

## Assignment 2

Github link : <https://github.com/kpavan95/CS5343/blob/main/src/com/assignments/assignment2/>

### Requirements

- JDK 8 and above installed

### Zip file

As part of the submission, a zip file will be provided which will have 2 items

- Assignment folder: It's a java project which contains the code . Note: you can also go to the above Github link and look at the code.
- assignment2.jar: It's the executable file to run the program. Instructions to run it are provided below in the Execution Instruction section

### Build Program

Note: the executable jar is already provided as part of the assignment submission so the jar can be downloaded and this part can be skipped.

- Download the source folder submitted or download it from the github link.
- Open terminal and change directory to the root folder
- Create a binary folder to store the .class file

```
> mkdir bin
```

- Compile the .java files using the following command

```
> javac src/com/assignments/assignment2/*.java -d bin/
```

- change directory to bin folder

```
> cd bin/
```

- Create a Executable jar file using the .class files

```
> jar cfe assignment2.jar com/assignments/assignment2/Assignment2 com/assignments/assignment2/*.class
```

now the executable assignment2.jar is ready to use.

### Execution Instruction

To run the program, enter the following command in terminal where the executable jar is located

```
> java -jar assignment2.jar
```

The screenshot below shows the inorder traversal of the tree after each iteration.

```
Oct 03, 2021 2:35:50 PM com.assignments.assignment2.Assignment2 main
INFO: Elements Inserted
Oct 03, 2021 2:35:50 PM com.assignments.assignment2.BinarySearchTree inorderPrint
INFO: In Order Traversal : 5, 10, 15, 20, 25, 30, 32, 33, 35, 40, 45, 46, 48, 50, 55, 60, 70, 80, 90
```

Figure 1: The Binary search tree is initiated and the data that was given in the assignment is inserted

```
Oct 03, 2021 2:35:50 PM com.assignments.assignment2.Assignment2 main
INFO: Element 40 deleted
Oct 03, 2021 2:35:50 PM com.assignments.assignment2.BinarySearchTree inorderPrint
INFO: In Order Traversal : 5, 10, 15, 20, 25, 30, 32, 33, 35, 45, 46, 48, 50, 55, 60, 70, 80, 90
```

Figure 2: Element 40 is deleted from the Binary search

```
Oct 03, 2021 2:35:50 PM com.assignments.assignment2.Assignment2 main  
INFO: Element 20 deleted  
Oct 03, 2021 2:35:50 PM com.assignments.assignment2.BinarySearchTree inorderPrint  
INFO: In Order Traversal : 5, 10, 15, 25, 30, 32, 33, 35, 45, 46, 48, 50, 55, 60, 70, 80, 90
```

Figure 3: Element 20 is deleted from the Binary search