Assignment Day-4:

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?

🡪 In the Binary Search algorithm, it is suggested to calculate the mid as

beg + (end - beg) / 2 instead of (beg + end) / 2 because in case of

beg+ (end-beg) result cannot be larger than end so there is no chance of overflow

and it is also be used for pointers and other random-access iterators,which

can be subtracted to give a distance,but not added together.

2.Write the algorithm/function for Ternary Search.

🡪 int ternarySearch(int l, int r, int key, int ar[]) {

if (r >= l) {

int mid1 = l + (r - l) / 3;

int mid2 = r - (r - l) / 3;

if (ar[mid1] == key) {

return mid1;

}

if (ar[mid2] == key) {

return mid2;

}

if (key < ar[mid1]) {

return ternarySearch(l, mid1 - 1, key, ar);

}

else if (key > ar[mid2]) {

return ternarySearch(mid2 + 1, r, key, ar);

}

else {

return ternarySearch(mid1 + 1, mid2 - 1, key, ar);

}

}

return -1;

}