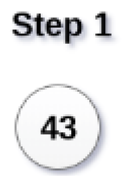
Adding Elements in BST

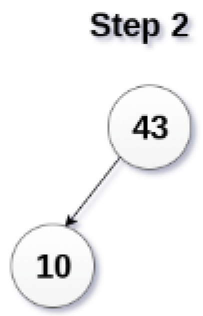
BST Example

- Elements to Add in tree are:
    - **43,** 10, 79, 90, 12, 54, 11, 9, 50



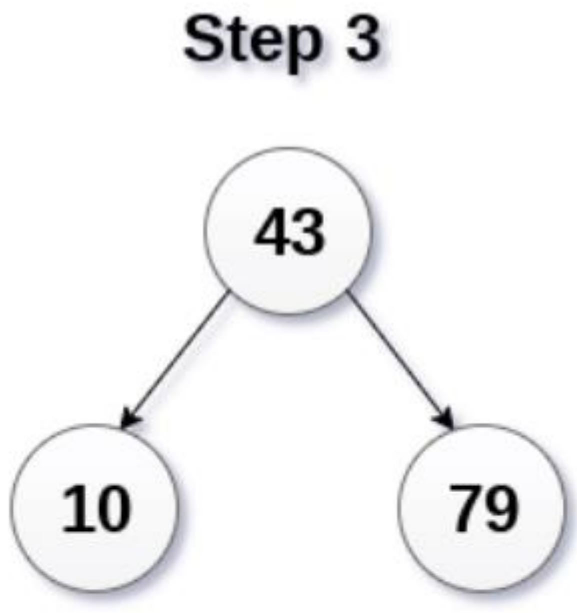
BST Example

- Elements to Add in tree are:
    - 43, **10**, 79, 90, 12, 54, 11, 9, 50



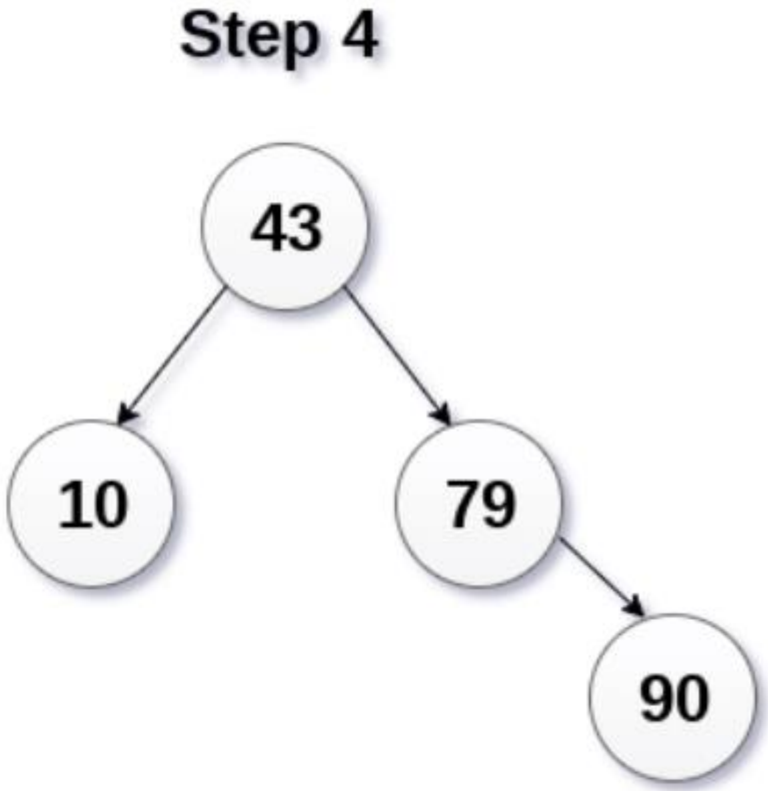
BST Example

- Elements to Add in tree are:
