

**QUESTION 2b:** Write an efficient program to find out whether a sorted input array contains two elements whose sum is exactly equal to 198.

```
//(b) 99, 98, ---, 3, 2,1  
#include <stdio.h>  
//I have used binary search algorithm to get the second number  
int binarySearch(int arr[], int l, int r, int current_value)  
{  
    if (r >= l) {  
        int mid = l + (r - l) / 2;  
        if (arr[mid]+current_value == 198){  
            if(mid!=current_value){  
                return mid;  
            }  
        }  
        else{  
            return 0;  
        }  
    }  
  
    if (arr[mid] +current_value> 198)  
        return binarySearch(arr, l, mid - 1, current_value);  
    return binarySearch(arr, mid + 1, r, current_value);  
}  
return 0;  
}  
  
int main(void)  
{
```

```

int arr[100];
int j;
for(j=99;j>0;j--){
    arr[j]=j;
}
int n = sizeof(arr) / sizeof(arr[0]);
int i,k=0;
bool flag=false;
for(i=99;i>0;i--){
    k=k+1;
    if(binarySearch(arr,0,n-k,i)){
        printf("%d + %d = 198\n", binarySearch(arr,0,n-1,i),i);
        flag = true;
    }
}
if(flag){
    printf("I have found Answer which meet the requirement.
look above");
}
else{
    printf("I have not found any two element which meet the
requirement.");
}
return 0;
}

```

## OUTPUT:

```
[1] F:\Academic KIIT\M.Tech\Algorithm\WEEK ONE\question2.exe
I have not found any two element which meet the requirement.
-----
Process exited after 0.03628 seconds with return value 0
Press any key to continue . . .
```