

# Due Date Calculator

Thanks for handing in your application to a developer position at Emarsys. With this brief exercise we would like to assess your skills and capabilities on how you can implement algorithms and write production codes.

## The problem

We are looking for a solution that implements a due date calculator in an issue tracking system. Your task is to implement the `CalculateDueDate` method:

- Input: Takes the submit date/time and turnaround time.
- Output: Returns the date/time when the issue is resolved.

## Rules

- Working hours are from 9AM to 5PM on every working day, Monday to Friday.
- Holidays should be ignored (e.g. A holiday on a Thursday is considered as a working day. A working Saturday counts as a non-working day.).
- The turnaround time is defined in working hours (e.g. 2 days equal 16 hours). If a problem was reported at 2:12PM on Tuesday and the turnaround time is 16 hours, then it is due by 2:12PM on Thursday.
- A problem can only be reported during working hours. (e.g. All submit date values are set between 9AM to 5PM.)
- Do not use any third-party libraries for date/time calculations (e.g. Moment.js, Carbon, Joda, etc.) or hidden functionalities of the built-in methods.

## Additional info

- Use your favourite programming language.
- Do not implement the user interface or CLI.
- Do not write a pseudo code. Write a code that you would commit/push to a repository and which solves the given problem.
- You have 24 hours to submit your solution.
- You can submit your solution even if you have not finished it fully.

## Bonus – Not mandatory

- Including automated tests to your solution is a plus.
- Test-driven (TDD) solutions are especially welcome.
- Clean Code (by Robert. C. Martin) makes us happy.