

## Q1

```
package com.dsa.lab;

public class BinarySearch{

    public static int binarySearch(int[] arr, int target) {
        int left = 0;
        int right = arr.length - 1;

        while (left <= right) {
            int middle = (left + right) / 2;

            if (arr[middle] == target) {
                return middle;
            } else if (arr[middle] < target) {
                left = middle + 1;
            } else {
                right = middle - 1;
            }
        }
        return -1;
    }

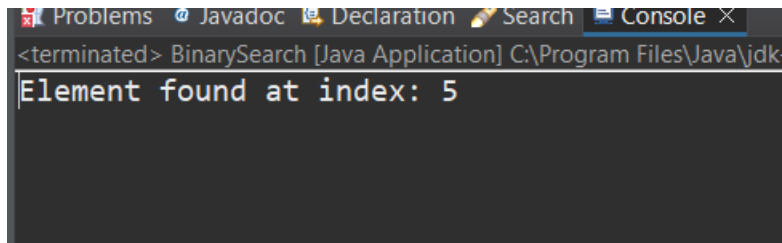
    public static void main(String[] args) {
        int[] arr = {1, 2, 3, 4, 5, 6, 7, 8, 9, 10};
        int target = 6;

        int result = binarySearch(arr, target);

        if (result == -1) {
```

```
        System.out.println("Element not found.");
    } else {
        System.out.println("Element found at index: " + result);
    }
}
}
```

**Op:-**



**Q2**

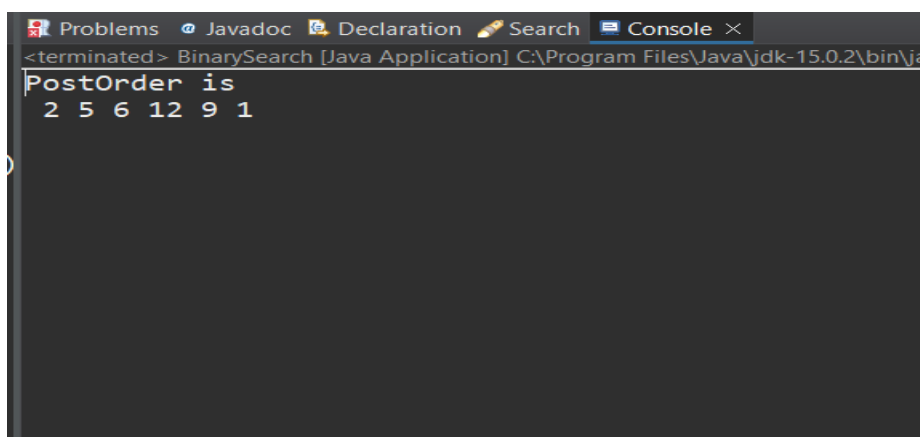
```
package com.dsa.lab;
```

```
class Node{
    public int value;
    public Node left,right;
    public Node(int e)
    {
        value=e;
        left=right=null;
    }
}

class Treepostorder{
    Node root;
    Treepostorder(){root=null;}
    void traverse(Node node)
    {
```

```
if(node == null)
return;
traverse(node.left);
traverse(node.right);
System.out.print(node.value+" ");
}
void traversepost(){traverse(root);
}
public static void main(String args[])
{
Treepostorder pt = new Treepostorder();
pt.root=new Node(1);
pt.root.left=new Node(12);
pt.root.right=new Node(9);
pt.root.left.left=new Node(5);
pt.root.left.right=new Node(6);
pt.root.left.left.left=new Node(2);
System.out.println("PostOrder is");
pt.traversepost();
}
}
```

**OP:-**

A screenshot of a Java IDE's console window. The window has a title bar with tabs for 'Problems', 'Javadoc', 'Declaration', 'Search', and 'Console'. The 'Console' tab is active, showing the output of a Java application. The output text is 'PostOrder is' followed by a new line and the sequence of numbers '2 5 6 12 9 1'. The console background is dark grey, and the text is white. The path 'C:\Program Files\Java\jdk-15.0.2\bin\ja' is partially visible at the top of the console area.

```
<terminated> BinarySearch [Java Application] C:\Program Files\Java\jdk-15.0.2\bin\ja
PostOrder is
2 5 6 12 9 1
```