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Question 3:

- First, go through the timetable schedule of arrivals and departures and count how many trains arrive before midnight and depart after midnight. Then we assign that number to variable called $platformNeeded$.
    - This number represents the initial number of platforms needed.
- Let's define variable $result$ to indicate the minimum number of platforms so far.
- At the beginning, $result = platformNeeded$
- Next, we sort the arrival and departure arrays in increasing order of time.
    - Let's define these two arrays as $sortedArrival$ and $sortedDeparture$.
    - This takes $O(n * \log n)$
- We use $arrivalPointer$ and $departurePointer$ to point to the first element in the two sorted arrays for arrival and departure array respectively. And repeatedly do the following pattern until one of these pointers reach to the end of the array:
    - If the $sortedArrival[arrivalPointer] \leq sortedDeparture[departurePointer]$:
        - We increment $platformNeeded$ by one
        - We increment the $arrivalPointer$
    - Else if $sortedArrival[arrivalPointer] > sortedDeparture[departurePointer]$:
        - We decrement $platformNeeded$ by one
        - We increment the $departurePointer$
    - Also, after this, we want to check whether $platformNeeded > result$, if it is true, we update the $result = platformNeeded$
- After we finished the loop, the value of $result$ is the minimum number platforms needed for the station.
- Time complexity $O(n * \log n)$