

Technical Description

Computer Programming

Skill 03



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1 Skill Overview

1.1 Skill Name and Category

Computer Programming, ICT

1.2 Number of Competitors

This is an individual Skill Competition with one competitor.

1.3 Competition Time

The total competition time is 4 hours and consists of one module:

- Module A: Python Application Development – 4 hours

1.4 Description of the Skill

Computer Programming involves the development of an application program using programming languages and databases to complete assigned tasks. Competitors are expected to analyse requirements, design solutions, and implement functional code that meets the given specifications. The skill requires proficiency in coding, problem-solving, and database integration, as well as attention to detail and logical thinking. Successful programs demonstrate efficiency, reliability, and a clear understanding of software development principles.

2 Task Assignment Overview

2.1 Task Assignment Description and Familiarisation Session

The Task Assignment is the main competition task used to assess the competitors' skills. It defines what the competitors must complete during the competition and forms the basis for all assessments. The final result is evaluated only on the finished work produced during the official competition time.

A familiarisation session is organised on C-1. During this session, competitors may enter the workshop, see the workspace, check the available tools and materials, and ask questions about procedures or practical arrangements. Competitors are not allowed to practise, start, or rehearse any part of the Task Assignment during this session.

2.2 Task Assignment Structure

The competition consists of one module.

Module A: Python Application Development

Competition time: 4 hours.

Competitors develop a computer program using the Python language and a database. The task is based on a given brief and requires competitors to design and implement a functional software solution that meets the specified requirements.

The Task Assignment may require competitors to create a user interface, implement application logic, process and validate data, and store, retrieve, update, and delete information in a database.

The database is provided as part of the competition environment. Competitors are not required to design, create, or modify the database structure.

The final solution must be functional, user-friendly, and fulfil the requirements specified in the Task Assignment.

2.3 Task Assignment Technical Requirements

Competitors must be able to apply the following techniques and technologies:

- Python version 3.14 or later
- Python programming concepts, including functions, data structures, error handling, and modular program design
- User interface development
- Application logic
- Data processing and validation
- Database operations, including storing, retrieving, updating, and deleting data
- Programming problem-solving and integration of different components into one software solution
- Clear, maintainable, and well-structured code
- Local database: MariaDB or SQLite (to be specified later, if needed)
- Visual Studio Code or another code editor

- Additional Python libraries, to be specified later if required

The Task Assignment defines the exact requirements, including the required functionality, user interface, data handling, and deliverables.

3 Materials and Equipment

3.1 Materials and Equipment Provided by the Competition Organiser

The Organiser provides the materials, tools, and equipment listed below.

Images are for reference only. They do not indicate a specific brand or model unless otherwise stated in the specifications. Quantities are per competitor unless otherwise stated.

Items will be available at the competitor's workstation or in the designated competition area, as appropriate. Where exact brands, models, or task-specific material details are not specified, these may be confirmed before the competition or defined in the Task Assignment, as appropriate.

No.	Equipment / Material	Picture	Specifications	Quantity
01	Computer workstation		Desktop or laptop, 16 GB RAM, SSD	1
02	Monitor		24–27-inch, Full HD	1
03	USB Keyboard		Standard input devices	1
04	USB Mouse		Standard USB Mouse	1
05	USB stick			1
06	Visual Studio Code		Installed	1

No.	Equipment / Material	Picture	Specifications	Quantity
07	Python		Version 3.14 or later, installed	
08	Local database		MariaDB or SQLite, to be confirmed	1
09	Python documentation		Available in the competition environment	1
10	Necessary starter files		Available in the competition environment	1
11	Desk and chair		Standard workstation furniture	1 set per competitor
12	Pen and paper		Provided at the competition site	1 set

3.2 Materials and Equipment Supplied by Competitors

Competitors may bring only the materials, tools, and equipment listed below. Personal tools and equipment must fit within a toolbox or tool case suitable for checked luggage, with a maximum total weight of 23 kg, including the toolbox or case. This requirement does not apply to clothing, footwear, personal protective equipment (PPE), or equipment required due to the competitor's condition or special needs and agreed in advance with the Organiser.

