Binary Search Algorithm

- The algorithm for binary search is as follows

iterative procedure

```
Algorithm BinSearch(l,h,key)
{
     while(l<=h)
     {
          mid = [(l+h)/2];
          if(key==A[mid])
               return mid;
          else if (key<A[mid])
               h=mid-1;
          else
               l=mid+1;
     }
     return-1;
}
```

Recursive procedure

```
Algorithm RBinSearch(l,h,key)
{
    if(l<=h)
    {
        mid = [(l+h)/2];
        if(key==A[mid])
            return mid;
        else if (key<A[mid])
            return RBinSearch(l, mid-1, key);
        else
            return RBinSearch(mid+1, h, key);
    }
    return-1;
}
```

- Tail and loop recursive are similar
- If given option for both always go for loop recursive as its better than it because it uses stack