***DAY 4 ASSIGNMENT***

***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?***

***Question 2 :***

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

***ANSWER:***

***a) In the Binary Search algorithm, it is suggested to calculate the mid as beg + (end - beg) / 2 instead of (beg + end) / 2 , because it would improve the time and space complexity of the program and hence provide us with an efficient program .***

***b)To perform the ternary search on an array first the array have to be sorted .Hence the algorithm to perform ternary search on an array is:***

//ar is the array of size n on which the search is to be performed.

int beg=0,end=n-1;

if (end >= l) {

// Find the mid1 and mid2

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

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

// Check if key is present at any mid

if (ar[mid1] == key) {

return mid1;

}

else if (ar[mid2] == key) {

return mid2;

}

// Since key is not present at mid,

// check in which region it is present

// then repeat the Search operation

// in that region

else if (key < ar[mid1]) {

// The key lies in between l and mid1

end=mid1-1;

}

else if (key > ar[mid2]) {

// The key lies in between mid2 and r

beg=mid2+1;

}

else {

// The key lies in between mid1 and mid2

beg=mid1+1;

end=mid2-1;

}

}