

Two Pointers Approach

↪ Sorted array → $[20, (40, 50, 75, 120, 145, 200)]$
 $\begin{matrix} \textcolor{red}{0} \\ \uparrow \\ (i, j) \end{matrix} \Rightarrow \text{arr}(i) + \text{arr}(j) = \text{target}$

$$\underline{\underline{a + b = \text{target}}} \quad \downarrow \text{entered by user}$$

$$\left\{ \begin{array}{l} \text{target} = 90 \\ (1, 2) \Rightarrow 40 + 50 \\ \qquad \qquad \qquad = 90 \end{array} \right.$$

$$a = 20 \leftarrow$$

$$* \text{target} - b = 90 - 20 = (70) \leftarrow$$

↪ searching on

↪ Sorted array

remaining elements

↪ Binary search

↪ Linear search

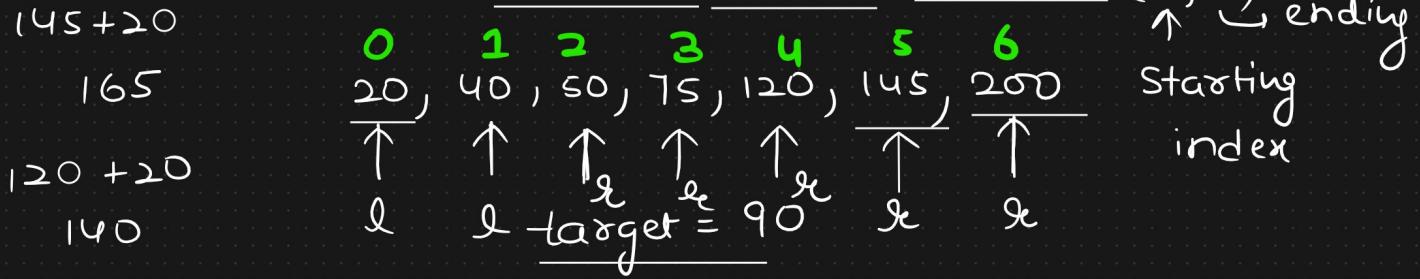
↪ $O(n^2)$

↪ $O(n \log n)$

↓

↪ Brute force

↪ approach



$-15 + 20$ for $i = 0$ to $m - 1$:

✓

95 $70 < 90$ <hr/> $40 + 50 = 90$	$\left\{ \begin{array}{l} \text{if } arr(l) + arr(r) == \underline{\text{target}}: \\ \quad \text{return } l, r \\ \\ \text{elif } arr(l) + arr(r) > \underline{\text{target}}: \\ \quad \underline{20 + 200} \\ \quad \underline{220 > 90} \\ \quad r = r - 1 \\ \\ \text{else:} \\ \quad l = l + 1 \end{array} \right.$
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return -1, -1

↳ No such kind of pair exists
which adds up & give the
given target value.

$O(n)$