



The purpose of this assessment is to allow us, Innosys, insight into your personal approach to what is required of an engineer in our environment. We are assessing your skills in:

- Structuring a solution
- Designing data structures
- Implementing an algorithm
- Presentation technologies
- Basic T-SQL knowledge

For most of the questions, there is no absolute right or wrong answer, and we encourage you to approach each section as you think best.

Assessment Information:

- There's no time limit on the assessment, but you have been given a due date so please make sure your submission reaches us no later than 17:00 on that date.
- Your submission should be emailed to talent@innosys.co.za. Please check with your recruitment consultant if they would like to be included on the mail.
- When completing your assessment, using product documentation and online resources is allowed (and encouraged!).
- Complete the assessment in the technologies that you prefer.
- Follow good programming practices.
- Part 5 can be completed using a text editor of your choice.
- Please don't share the assessment with anyone else without permission. It isn't a military secret, but it is ours.

Required Software:

- Microsoft Visual Studio 2019 or higher, or Visual Studio Code
(<https://visualstudio.microsoft.com/downloads/>)
- Microsoft SQL Server 2019 or higher
(<https://www.microsoft.com/en-us/sql-server/sql-server-downloads>)

Part 1: Data Import

A CSV (Comma Separated) file that contains activity data is provided (See Data Section or SampleData.txt) that must be imported into an internal data structure. This file will have a fixed layout; the first line in the file contains the column names. The file will have the following structure:

Column Position	Column Name	Data Type	Description
1	ID	Integer	The unique id number for this activity
2	Description	String	Description of the activity
3	Client	String	Clients Title and Name
4	StartDate	Date Time	Date and time that the activity started or starts on. The date format will always be formatted as yyyyMMddThhmm
5	Duration	Integer	Duration in hours that in which the activity must be completed in
6	Task1	String	First task that the user must complete for this activity
7	Task2	String	Second task that the user must complete for this activity
8	Task3	String	Third task that the user must complete for this activity
9	Task4	String	Fourth task that the user must complete for this activity
10	Task5	String	Fifth task that the user must complete for this activity

Part 2: Calculate Due Date

For every activity imported, the due date must be calculated using the StartDate and Duration for that activity. The following rules also apply:

1. Due Date can only be during business hours, on South African business days
2. Business hours: 08:30 to 16:00
3. Business days: Monday to Friday

Some Examples:

Start Date	Duration	Due Date
1 June 2021 08:30	1	1 June 2021 09:30
1 June 2021 09:00	8	2 June 2021 09:30
4 June 2021 15:00	2	7 June 2021 09:30

Part 3: Display Data

Display the imported data using presentation technology of your choice (ASP.NET MVC, Blazor, WebAPI + Front-end Framework of choice).

Part 4: Output SQL Import Scripts

Export the data into a SQL script that can be used for data-take on. The script must create the table(s) required and populate them with the imported data, including the calculated due date.

Part 5: Business Concepts

1. What do you understand the term 'pro-rata' to mean? Substantiate your answer with an example.
2. When we create financial transactions in our software, the data is immutable. Why do you think this is necessary?

Data

Id, Description, Client,StartDate, Duration, Task1, Task2, Task3, Task4, Task5

1,'Check Application','Mr Ndlovu','20210426T0900',3,'Check all fields completed','Cross validate fields','Check within limits','Issue Cheque','Post Cheque'

2,'Check Application','Mrs Smith','20210427T0830',4,'Check all fields completed','Cross validate fields','Check within limits','Issue Cheque','Post Cheque'

3,'Approve Limit Increase','Mr van der Spuy','20210428T1530',4,'Check Current facility','Check collateral','',''

4,'Check Application','Mr Baros','20210429T1330',8, 'Check all fields completed','Cross validate fields','Check within limits','Issue Cheque','Post Cheque'

5,'Approve Limit Increase','Ms Mokoena','20210430T1225',18,'Check Current facility','Check collateral','',''