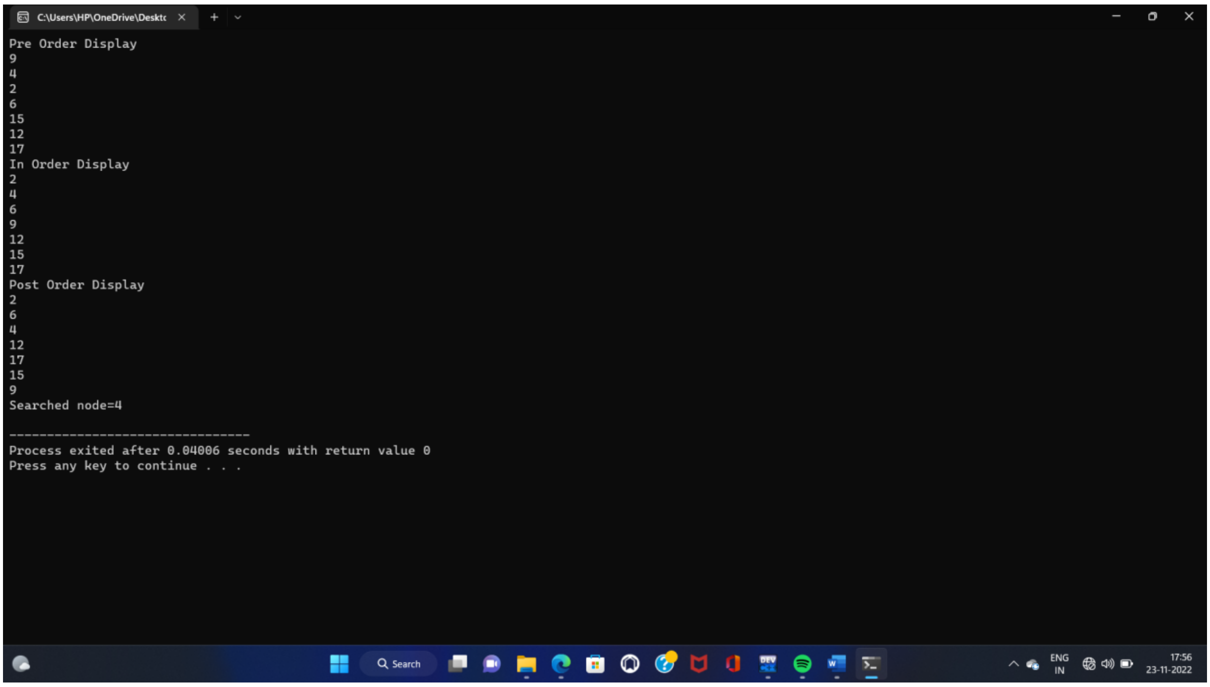
```
/*binary search tree insert,traversal,search*/
#include<stdlib.h>
#include<stdio.h>

struct node {
int data;
struct node* right, * left;
};
struct node*tree;
void insert(struct node ** tree, int val)
{
   struct node *temp = NULL;
   if(!(*tree))
   {
      temp = (struct node *)malloc(sizeof(struct node*));
      temp->left = temp->right = NULL;
      temp->data = val;
      *tree = temp;
      return;
   }

   if(val < (*tree)->data)
   {
      insert(&(*tree)->left, val);
   }
   else if(val > (*tree)->data)
   {
      insert(&(*tree)->right, val);
   }

}
```

```
void print_preorder(struct node* tree)
{
  if (tree)
  {
    printf("%d\n",tree->data);
    print_preorder(tree->left);
    print_preorder(tree->right);
  }

}

void print_inorder(struct node * tree)
{
  if (tree)
  {
    print_inorder(tree->left);
    printf("%d\n",tree->data);
    print_inorder(tree->right);
  }
}

void print_postorder(struct node * tree)
{
  if (tree)
  {
    print_postorder(tree->left);
    print_postorder(tree->right);
    printf("%d\n",tree->data);
  }
}
```

```
struct node* search(struct node ** tree, int val)
{
   if(!(*tree))
   {
      return NULL;
   }

   if(val < (*tree)->data)
   {
      search(&((*tree)->left), val);
   }
   else if(val > (*tree)->data)
   {
      search(&((*tree)->right), val);
   }
   else if(val == (*tree)->data)
   {
      return *tree;
   }
}

int main()
{
   node *root;
   node *tmp;
   //int I;

   root = NULL;
   /* Inserting nodes into tree */
```

```
    insert(&root, 9);
    insert(&root, 4);
    insert(&root, 15);
    insert(&root, 6);
    insert(&root, 12);
    insert(&root, 17);
    insert(&root, 2);

    /* Printing nodes of tree */
    printf("Pre Order Display\n");
    print_preorder(root);

    printf("In Order Display\n");
    print_inorder(root);

    printf("Post Order Display\n");
    print_postorder(root);

    /* Search node into tree */
    tmp = search(&root, 4);
    if (tmp)
    {
        printf("Searched node=%d\n", tmp->data);
    }
    else
    {
        printf("Data Not found in tree.\n");
    }

}
```



```
Pre Order Display
9
4
2
6
15
12
17
In Order Display
2
4
6
9
12
15
17
Post Order Display
2
6
4
12
17
15
9
Searched node=4

--------------------------------
Process exited after 0.04006 seconds with return value 0
Press any key to continue . . .
```