

## Introduction

The latest version (prototype 3) of the weather webpage is the result of building further on the improvements of previous prototype. It attaches local storage to access previously searched weather data, without the internet. Furthermore, the webpage is at this point hosted on GitHub, permitting access from wherever. Performance, usability and accessibility have been increased over previous prototypes of this version.

## Design and Interface

The webpage keeps a modern and visually pleasing layout with natural background and transparent card type of design. If a city is searched from the user's side, and if the user is online, then the Weather API is fetched for real time weather data. If a city is not online, local storage of previously searched cities' weather data is loaded.

## Functionality

**Online Mode** – Webpage loads live weather data from an API into local storage and will be retrieved on a future occasion.

**Offline Mode** – When offline, the webpage just retrieves the previously searched cities' weather data and display them instead. Nevertheless, cities not searched before going offline are not accessible.

**GitHub Hosting** – The project is now live online and is accessible around the world without using local files.

## Strengths of Prototype 3

Users can access stored weather data without internet while being offline.

**Faster Speed** – Local storage cached data makes speeding up the load time.

**Less Bandwidth** – Saving bandwidth and decreasing API request limits, the more the API dependency has been reduced.

**GitHub hosting** – That will make the project easily accessible, collaborative, scalable, and professional.

**Clean and Responsive Design** – Makes user interface involving and responsive.

## **Weaknesses of Prototype 3**

**Offline Data** – The number of cities that can be searched offline is limited. If a city wasn't searched before being offline, it does not show any data.

**It is device Dependent** – While Prototype 2 utilized MySQL for its real time data storage, this version doesn't store the data in a central database.

**Local Storage Limitations** – The data stored in Cache is lost if user clears browser Cache or removes the data to another device.

**API Dependence for New Searches**– Users still require internet connectivity to search out other cities.

## **Conclusion**

Significantly improved) Prototype 3 is a significant improvement, it still has a clean interface, efficient functionality and contains offline accessibility and GitHub hosting. Despite this, it is not yet perfect; it has moreover limitations in its offline data availability and storage. It could also be enhanced in the future by integrating the database with MySQL for cross-device access and better offline capabilities.