*Cole Alsup* *ITI-2450 Elementary Data Structures and Algorithms*

**1:(place the part #1 function addWordToSortedList() + output below this line):**

static int addWordToSortedList(String inWord) { //sorts added words

boolean foundWord = false;

for (int i = 0; i < *lastIndex*; i++) {

*compareStringCount*++;

if (inWord.compareTo(*words*[i]) == 0) { //if words in spot i in the array compare is 0, the word is found

foundWord = true;

*count*[i]++;

break;

}

else if (inWord.compareTo(*words*[i]) > 0 && i == *lastIndex* - 1) { //compare word in spot i to make sure it isn't first but is equal minus one or the last index

*insertWordToIndex* = *lastIndex*; //sets it to last

break;}

else if (inWord.compareTo(*words*[i]) < 0) {

*insertWordToIndex* = i;

break;}

else if (inWord.compareTo(*words*[i]) > 0) {

}

}

if (!foundWord) {

if(*insertWordToIndex*==0) {

for(int i =*lastIndex*; i > *insertWordToIndex*; i--) { *count*[i] = *count*[i-1];

*words*[i] = *words*[i-1];

*moveStringCount*++;

}

} else if(*insertWordToIndex*==*lastIndex*) {

}

else if( *insertWordToIndex* > 0 && *insertWordToIndex* < *lastIndex*) {

for(int i =*lastIndex*; i > *insertWordToIndex*; i--) {

*moveStringCount*++;

*count*[i] = *count*[i-1];

*words*[i] = *words*[i-1];

}

}

*moveStringCount*++;

*words*[*insertWordToIndex*] =String.*valueOf*(inWord);

*count*[*insertWordToIndex*]=1;

*lastIndex*++;

}

return *lastIndex*;

}

Total words in Psalms: 2884

Compare count of words: 45635585

Move count of words: 2106245

and:1614

of:1380

the:2884

**2:(place the part #2 function addWordToSortedList() + output below this line):**

static int addWordToSortedList(String inWord) {

boolean foundWord = false;

int lowerNum = 0;

int higherNum = *lastIndex* -1;

int middleNum = (higherNum - lowerNum)/2 ;

while(lowerNum <= higherNum) {

*compareStringCount*++; middleNum = (lowerNum + higherNum) / 2;

if (inWord.compareTo(*words*[middleNum]) > 0) {

lowerNum = middleNum + 1;

if(lowerNum > higherNum) {

*insertWordToIndex* = middleNum + 1;

}

}

else if (inWord.compareTo(*words*[middleNum]) < 0) {

higherNum = middleNum -1;

if(higherNum < lowerNum) {

*insertWordToIndex* = middleNum;

}}

else if(inWord.compareTo(*words*[middleNum]) == 0) {

foundWord = true;

*count*[middleNum]++;

break;

}

else {

*insertWordToIndex* = middleNum;

}

}

if (!foundWord) {

if(*insertWordToIndex*==0) {

for(int i =*lastIndex*; i > *insertWordToIndex*; i--) {

*moveStringCount*++;

*words*[i] = *words*[i-1];

*count*[i] = *count*[i-1];

}

} else if(*insertWordToIndex*==*lastIndex*) {

}

else if(*insertWordToIndex*< *lastIndex* && *insertWordToIndex*>0) {

for(int i =*lastIndex*; i > *insertWordToIndex*; i--) {*moveStringCount*++;

*words*[i] = *words*[i-1];

*count*[i] = *count*[i-1];

}

}

*moveStringCount*++;

*words*[*insertWordToIndex*] =String.*valueOf*(inWord);

*count*[*insertWordToIndex*]=1;

*lastIndex*++;

} return *lastIndex*;

}

Total words in Psalms: 2884

Compare count of words: 422494

Move count of words: 2106245

and:1614

of:1380

the:2884