;
        rn = currentCh;
        currentCh = currentCh->sibling;
    }

    node_heap *newHeap = malloc(sizeof(node_heap));
    newHeap->root = rn;
    heap->root = anUnion(heap, newHeap);
    free(newHeap);
}
```

4.

```
Enter word: text
1. Filename: doc2.txt   Occurences: 4
Automatically processing, organizing and handling this text materials are a
central problem. The key aim of text mining is to allow users to get information from text materials.   Text mining mainly deals with several important applications like
information retrieval (IR), classification (i.e., supervised, unsupervised and semi
supervised classification), document filtering, summarization, sentiment or opinion
classification.

2. Filename: doc1.txt   Occurences: 1
Text mining studies have gained importance in recent years because of the
increasing number of electronic documents like news, social networks, research
papers and digital libraries. There is no doubt that this enormous data continues to
increase day by day with the contribution of lots of people.


THE NUMBER OF RELEVANT DOCUMENTS IS 2.
Process finished with exit code 0
```

5. We know that the element that has the most priority always been the head of the priority queue. So we can access the element has the most priority in O(1) time complexity. We can optimize our access time to the element we want to access.

Thank you for your time. 🪴