

Regional ICT Skills Championship 2024

IT Software Solutions for Business

1 Introduction

You will get the task to develop a desktop application consisting of various windows. The application can be implemented using any technology stack such as .NET, Java, Electron, Flutter, etc. As long as the artifact you hand in after each session is expected to be a stand alone desktop application. The backend for the application is either implemented in MSSQL or MYSQL database.

You will get a time budget of around **3 hours** to complete as many tasks as possible. To provide all participants with the same starting situation, you get a virtual machine with a pre installed Windows 10 for the competition with all the necessary tools to complete the task preinstalled.

If you find yourself in the situation that there is not enough time to complete all remaining tasks, skip the implementation of certain tasks in favor for others. However, it is expected that you deliver a smoothly running application at the end of each session to facilitate the assessment of your work. The major amount of points will be awarded among correctly working functionalities.

2 Bring your own device

Competitors will work on their own devices for the championship.

Please download and test the virtual machine on your device before the competition day. The VM will be available for download few days before the competition. By downloading this VM, you are agreeing to following rules:

- The VM is to be used exclusively for the competition.
- Any distribution of the VM is strictly forbidden.
- After finishing the competition, the VM including the compressed archive and any resulting files must be deleted.

On your host device, one of the following software products is required to run the virtual machine:

- VMware Workstation Player Version 17 or higher (free for non-commercial use)
- VMware Fusion Player Version 13 or higher (free for non-commercial use)

Important: The virtual machine features a Windows 10 x64 installation. An ARM compatible machine will not be provided.

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2.1 Tools

Please check the readme-file on the VM's desktop. You may customize the VM and install other software. But keep in mind that we will use the original VM for evaluation. If you see any crucial software package missing from the VM, please request it to be included in the VM by contacting any of the head experts of your skill. Such claims may be brought to attention no later than **25. February 2024**.

The VM will come with the following software pre-installed in a recent version:

- Microsoft Windows 10 Pro
- git command line client
- maven
- IntelliJ Community Edition
- Visual Studio Community Edition
- MySQL Community Edition
- OpenJDK
- JavaFX SDK
- Gluon Scene Builder
- Microsoft SQL Server Express
- SQL Server Management Studio

3 Rules

Being a BYOD contest, the competition is subject to an Open-Book ruling. Allowing **Open-Book** however gives the competition management less control over the rules set. Therefore, your supervisor has been instructed to pay attention actively that the rules are strictly obeyed.

Please comply with the following rules throughout the competition:

- The only devices for the competition allowed are your **computer/laptop** including **power supply, mouse, keyboard, screens** and **docking station**. Other devices like smartphones must be put away. Your supervisor may allow exceptions to this rule. Headphones during the competition are allowed.
- Any form of **communication** or any **cooperation** with other people except your supervisor is strictly prohibited.
- Any form of **disturbance** to the competition or to other competitors is prohibited.
- Any form of **providing/leaking info** about the competition during the competition is prohibited.
- The usage of generative AI is explicitly **allowed**.

Failing to comply with above rules may result in the disqualification from the competition.

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3.1 Rules examples

Following table shows a non-conclusive list of rule interpretations:

Allowed	Prohibited
Working outside the provided VM on your own device	Allow someone to connect to your computer to help you. (e. g. TeamViewer, Visual Studio Live Share, etc.)
Use existing resources on the internet including stackoverflow, github	Requesting help from other people (for example, do not create a new question on stackoverflow, and don't use chat apps to communicate during the competition.
Use Google to find a solution to your problem	Transmitting the project to someone else
Using ChatGPT or GitHub CoPilot or something similar to generate code snippets.	Phone calls
Usage of downloaded libraries / code (for example maven or Nuget). Please adhere to the licenses.	
Use a book or notes you brought with you	
Using headphones	

3.2 Fairness

Details for Fairness etc. see in the [General-Information](#)s for the ICT Championships.

4 Evaluation

The evaluation will be done using the compiled application only. Please make sure the **end product** runs on the **original** virtual machine provided. The application should be executable easily (e.g. through double click on a *.exe, *.bat, *.ps1 etc.). If this is not the case, please add a comment that describes how to start the application.

Note: No extra effort, apart from your documentation, will be made to get the application running on the export's VM. Ideally the application is "portable" (i.e. extract, double click, run).

Each task is rated by testing the implementation of the required functionality. In addition, the following criteria apply to all tasks and must match your solution:

- No errors should occur / proper exception handling is implemented
- The database schema should fulfil the following requirements
 - Each table has a primary key
 - Each field uses a suitable datatype
 - Foreign keys are defined for all relationships
 - The database is in 3rd normal form

5 Delivery

More information on how and where to deliver the final product will follow on the competition day.