ADS Project – Keyword Counter

Name: Shashank Mayekar

UFID: 5005-9142

Email: shashank.mayekar@ufl.edu

Structure:

The zip file contains the following –

1) makefile

2) 'Keyword_Counter' project directory

      a) Keyword_Counter/src/Node.java

      b) Keyword_Counter/src/FiboHeap.java

      b) Keyword_Counter/src/KeywordCounter.java

3) Report.pdf

4) The 3 source files again (for makefile) -> Node.java, FiboHeap.java, and KeywordCounter.java

Steps to execute:

The **makefile** command can be directly run in the main directory as the source files are present in it.

It can be used in two ways as follows:

1) Compile using makefile and run in standard way-

      > make

      > java KeywordCounter {absolute_file_path}

2) Compile and run using makefile-

      > make run FILE={absolute_file_path}

Method prototypes:

Class Node

	Node(long data) Constructor	
Description	Initialize a node with given frequency	
Parameters	long data	Frequency of keyword
Return value	-	
	void isolateNode()	
Description	Detaches a root node from its sibling list and child.	
Parameters	-	
Return value	void	
	void makeChildOf(Node parent)	
Description	Makes the current node a child of the specified parent node.	
Parameters	Node parent	Parent node
Return value	-	

Class FiboHeap

	void insert(Node newNode)	
Description	Inserts the new node in the Fibonacci heap	
Parameters	Node newNode	Node to be inserted in heap
Return value	void	
	void updateMaxNode(Node firstNode)	

Description	Updates maxPtr among all roots starting from the node passed.	
Parameters	Node firstNode	Starting node
Return value	void	
	void makeSiblingsParentNull(Node firstNode)	
Description	Updates the parent pointers of all siblings of firstNode to null.	
Parameters	Node firstNode	Starting node
Return value	void	
	Node removeaMax()	
Description	Returns (and removes) the maxNode in the heap.	
Parameters	-	
Return value	Node retNode	
	void pairwiseCombine(Node firstNode)	
Description	Runs pairwiseCombine procedure starting from the specified node	
Parameters	Node firstNode	Starting node for combine
Return value	void	
	void increaseKey(Node thisNode, int amt)	
Description	Increases the value of thisNode and performs cuts if required.	
Parameters	Node thisNode	Node (keyword) whose frequency is to be increased
	int amt	Frequency
Return value	void	
	void cut(Node thisNode)	
Description	Cuts the given node from its parent.	
Parameters	Node thisNode	Node to be cut from parent
Return value	void	

Class KeywordCounter

	void main(String[] args)	
Description	Main method accepts the command line inputFile argument.	
Parameters	String[] args	InputFile meeds to be the absolute path of the file.
Return value	void	
	void readFile(File file)	
Description	Processes the input file	
Parameters	File file	File to be read
Return value	void	
	int processLine(String line)	
Description	Processes each line and returns 1/0/-1	
Parameters	String line	Each line of input file
Return value	int returned	1 – When the line processed successfully but is not stop 0 – When the the last line is processed (Stop) -1 – When the processes line was invalid.
	void writeOutputFile()	
Description	Writes the StringBuffer output to the output file	
Parameters	-	
Return value	void	