**Question 1**

**In the Binary Search algorithm, it is suggested to calculate the mid as beg + (end - beg) / 2 instead of (beg + end) / 2. Why is it so?**

If value of beg or end or both is **INT\_MAX**, it will cause integer overflow if we calculate mid as (beg + end) / 2. However, it will not cause such error in the other way round.

**Question 2**

**Write the algorithm/function for Ternary Search.**

int ternary\_search(int arr[], int beg, int end, int key)

{

while(beg<=end)

{

int mid1=beg+(end-beg)/3;

int mid2=end-(end-beg)/3;

if(arr[mid1]==key)

return mid1;

else if(arr[mid2]==key)

return mid2;

else if(arr[mid1]>key)

end=mid1-1;

else if(arr[mid2]<key)

beg=mid2+1;

else

{

beg=mid1+1;

end=mid2-1;

}

}

return -1;

}