Images are for reference only. They do not indicate a specific brand or model unless the specifications state otherwise. Quantities are per competitor unless otherwise stated.

No.	Equipment / Material	Picture	Specifications	Quantity
01	USB keyboard		Competitor's regional keyboard layout	1
02	USB mouse		Competitor's choice	1

No.	Equipment / Material	Picture	Specifications	Quantity
				

3.3 Prohibited Materials and Equipment

Competitors may use only the materials, tools, and equipment listed in Sections 3.1 and 3.2, unless otherwise authorised by the Skill Manager or Chief Judge. This restriction does not apply to clothing, footwear, or personal protective equipment (PPE) required in Section 4.1, or to equipment required due to the competitor's condition or special needs and agreed in advance with the Organiser.

All other materials, tools, and equipment are not permitted.

4 Skill-Specific Requirements

4.1 Skill-Specific Requirements

The Skill-Specific Requirements below apply to this Skill Competition and must be followed in addition to the Abilympics Competition Rules. The Skill Manager or Chief Judge may provide additional instructions, as needed, to ensure the competition is conducted safely and fairly.

Topic	Skill-Specific Requirements
Materials and tools provided by the Organiser	Competitors must check all materials, tools, and equipment before the competition begins. If any item is missing, damaged, or defective, competitors must immediately inform the Judges. No replacements will be provided once competition time has commenced, unless authorised by the Judges. If equipment provided by the Organiser fails and the failure is confirmed not to have been caused by the competitor, the Chief Judge may grant additional time.
Use of personal tools	Competitors may bring and use only the personal tools and equipment listed in Section 3.2. No other personal tools or equipment are permitted. This restriction does not apply to equipment required due to the competitor's condition or special needs and agreed in advance with the Organiser.
Personal protective equipment (PPE)	PPE is not required for this skill.
Clothing / Uniform	There is no mandatory uniform. Competitors must wear neat, comfortable clothing suitable for computer-based work. Clothing must allow the competitor to work safely and effectively at the workstation. Clothing must not display large commercial logos or promotional branding. Small, non-distracting brand marks are permitted.
Sideline coaching	Competitors must remain at their workstations or within the designated competition area during competition time, unless authorised to leave by the Judges. Competitors may not communicate with other competitors or members of the public during competition time. Competitors may communicate with Judges, Interpreters, personal assistants, and other authorised persons when required. The role and permitted involvement of a personal assistant must be agreed in advance with the Organiser based on the competitor's condition or special needs.
Use of technology	

Topic	Skill-Specific Requirements
	Internet access at competitors' workstations is prohibited. The use of external code libraries, templates, frameworks, software, or other materials not approved by the Organiser is not permitted. Competitors may not use personal laptops, tablets, mobile phones, smartwatches, or other personal communication or electronic devices during competition time. Competitors must store such devices away and may access them only during the lunch break or at the end of the competition day. This restriction does not apply to devices required due to the competitor's condition or special needs and agreed in advance with the Organiser. Judges and Interpreters may use devices required for their official duties only as agreed by the Skill Manager and the Chief Judge. The Skill Manager and the Chief Judge may use devices required for competition management and will specify any additional restrictions or permitted device use within the competition area.

5 Assessment Framework

5.1 Assessment Principles

All Abilympics Skill Competitions are marked out of 100 points.

Points are divided between criteria that reflect the required skills and expected outcomes.

Two methods of assessment are used:

- **Measurement:** objective, factual scoring (e.g., size, accuracy).
- **Judgement:** expert evaluation of quality, technique, and artistic choices.

5.2 Assessment Areas

Detailed marking criteria and scoring are provided in the Task Assignment.

Assessment focuses on the following key areas:

Assessment Area	Points
Functionality – Program meets the Task Assignment requirements and functions correctly	40
User interface – Clear and intuitive user interface	25
Data handling and processing – Appropriate handling and processing of data	10
Code quality and readability – Clear structure, naming, and comments	10
Program structure – Functions, classes, and modules are used appropriately; unnecessary duplication is avoided	10
Error handling – Program handles errors appropriately	5
Total	100