

Wadokei - user manual

Wadokei is a web application that simulates the function of a traditional Japanese solar clock. This type of timekeeping device is characterized by variable lengths of daytime and nighttime hours, depending on the current position of the Sun relative to the user's location. The application provides a visual clock interface with animated hands and the ability to change location.

To use the Wadokei application, run the backend.py file. On first launch, the program will automatically check for and install any missing libraries. The application will then start a local server and open the interface in the default web browser (at the address: <http://localhost:5000/>).

Available Features:

- **Clock face with Kanji characters**
A graphical Wadokei dial, divided into 12 segments according to the traditional Japanese time system.
- **Animated hands**
The hour and minute hands move dynamically to reflect the actual solar time. Their motion is scaled in relation to the real duration of day and night. Additionally, an internal hand indicates the current season in the zodiac calendar.
- **Second hand**
Displays how many seconds are in one minute according to the Wadokei time system for the selected location.
- **Automatic location detection**
The application detects the user's location based on their IP address and sets it as the default (under the label *Local Time*).
- **Location selection menu**
The user can choose from a list of predefined cities using a dropdown menu.
- **Custom location input**
A dedicated text field allows users to manually enter the name of any city. After entering a location, the user must confirm it by clicking the *Confirm Custom Location* button. If the location is invalid or unrecognized, the application automatically reverts to the default location.
- **Dynamic clock updates**
For each selected location, the application calculates the length of day and night based on geographic coordinates and adjusts the movement of the clock hands accordingly.

System Requirements:

- Python 3.6 or newer
- Operating system: Windows / macOS / Linux
- Web browser with JavaScript support
- Internet connection

Wadokei was developed as part of a university project for the *Inżynieria Oprogramowania* course.