

Day 4 assignment

i) In the binary search algorithm, it is suggested to calculate the mid as $\text{beg} + (\text{end} - \text{beg}) / 2$ instead of $(\text{beg} + \text{end}) / 2$.

Why is it so?

Solution

The problem is that $(\text{beg} + \text{end})$ is evaluated first, and could overflow int, so $(\text{beg} + \text{end}) / 2$ would return the wrong value.