DSA Day 4 Assignment –

Question1:

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?

Answer –

It fails for large values of the int variables low and high. Specifically, it fails if the sum of low and high is greater than the maximum positive int value (2^31 - 1). The sum overflows to a negative value, and the value stays negative when divided by two. In C this causes an array index out of bounds with unpredictable results.

hence beg+(end-beg/2) is used instead of average