



General Description

Introduction

This document describes the ICT Regional Championships in the category Web Technologies.

The competition is divided into three to five completely independent tasks. You will have **three hours** to complete as many tasks as possible. You are free to perform the required tasks with all the skills you have using the tools provided.

Bring your own device

Competitors will use their own devices for the championship. This also has the effect that internet usage is no longer restricted. Please note that any communication about the championship tasks, or the exchange of the tasks or solutions, as well as the usage of GitHub Copilot, ChatGPT, or any other generative AI is **strictly prohibited** and will result in disqualification of all involved parties from the current and future championships.

One or multiple docker images will be provided to you for the championship to solve the tasks. A test setup will be provided around 2 weeks before the championship, allowing everyone to get familiar and verify the setup.

The following **software is required** and has to be installed on your device:

- Docker
- Docker compose
- Node.js 20 with npm (for running GUI based applications outside of Docker)
- Newest version of Google Chrome
- Editor/IDE of your choice

Rules

To perform the tasks, the following rules apply:

- The use of any communication is prohibited (mobile, tablet, chats, etc.).
- No use of any generative AI (GitHub Copilot, ChatGPT, etc.).
- No external storage can be used (USB, memory card, etc.).
- You are not allowed to talk with other candidates (offline or online).
- No sound devices (headset, headphones, etc.) can be used.


Rating

For each task, a marking scheme is given that you can check if you have done all the required work. We cannot provide you with any more information here. At the competition, check the marking scheme and set your own priorities - to avoid losing too much time working on less weighted tasks.

Automated tests and rating


For some tasks, you can execute automated tests (e.g. unit tests or end-to-end tests). Instructions will be given in the tasks on how to execute them. These tests are then also used to rate your work. If a test runs successfully on your virtual machine, you will get the corresponding points.

One More Thing

 It is suggested that you read carefully through the assignment and look through the provided content for the website such as the images and text.

You probably will not have enough time to complete all the formal and technical criteria of the tasks. In this case, you must decide the criteria to achieve in priority to win as many points as possible.

Example Championship Tasks

On www.ict-berufsbildung.ch  you will find the tasks from the regional championship 2023 to get an impression of how the championship could look like. Please note that the topics are subject to change.

On the next page, you find a list of skills that can be tested. Also, be prepared for some changes on the design, styles of the tasks, or work you have to do.

Tested Skills

Following skills can be tested during the championship:

General

Very good knowledge in programming methods, paradigms, and code understanding.

- Object-oriented programming.
- Procedural programming.
- Usage of different data formats (CSV, XML, JSON).
- Reading documentations.
- Understanding existing code.

Frontend Development


Very good knowledge in writing JavaScript up to ECMAScript 2023.

- Object-oriented JavaScript programming.
- Scope & closures.
- Usage of a framework.

Backend Development

Very good knowledge in one of the available backend programming languages:

- PHP up to version 8.2
- Node.js up to version 20

 You are free to choose which language you want to use for backend development. All tasks can be done in both languages.

SQL

Basic knowledge in writing SQL queries.

HTML

Good knowledge in writing HTML up to HTML5.

- Basic HTML usage.
- Knowledge of HTML tags and attributes and their meaning.
- Usability and accessibility.


CSS

Good knowledge in writing stylesheets up to CSS3.

- Basic CSS usage.
- Understanding of selectors.
- Pseudo-classes.
- Usage of media queries.
- Inheritance.
- Animations.

Regex

Basic knowledge in writing regex expressions.

 Since the tasks of the championship change annually, not all skills can be checked equally.