class test - 4

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① program to convert decimal number to binary

```
import java.util.Scanner;
public class Binary {
    public static void main (String[] args) {
        Scanner s=new Scanner (System.in);
        int n= s.nextInt(); string a="";
        while(n>0) {
            int r= n%2;
            a = r+a;
            n/=10;
        }
        System.out.println("Binary number is:"+a);
    }
}
// Input:
  15
// output:
  1111
//Input:
  10
//output
  1010.
```

(2) program to implement Binary search

```
import java.util.Scanner;
public class Binary_Search {
    public static void main(String[] args) {
        Scanner s=new Scanner(System.in);
        int n=s.nextInt();
        int arr[] = new int[n];
        for(int i=0;i<n;i++) {
            arr[i] = s.nextInt();
        }
        int key=s.nextInt();
        int f=0;
        int l=arr.length-1;
    int mid=(f+l)/2;
        while(f<l){
            if(key==arr[mid]){
                System.out.print("element found");
            }
            else if(arr[mid]<key){
                f=mid-1;
            }
            else
                f=mid+1;
            mid=(f+l)/2
        }
        if(f>l){ System.out.print("element not found");
    }}
```