

2. Back End Exam 2

The NASA wants to shoot yet another rocket to the orbit. As this is your first day as a wannabe scientist at the ground control, you are very excited. So excited that when the guy responsible for the countdown asks you to bring him some coffee, you accidentally spill it all over his lap and the computer – both are not capable of doing their job now.

But the liftoff is only seconds away. Somebody has to do the countdown – or the rocket can't start and millions of dollars are lost! In a moment of great bravery you remember you learnt how to count (a long time ago in High School). So you take the chance!

The ground control chief want you to set up on configuration of the application the initial number of seconds where to start – then count to 0. So once the application starts, the countdown begins and you are requested to implement a wcf web service with a method that returns the seconds remaining to reach 0.

Manage concurrent invocations in order to response the correct instant for each call, and be able to manage thousand of instances per second.

Separate responsibilities in separate layers: distributed services, application and domain. Implement error logging and manage exceptions in every layer. Implement unit test for any layer, too. Take care of proper naming conventions and SOLID principles. You can use any Dependency Injection, Unit Testing, Mocking frameworks or any other that you consider necessary.

Duration: 2h