

# **U s e r   M a n u a l**

## **TELOS CALC**

**The IHK Examination Grade Calculation Tool for IT Specialists**

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**Summary:** TELOS CALC is a tool for calculating IHK final examination grades for IT Specialists, developed primarily for the field of application development. It is mainly intended as a Windows desktop application, but running it on macOS or Linux systems is experimentally possible. This manual is intended for end users and includes instructions for installation, operation, and troubleshooting.

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## 1 System Requirements

- Windows 10 or newer (for the provided telosCalc.exe)
- Optional: Python 3.8+ if running from source, or when running the tool on Linux or macOS

## 2 Installation & Startup

### Running the EXE

1. Copy telosCalc.exe into any directory.
2. Double-click to start. On first launch, a configuration file (telosCalc.conf) is created in the same directory. This file is loaded each time telosCalc.exe is started. The stored settings are applied so the same configuration as on the last shutdown is restored. Accordingly, the file is overwritten on each program exit with the currently active settings.

### Running from Source (optional)

1. Install Python 3.8+.
2. Create a virtual environment: `python -m venv .venv` and activate via `.\.venv\Scripts\activate`.
3. Install dependencies: `pip install -r requirements.txt`
4. Start the application: `python main.py`

*or:*

#### Build the application:

Using `pip install pyinstaller && pyinstaller main.spec`. Before doing so, you may specify a target architecture<sup>1</sup> inside `main.spec`. If none is specified, the architecture of the current system is used automatically.

## 3 Using the GUI

The menu bar (see Figure 1) provides the options File, Language, Appearance, and Help. Under Help, the options Documentation—which links to this document—and About—which provides information about the application—are available.

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<sup>1</sup>Adjust the variable `target_arch` (possible values: `x86_64`, `arm64`, or `universal2`). Further information regarding `pyinstaller` can be found here: <https://pyinstaller.org>



Figure 1: Menu bar / Input parameter import & export

### 3.1 Color Schemes (Appearance)

The interface is available in various color schemes, each in a light and dark version. These can be selected via **Menu Bar > Appearance > {light / dark} > {color}** (see Figure 2). Figure 3 shows an example of a dark color scheme.

