OUTPUT

CASE – 1 : INSERTION

```
Choose an operation :  1-Insert    2-Search    3-Delete    4-Print    5-Exit
Enter your choice = 1
Enter value to Insert = 17

17

Choose an operation :  1-Insert    2-Search    3-Delete    4-Print    5-Exit
Enter your choice = 1
Enter value to Insert = 56

17
 \
  56

Choose an operation :  1-Insert    2-Search    3-Delete    4-Print    5-Exit
Enter your choice = 1
Enter value to Insert = 3

  17
 / \
3   56
```
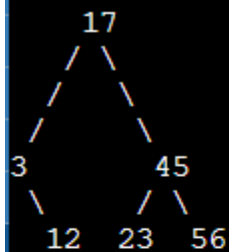
```
Choose an operation :  1-Insert    2-Search    3-Delete    4-Print    5-Exit
Enter your choice = 1
Enter value to Insert = 45

  17
 / \
3   56
   /
  45

Choose an operation :  1-Insert    2-Search    3-Delete    4-Print    5-Exit
Enter your choice = 1
Enter value to Insert = 23

  17
 / \
3   45
   / \
  23  56

Choose an operation :  1-Insert    2-Search    3-Delete    4-Print    5-Exit
Enter your choice = 1
Enter value to Insert = 12
```
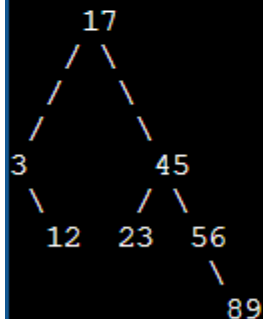
```
    17
   / \
  /   \
 /     \
3       45
 \      / \
  12  23  56


Choose an operation :   1-Insert    2-Search    3-Delete    4-Print    5-Exit
Enter your choice = 1
Enter value to Insert = 89


    17
   / \
  /   \
 /     \
3       45
 \      / \
  12  23  56
             \
              89


Choose an operation :   1-Insert    2-Search    3-Delete    4-Print    5-Exit
Enter your choice = 1
Enter value to Insert = 100
```
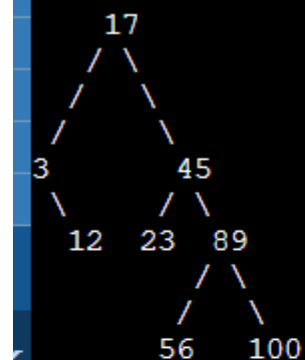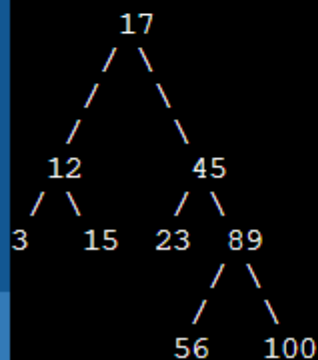
```
    17
   / \
  /   \
 /     \
3       45
 \      / \
  12  23  89
            / \
           /   \
          56   100

Choose an operation :   1-Insert    2-Search    3-Delete    4-Print    5-Exit
Enter your choice = 1
Enter value to Insert = 15


    17
   / \
  /   \
 /     \
 12       45
 / \      / \
3  15   23  89
            / \
           /   \
          56   100
```

```
Choose an operation :  1-Insert    2-Search    3-Delete    4-Print    5-Exit
Enter your choice = 1
Enter value to Insert = 36

        17
       / \
      /   \
     /     \
   12       45
  / \      / \
 3   15   /   \
     /   /     \
    23         89
      \       / \
      36     /   \
           56    100
```
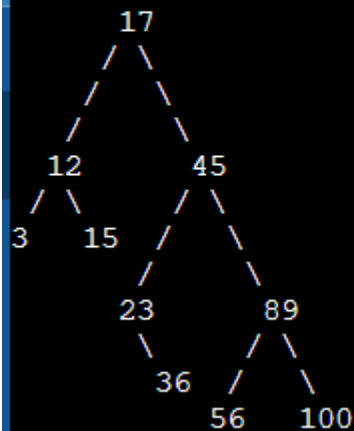
```
Choose an operation :  1-Insert    2-Search    3-Delete    4-Print    5-Exit
Enter your choice = 200
Invalid choice, try again....
```

CASE – 2 : SEARCHING

```
Choose an operation :  1-Insert    2-Search    3-Delete    4-Print    5-Exit
Enter your choice = 2
Enter value to Search = 100

100 - Node is FOUND

Choose an operation :  1-Insert    2-Search    3-Delete    4-Print    5-Exit
Enter your choice = 2
Enter value to Search = 56

56 - Node is FOUND

Choose an operation :  1-Insert    2-Search    3-Delete    4-Print    5-Exit
Enter your choice = 2
Enter value to Search = 150

150 - Node is NOT FOUND

Choose an operation :  1-Insert    2-Search    3-Delete    4-Print    5-Exit
Enter your choice = 2
Enter value to Search = 0

0 - Node is NOT FOUND
```
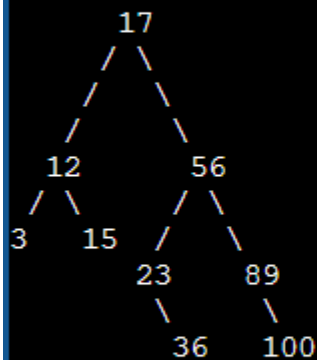
CASE – 3 : DELETION

```
Choose an operation :  1-Insert    2-Search    3-Delete    4-Print    5-Exit
Enter your choice = 3
Enter value to Delete = 45

Node deleted successfully.

        17
       / \
      /   \
     /     \
   12       56
  / \       / \
 3   15   /    \
        23     89
          \      \
           36    100

Choose an operation :  1-Insert    2-Search    3-Delete    4-Print    5-Exit
Enter your choice = 3
Enter value to Delete = 200

Node not found in the tree.
```
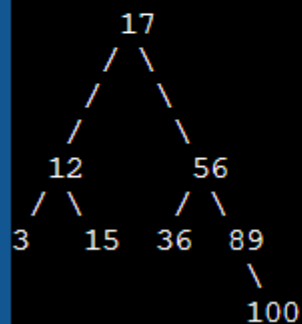
```
Choose an operation :  1-Insert    2-Search    3-Delete    4-Print    5-Exit
Enter your choice = 3
Enter value to Delete = 23

Node deleted successfully.

        17
       / \
      /   \
     /     \
   12       56
  / \       / \
 3   15   36  89
                \
                100
```
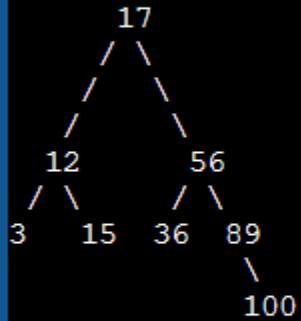
CASE – 4 : PRINTING THE TREE

```
Choose an operation :  1-Insert    2-Search    3-Delete    4-Print    5-Exit
Enter your choice = 4

***** AVL TREE *****

         17
        / \
       /   \
      /     \
    12       56
   / \      / \
  3   15  36   89
                 \
                 100

Choose an operation :  1-Insert    2-Search    3-Delete    4-Print    5-Exit
Enter your choice = 5

----- The End -----
```