Data Structures and Algorithms

1. In the binary search it is suggested to calculate the mid as beg + (end - beg) / 2 instead of (beg + end) / 2 because when we are operating with a large array with large index values, the addition of (beg + end) may exceed the integer value. By adding the half value to beg we can avoid the overflowing of the addition of numbers.

2. Write the algorithm/function for Ternary Search.

int x;

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

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

while(end >= beg)

{ if(arr[mid1] == x){

return mid1;

}

if(arr[mid2] == x){

return mid2;

}

if(x < arr[mid1])

{ end = mid1 - 1;

}

else if(x>arr[mid2])

{ beg = mid2 + 1;

}

else

{ beg = mid1+1;

end = mid2 - 1;

}

}