HACETTEPE UNIVERSITY

DEPARTMENT OF COMPUTER ENGINEERING BBM203

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Subject : Assignment 3

Aim

Document analytsis . Learning linkedlist process such as adding anywhere, deleting, shifting etc. Last goal is learning "makefile".

Problem

We have 2 or more text files. We read files and store words and words' after words. We should use nested linked list. We can adding more things or deleting. Our big goal is to compere 2 list and find how much similiar is them.While we are finding similarty we use cosine similarity formule.I use matrix when I calculate cosine similarty.

Experience

Firstly I implemented linkedlist and added functions such that adding, deleting, sorting and so on. But that was not good idea because I create linkedlist's node with char list and my functions were according to it and I coouldn't store words into char list when I read texts. I do not understand why did this happen. That was big mistake for me. I will first read and store inputs.

I learned how to do makefile. It was easier than reading file.

I am got very tired by linkedlist head node. It was diffucult. Every function is extended by it.

Data Structures

I have 4 different my data structures.They are specialNode,specialLL,Node and linkedList.

Node store data,count of word, next node's address. There is a after words linkedlist in addition to specialNode. Every node do not need to head node that's why I create linkedList and specialLL.

Algorithm

First of all, program wants from you to enter commands. We have 6 different parameters. One of them is helping out. It is "-q".They are "-r, -a, -n2, -d, -s, -q". Program name is Simon. Simon get commands and parameters from you until sends "-q". You enter commands. Then it splits your command and analyze commands first part. If it is look like "-r", program will read text file that is path second part of command. Every commands have different type second part. So every command has different spliting form. When I read text file after that I send my linkedlist to bubble sort because we need sorted list. I reverse twice linkedlist before sorting and after sorting to look like in pdf figure. After than Simon call function according to commands.I store which files has already read. Simon don't like read twice same text file.

Every function look first is list empty. After than it is doing something. Most of function look coming list's nodes.

Big O Notation

Spemptylist --> O(1)

Spprint --> O(n)

SPisThere --> O(n)

SPaddNode --> O(1)

SPreverse --> O(n)

bubbleSort --> O(n^2)

Spappend --> O(n)

SPfirsts --> O(n)

Spdelete --> O(n)

SpcosinusOnlyTwo -->O(n)

whatIsItCounter --> O(n)

string_copy --> O(n)

emptylist --> O(1)

addNode --> O(1)

isThere --> O(n)

REFERENCES

https://stackoverflow.com

https://www.tutorialspoint.com