

USER GUIDE

User Guide for Our Website:

Student Weather Assistant Tool – User Manual

The student weather application is a tool developed to help students quickly and intuitively check weather conditions at their places of residence. It provides access to current weather data for two different addresses, displays these locations on an interactive map, and shows average temperatures for different student groups.

Access and Login

To access the application, the user must go to the website address (either locally or online, e.g., via <http://localhost:5000>). Upon opening the site, users are prompted to log in using their personal credentials: first name, last name, and password. Once the fields are completed, simply click the "Login" button to be redirected to the personalized dashboard.

Dashboard and Weather Display

Once logged in, the student accesses a personalized page. This page displays real-time weather information for their two addresses (if they have been provided). For each location, the address is shown, followed by the current temperature and a weather description (e.g., clear sky, moderate rain, etc.).

An interactive map, located next to the text information, allows users to visualize the locations of the two addresses. Each location is marked with a colored marker that reflects the recorded temperature. Colors range from blue for cold temperatures to red for warmer ones.

Group Information

On the left side of the interface, users can select other student groups (LK1, LK2, GB1, GB2). When a group other than their own is selected, the application does not show detailed weather for each student but rather the average temperature for the group. This allows users to compare weather data collectively.

This average is calculated dynamically by retrieving the latest available data for each student in the group. A temporary "Loading..." message is displayed during data retrieval, which is then replaced by the average temperature.

Technologies Used

The tool is developed using Flask, a Python micro-framework that enables quick web application development. It uses SQLite as the database to store student data, cities, and recorded temperatures.

Weather data is fetched in real time using the Open-Meteo API, while address geolocation

is handled by Nominatim, a service linked to OpenStreetMap. For map display, we use Leaflet.js, a lightweight and powerful JavaScript library for interactive maps.

Update Frequency

Temperature data is automatically updated every hour through a background scheduled task. This ensures that the displayed readings remain relatively fresh, although the shown temperature always reflects the latest data retrieval.

Conclusion

The student weather tool is a simple, fast, and useful service designed for daily use. It combines ergonomics, accuracy, and personalization. It can also be expanded in the future with features like multi-day forecasts, weather alerts, or notifications.