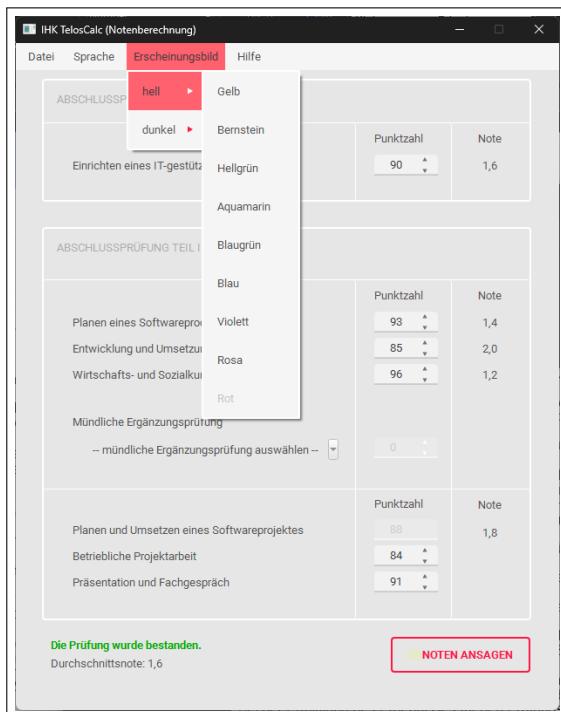


Figure 2: Available appearance modes

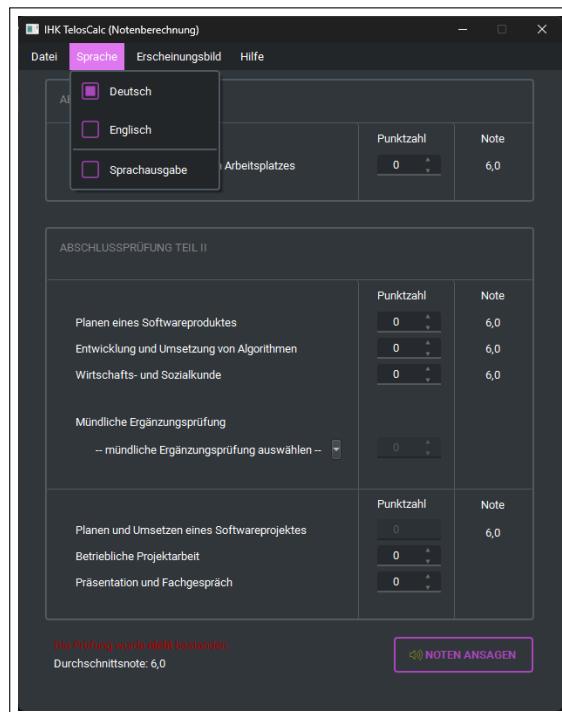


Figure 3: Dark mode / Language options

Under **Language**, you can switch between the German and English versions of the application (see Figure 3). The checkbox next to the language indicates which one is active. The **Speech Output** option is also available here; more details can be found in Section 3.3.

### 3.2 Input Parameters

Input parameters can be saved or loaded via **File > {Load Input Parameters / Save Input Parameters}** (see Figure 1). All input values from the score fields are stored in JSON format. When loading a file, all existing inputs are overwritten by the values from the JSON file.

### 3.3 Speech Output & Accessibility

Enabling the speech output option activates an audio-assisted navigation mode. When hovering over GUI elements with the mouse, a descriptive text is spoken. The same applies when navigating between GUI elements using the Tab key.

The Announce Grades button is also enabled in this mode. When clicked, all intermediate grades, the overall average, and the final examination result (pass/fail) will be spoken aloud in the selected output language.

All essential GUI elements can be accessed using the Tab key. The top menu can be accessed using the Alt key. Navigation inside it is possible using the arrow keys, space bar, and Tab, and menu items can be selected using Enter. Pressing Esc closes the top menu again.

## 4 Grade Calculation

The grade calculation follows the official criteria defined in the training regulations, BBiG, and official IHK documents. Specifically, whether the examination is passed or failed follows the process shown below:

**Fachinformiker/Fachinformatikerin  
Fachrichtung Anwendungsentwicklung**  
Ausbildungsordnung vom 01.08.2020

Die Abschlussprüfung ist bestanden, wenn die Prüfungsleistungen – auch unter Berücksichtigung einer mündlichen Ergänzungsprüfung – wie folgt bewertet worden sind:

1. im Gesamtergebnis von Teil 1 und Teil 2 mit mindestens „ausreichend“,
2. im Ergebnis von Teil 2 mit mindestens „ausreichend“,
3. in mindestens drei Prüfungsbereichen von Teil 2 mit mindestens „ausreichend“ und
4. in keinem Prüfungsbereich von Teil 2 mit „ungenügend“.

Der Prüfling kann in einem Prüfungsbereich eine mündliche Ergänzungsprüfung beantragen.

Dem Antrag ist stattzugeben,

1. wenn er für einen der folgenden Prüfungsbereiche gestellt worden ist:

- a) Planen eines Softwareproduktes,
- b) Entwicklung und Umsetzung von Algorithmen oder
- c) Wirtschafts- und Sozialkunde,

2. wenn der benannte Prüfungsbereich schlechter als mit „ausreichend“ bewertet worden ist und

3. wenn die mündliche Ergänzungsprüfung für das Bestehen der Abschlussprüfung den Ausschlag geben kann.

Die mündliche Ergänzungsprüfung darf nur in einem einzigen Prüfungsbereich durchgeführt werden.

Die mündliche Ergänzungsprüfung soll 15 Minuten dauern.

Bei der Ermittlung des Ergebnisses für den Prüfungsbereich sind das bisherige Ergebnis und das Ergebnis der mündlichen Ergänzungsprüfung im Verhältnis 2 : 1 zu gewichten.

Selection of the optional oral supplementary examination is only possible if the candidate is eligible based on their written results. Only then can the corresponding selection element be reached via the Tab key or clicked using the mouse. A menu opens in which eligible subjects can be selected (invalid ones are greyed out). This process is shown in Figure 4. Only after selecting a valid supplementary examination subject can a score for it be entered.

## 5 Troubleshooting

**Program does not start:** Check antivirus/SmartScreen; try running as administrator.



Figure 4: Oral supplementary examination

**Configuration error:** Rename/delete `telosCalc.conf`; restart the app if needed.

**TTS does not work:** Run from source; check console output; install missing dependencies. On Windows, also check language settings and ensure German & English speech packages are installed.