ADS Project Report

UFID: 8553-7314

Name: Saurabh Mukesh Bhavsar

Email: s.bhavsar@ufl.edu

Language used: JAVA
Classes used:

1) DuckDuckGo – Main Class that accepts FileName as Command Line Argument.
2) KeywordConstruct – Class that performs File Parsing, Keyword processing and output generation.
3) FibonacciHeap – The class that represents a Fibonacci Heap along with all its operations.
4) FibNode – Class that represents a Node of the Fibonacci heap.

1) DuckDuckGo Class:

Methods:

main (String args[])		
Description	The Main method	
Parameters	args[]	Command-Line Arguments
Return Value	Void	

2) KeywordConstruct Class:

parse (String inputLine)		
Description	Parses File Content	
Parameters	filepath	Path of Input File
Return Value	Void	

processKeyword (String inputLine)		
Description	Processes each line of the File Content	
Parameters	inputLine	Each Line of Input File
Return Value	Void	

processKeyword (String inputLine)		
Description	Processes each line of the File Content	
Parameters	inputLine	Each Line of Input File
Return Value	Void	

3) FibonacciHeap Class:

FibNode insertNode (int data)		
Description	Inserts new node into the heap	
Parameters	data	Key value of a Node
Return Value	new_node (ie. The node that is inserted)	

FibNode increaseKey (FibNode theNode,int newKey)		
Description	Increases the Key value of a node	
Parameters	theNode	Node whose value is to be modified
	newKey	New key Value
Return Value	theNode (ie. The node whose value is increased)	

cut (FibNode theNode, FibNode p)		
Description	Performs Child-cut operation	
Parameters	theNode	Node who has to be cut from sibling list
	p	Parent of the Node
Return Value	Void	

cascadingCut (FibNode p)		
Description	Performs resulting cascading cut operation	
Parameters	p	Parent of the Node
Return Value	Void	

FibNode extractMax ()		
Description	Method to remove the Max element from the Fibonacci Heap	
Parameters		
Return Value	tempMax (The Max Node)	

consolidate ()		
Description	Performs degreeWise Combining of heaps	
Parameters		
Return Value	Void	

fibHeapLink (FibNode y, FibNode x)		
Description	Supporting method to make one Node a child of Another	
Parameters	y	The node with a smaller key value
	x	The node with the larger key value
Return Value	Void	