

Project 3 Documentation – Word List (Binary Search Tree Application)

Section	Names	Task 1	Task 2	Task 3	Task 4	Task 5
<S15>	Lim, Christopher	X	X	X	X	X
<S11>	Lim, Ivan	X	X	X	X	X
<S12>	Sy, James	X	X	X	X	X

Fill this part with your section and names. For the tasks, put an X mark if you have performed the specified task. Please refer to the project specifications for the tasks.

1. Programming Language Used: **Java**

2. Why did you choose the programming language above for Project 3? Explain briefly (1 to 2 sentences).

We chose Java since we wanted to explore creating Binary Search Trees through OOP which is possible in Java.

3. Depending on the programming language used:

a. List the libraries or APIs that you used in your implementation

- java.io.File
- java.io.IOException
- java.util.Scanner

b. Indicate how to compile (if it is a compiled language) your codes, and how RUN (execute) your program from the COMMAND LINE. Examples are shown below highlighted in yellow. Replace them accordingly. **Make sure that all your group members test what you typed below because I will follow them verbatim. I will initially test your solution using the sample input text file that you submitted. Thereafter, I will run it again using my own test data:**

- How to compile from the command line (for compiled language only):

C:\CCDSALG> **javac Driver.java**

- How to run from the command line

C:\CCDSALG> **java Driver**

4. How did you implement your BST data structure? Did you implement a single BST or multiple BST? Why? Explain briefly (2 to 3 sentences).

To implement the BST data structure, we needed 3 classes, BinarySearchTree, Node and Word.

Each Node Class contains the following:

- Word Class, which stores the Word object
- Left Node, which stores the reference to the left Node
- Right Node, which stores the reference to the right Node

Each Word Class contains the following:

- String word, which contains the word itself
- Integer count, which determines how many times that word was found

Then finally, we assign the root Node to BinarySearchTree where BinarySearchTree will also have the algorithms for inserting, removing, traversing, and displaying the Binary Search Tree.

5. Disclose what is NOT working correctly in your solution. Be honest about this. Explain briefly the reason why your group was not able to make it work.

None.

6. What do you think is the level of difficulty of the project (was it easy, medium or hard)? Which part is hard (if you answered hard)? Type your answer individually for this question.

Lim, Christopher:

For me, the difficulty of the project was medium because the algorithm for creating, inserting, deleting and traversing were already given to us, and all we had to do was code it. The parsing of the words from the input file was also quite a fun challenge to filter all non-alphabetical characters.

Sy, James Matthew

I think that this project had a fairly easy difficulty based on the implementation we had to do because there were a lot of methods and classes in Java that helped make it easy to make the three classes we needed to complete this project. However, we had to learn about file processing, exception handling to complete the program.

Lim, Ivan Jerwin

I felt that the activity was slightly hard, a bit more than medium. The hardest portion of the activity was the algorithm to store the word into the BST. The task took me a lot longer to understand and take in compared to the other tasks. Outside of that, some implementations of it also proved to be quite a struggle.

7. Fill-up the table below. Refer to the rubric in the project specs. It is suggested that you do first an individual self-assessment. Thereafter, compute the average evaluation for your group, and encode it below.

REQUIREMENT	AVE. OF SELF-ASSESSMENT
1. BST	50 (max. 50 points)
2. Input File Parsing	20 (max. 20 points)
3. Output File	15 (max. 15 points)
5. Documentation	10 (max. 10 points)
6. Compliance with Instructions	5 (max. 5 points)

TOTAL SCORE 100 over 100.

NOTE: The evaluation that the instructor will give is not necessarily going to be the same as what you indicated above. The self-assessment serves primarily as a guide.