  - 43, 10**, 79,** 90, 12, 54, 11, 9, 50



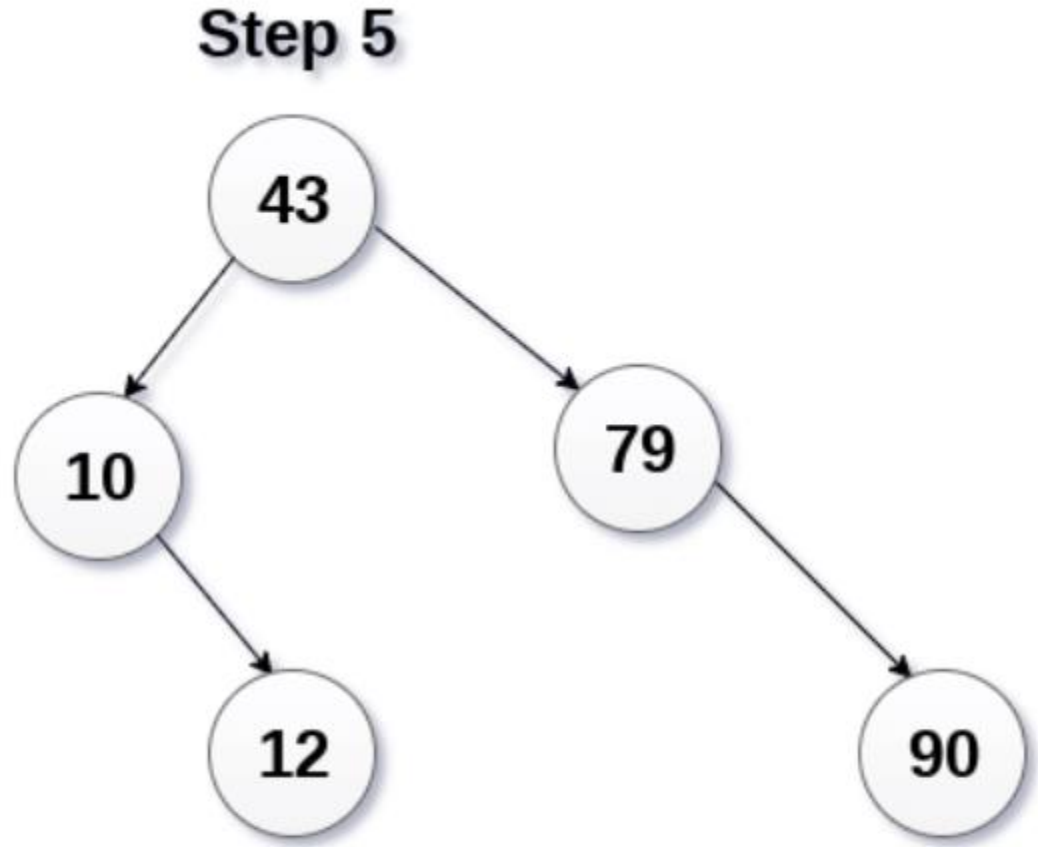
BST Example

- Elements to Add in tree are:
    - 43, 10, 79**, 90,** 12, 54, 11, 9, 50



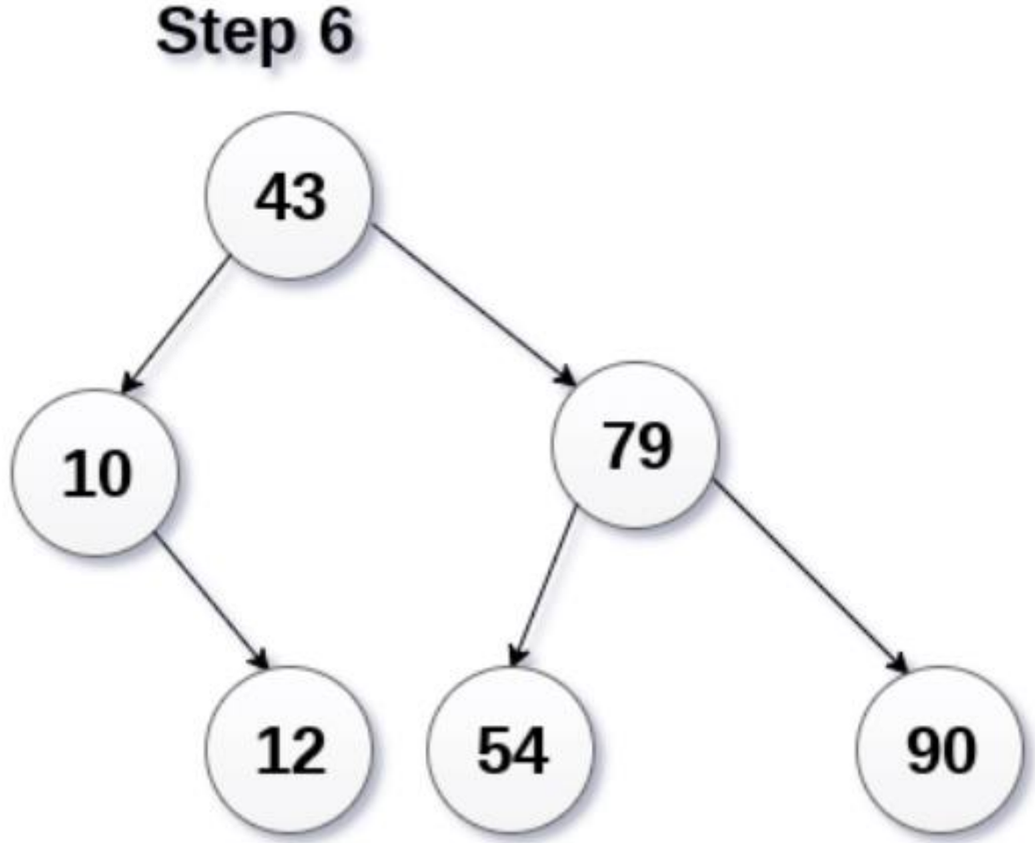
BST Example

- Elements to Add in tree are:
  - 43, 10, 79, 90**, 12,** 54, 11, 9, 50



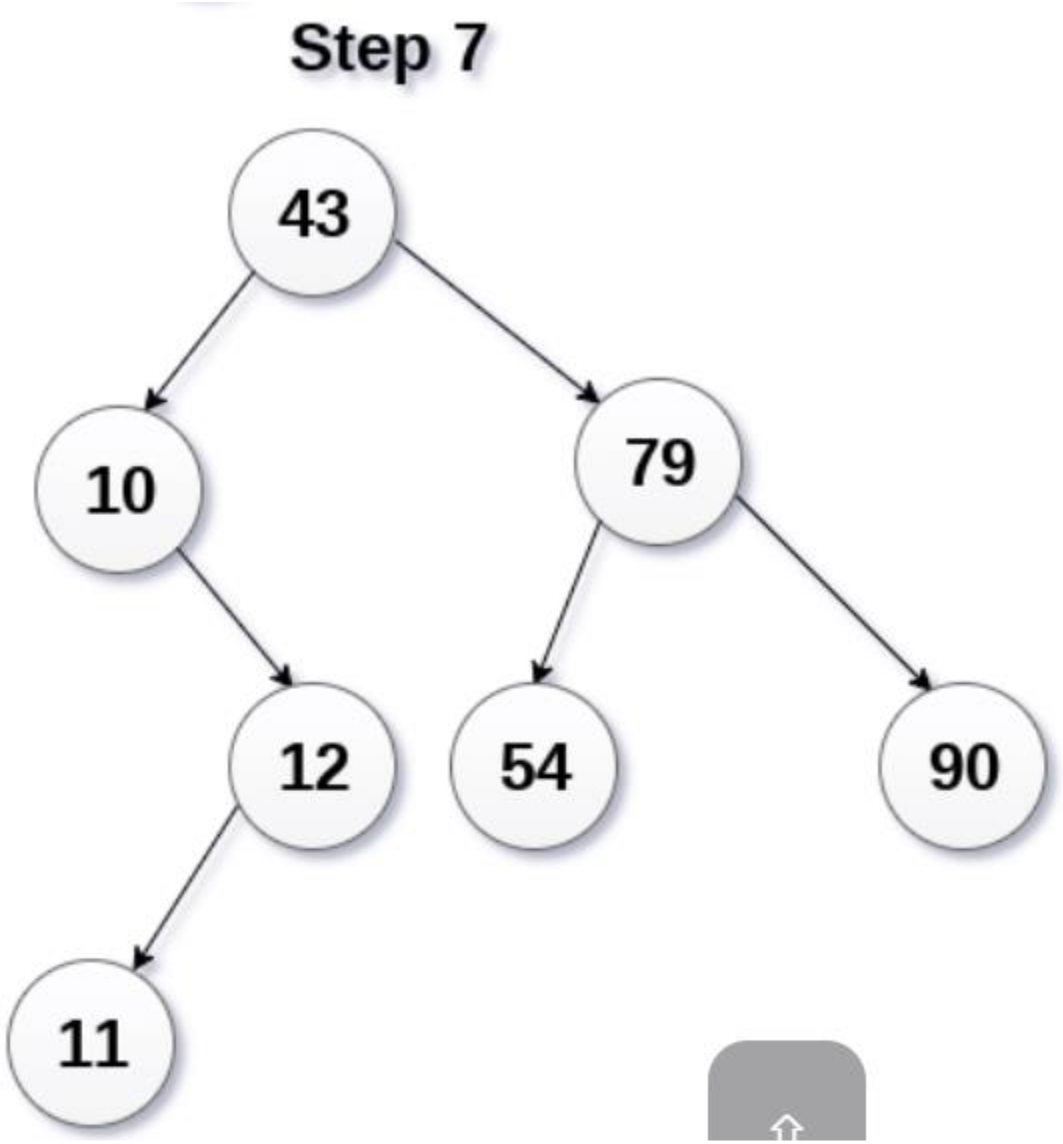
BST Example

- Elements to Add in tree are:
  - 43, 10, 79, 90, 12**, 54,** 11, 9, 50



