**Question 3**

Firstly, we count the number of trains that stay overnight (i.e. arrive before midnight and depart after midnight). These trains will obviously already have a clash. We set this number as our initial number of platforms.

Then, we store a trains’ arrival and departure times as an array within the list of our schedule

i.e.:

And we sort the list from in ascending order based on a trains’ departure time (second index of each element)

This is completed in time

Then, we enter a loop and compare the departure time of our first train, with each arrival time of the remaining trains in our list (ignoring the trains as stated at the beginning). If the arrival time is earlier than the departure time , there must be an overlap and hence another platform must be added.

This is completed in time.

**Pseudocode:**

Sum total trains which arrive before midnight, arrive after midnight = p

Enter arrival and departure times into a list L as {, for each train, simultaneously sort this in ascending order respective to departure time.

for (int i = 1; i < N; i++)

*(ignoring all pre-midnight arrival & post-midnight departure trains)*

if p++

endif

end for