

Name: Bibek Dhungana

OUTPUT: Homework 4

## Insertion

```
*****
MENU
Create (0), Search (1), Breadth-First Traversal (2)
Depth-First Traversal: preorder (3), inorder (4), postorder (5)
Delete (6), Exit Program (7)
*****

Choose?0

Enter values to create:15 4 1 20 25 16
*****

MENU
Create (0), Search (1), Breadth-First Traversal (2)
Depth-First Traversal: preorder (3), inorder (4), postorder (5)
Delete (6), Exit Program (7)
*****

Choose?
```

## Searching element absent in the tree

```
*****
MENU
Create (0), Search (1), Breadth-First Traversal (2)
Depth-First Traversal: preorder (3), inorder (4), postorder (5)
Delete (6), Exit Program (7)
*****

Choose?1

Enter value to search:35
The element is absent
*****

MENU
Create (0), Search (1), Breadth-First Traversal (2)
Depth-First Traversal: preorder (3), inorder (4), postorder (5)
Delete (6), Exit Program (7)
*****

Choose?█
```

## Searching element present in the tree

```
*****
                        MENU
Create (0), Search (1), Breadth-First Traversal (2)
Depth-First Traversal: preorder (3), inorder (4), postorder (5)
                        Delete (6), Exit Program (7)
*****

                        Choose?1
Enter value to search:20
The element is present
*****

                        MENU
Create (0), Search (1), Breadth-First Traversal (2)
Depth-First Traversal: preorder (3), inorder (4), postorder (5)
                        Delete (6), Exit Program (7)
*****

                        Choose?█
```

## Breadth first Traversal

```
*****
                        MENU
Create (0), Search (1), Breadth-First Traversal (2)
Depth-First Traversal: preorder (3), inorder (4), postorder (5)
                        Delete (6), Exit Program (7)
*****

                        Choose?2
The breadth first traversal is:15 4 20 1 16 25
*****

                        MENU
Create (0), Search (1), Breadth-First Traversal (2)
Depth-First Traversal: preorder (3), inorder (4), postorder (5)
                        Delete (6), Exit Program (7)
*****

                        Choose?█
```

## Preorder Traversal

```
*****
                        MENU
Create (0), Search (1), Breadth-First Traversal (2)
Depth-First Traversal: preorder (3), inorder (4), postorder (5)
                        Delete (6), Exit Program (7)
*****

                        Choose?3

The preorder traversal is:15 4 1 20 16 25
*****

                        MENU
Create (0), Search (1), Breadth-First Traversal (2)
Depth-First Traversal: preorder (3), inorder (4), postorder (5)
                        Delete (6), Exit Program (7)
*****
```

## In order Traversal

```
*****
                        MENU
Create (0), Search (1), Breadth-First Traversal (2)
Depth-First Traversal: preorder (3), inorder (4), postorder (5)
                        Delete (6), Exit Program (7)
*****

                        Choose?4

The inorder traversal is:1 4 15 16 20 25
*****

                        MENU
Create (0), Search (1), Breadth-First Traversal (2)
Depth-First Traversal: preorder (3), inorder (4), postorder (5)
                        Delete (6), Exit Program (7)
*****

                        Choose?
```

## Post Order Traversal

```
*****
MENU
Create (0), Search (1), Breadth-First Traversal (2)
Depth-First Traversal: preorder (3), inorder (4), postorder (5)
Delete (6), Exit Program (7)
*****
Choose?5
The postorder traversal is:1 4 16 25 20 15
*****
MENU
Create (0), Search (1), Breadth-First Traversal (2)
Depth-First Traversal: preorder (3), inorder (4), postorder (5)
Delete (6), Exit Program (7)
*****
Choose?
```

## Deleting element not present in the tree

```
MENU
Create (0), Search (1), Breadth-First Traversal (2)
Depth-First Traversal: preorder (3), inorder (4), postorder (5)
Delete (6), Exit Program (7)
*****
Choose?6
Enter value to delete:99
The element you want to remove does not exist
*****
MENU
Create (0), Search (1), Breadth-First Traversal (2)
Depth-First Traversal: preorder (3), inorder (4), postorder (5)
Delete (6), Exit Program (7)
```

## Deleting the element and checking the updated list.

```
*****
                                Choose?6
Enter value to delete:1
*****
                                MENU
Create (0), Search (1), Breadth-First Traversal (2)
Depth-First Traversal: preorder (3), inorder (4), postorder (5)
                                Delete (6), Exit Program (7)
*****
                                Choose?3
The preorder traversal is:15 4 20 16 25
*****
                                MENU
Create (0), Search (1), Breadth-First Traversal (2)
```

## Exiting the program

```
*****
                                MENU
Create (0), Search (1), Breadth-First Traversal (2)
Depth-First Traversal: preorder (3), inorder (4), postorder (5)
                                Delete (6), Exit Program (7)
*****
                                Choose?7
Thank you so much for using our application
```