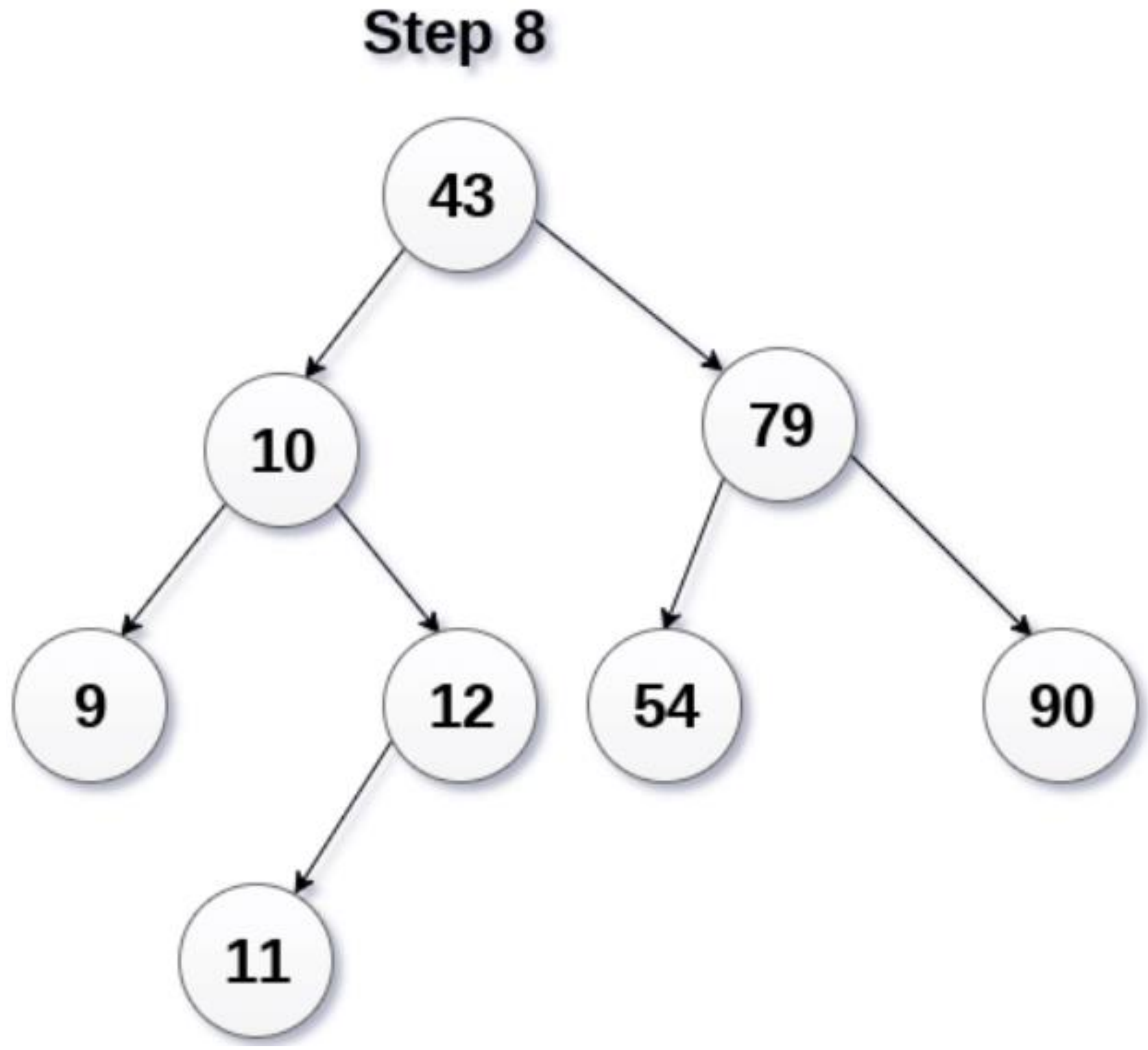
BST Example

- Elements to Add in tree are:
  - 43, 10, 79, 90, 12, 54, **11,** 9, 50



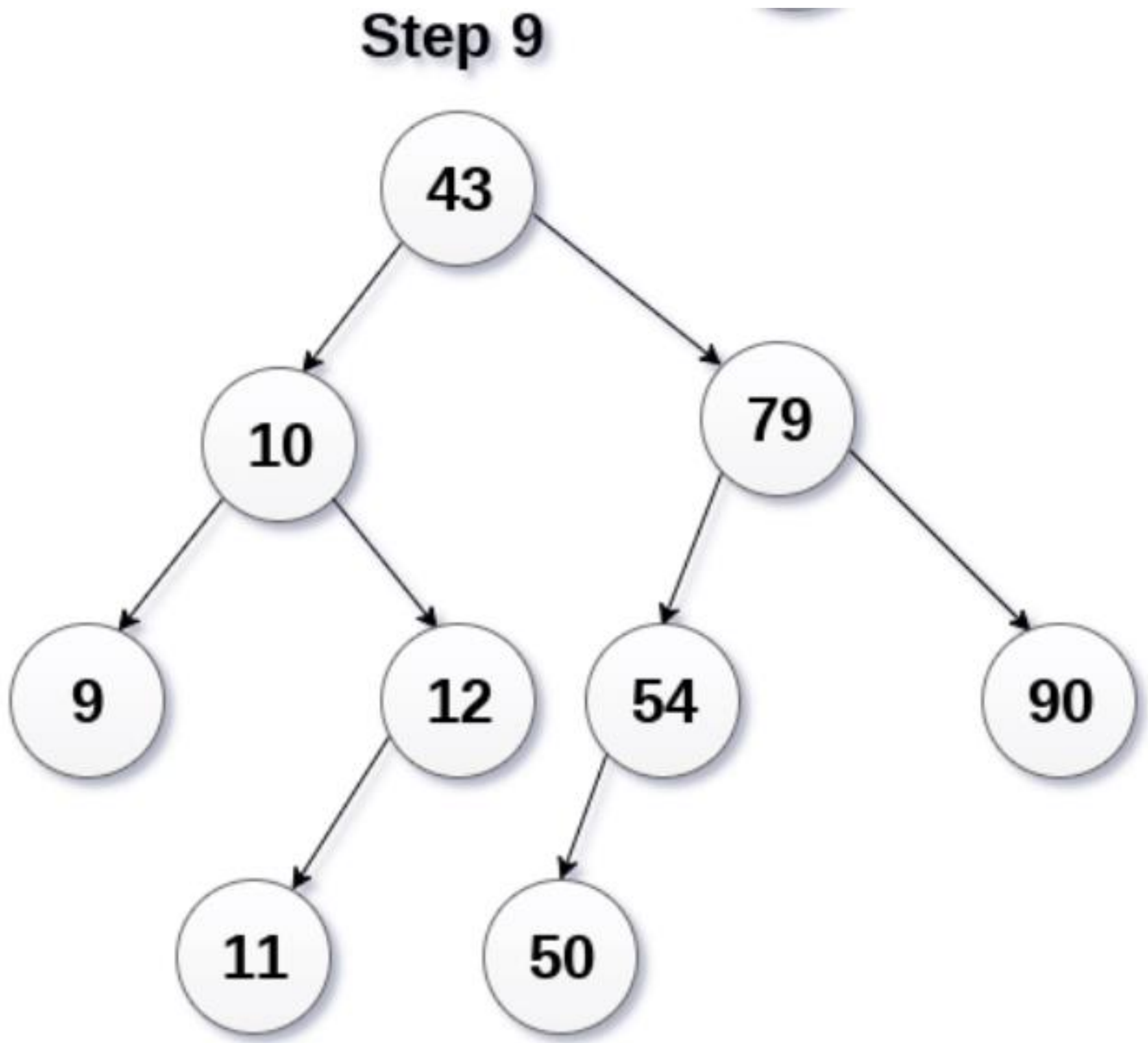
BST Example

- Elements to Add in tree are:
  - 43, 10, 79, 90, 12, 54, 11**, 9,** 50



BST Example

- Elements to Add in tree are:
  - 43, 10, 79, 90, 12, 54, 11, 9**, 50**



```
struct node
{
		int key;
		struct node *left, *right;
};

// A utility function to create a new BST node
struct node *newNode(int item)
{
		struct node *temp = new node;
		temp->key = item;
		temp->left = temp->right = NULL;
		return temp;
}
```

```
/* A utility function to insert a new node with given key in BST */
struct node* insert(struct node* node, int key)
{
        /* If the tree is empty, return a new node */
        if (node == NULL)
        return newNode(key);

        /* Otherwise, recur down the tree */
        if (key < node->key)
                node->left = insert(node->left, key);
        else if (key > node->key)
                node->right = insert(node->right, key);

        /* return the (unchanged) node pointer */
        return node;
}
```

```
// Driver Program to test above functions
int main()
{
            struct node *root = NULL;
            root = insert(root, 50);
            insert(root, 30);
            insert(root, 20);
            insert(root, 40);
            insert(root, 70);
            insert(root, 60);
            insert(root, 80);
            // print inoder traversal of the BST
            inorder(root); // given on next slide
            return 0;
}
```

```
void inorder(Node *root)
{
    if (root == NULL)
        return;

    inorder(root->left);
    cout<< root->data << "   ";
    inorder(root->right);
}
```