

Array-11

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14:27

Koko eating bananas

Piles $\Rightarrow \{3, 6, 7, 11\}$

hours $\Rightarrow 8$

output $\Rightarrow 4$

\hookrightarrow

P_1	P_2	P_3	P_4
3	6	7	11
\downarrow	\downarrow	\downarrow	\downarrow
1	2	3	3

$= 8$

If it ate 3 per hour then

1 2 3 4 $\Rightarrow 10 \Rightarrow 8$
Not Possible

Now find the range for BS

$l=1$ (min) $r=11$ (Total sum)
(worst case)

Cond'n
 $l < r$

$l=1$ $m=6$ $r=11$
 \downarrow
 $mid = 1 + (11-1)/2 = 6$

If $B/\text{hour} = 6 \Rightarrow$

3	6	7	11
\downarrow	\downarrow	\downarrow	\downarrow
1	1	2	2

$= 6$ \rightarrow Good but we will try ≤ 5

Now $r=6$
 $l=1$

$m = 1 + \frac{(6-1)}{2} \Rightarrow 3$

If $b/\text{hour} = 3 \Rightarrow$

3	6	7	11
\downarrow	\downarrow	\downarrow	\downarrow
1	2	3	4

$= 10 \Rightarrow$ we will go right

So $l=4, r=6$
 $m = 4 + \frac{6-4}{2} \Rightarrow 5$

If $b/\text{hours} \Rightarrow 5 \Rightarrow$

3	6	7	11
\downarrow	\downarrow	\downarrow	\downarrow
1	2	2	3

$= 8 \checkmark$ will try ≤ 5

$l=4, r=5$

$mid \Rightarrow 4 + \frac{5-4}{2} \Rightarrow 4$

If $b/\text{hours} \Rightarrow 4 \Rightarrow$

3	6	7	11
\downarrow	\downarrow	\downarrow	\downarrow
1	2	2	3

$= 8 \checkmark$ note $l=4$

Now, $l=4, r=4$

$l=r \Rightarrow$ loop ends

Return 4