

534Project Daily Log

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Project Log

GitHub commit prove link: <https://github.com/marination/534project/commits?author=HHWZHANG&since=2024-01-22&until=2024-02-08>

This document records all Hanwen's major activities and decisions from the start to the end of the project, including the project goals and expected outcomes.

Log

2024-01-22

Project Direction Decided to focus on the OpenWeather API for the R package. This decision was driven by the API's comprehensive weather data and the lack of an existing, easy-to-use R wrapper. The goal is to provide R users with straightforward access to weather forecasts, historical weather data, and various weather indicators.

- Created new repository for this project.
- Created the basic structure of the R package.
- Wrote the initial function.

2024-01-25

Function Development Developed the main function, `get_current_weather()`, `get_forecast_weather()`, which queries current weather data by city name, geographic coordinates. This function is the cornerstone of the package, providing easy access to real-time weather data.

2024-01-29

Visualization Functions

Developed the following functions for data visualization:

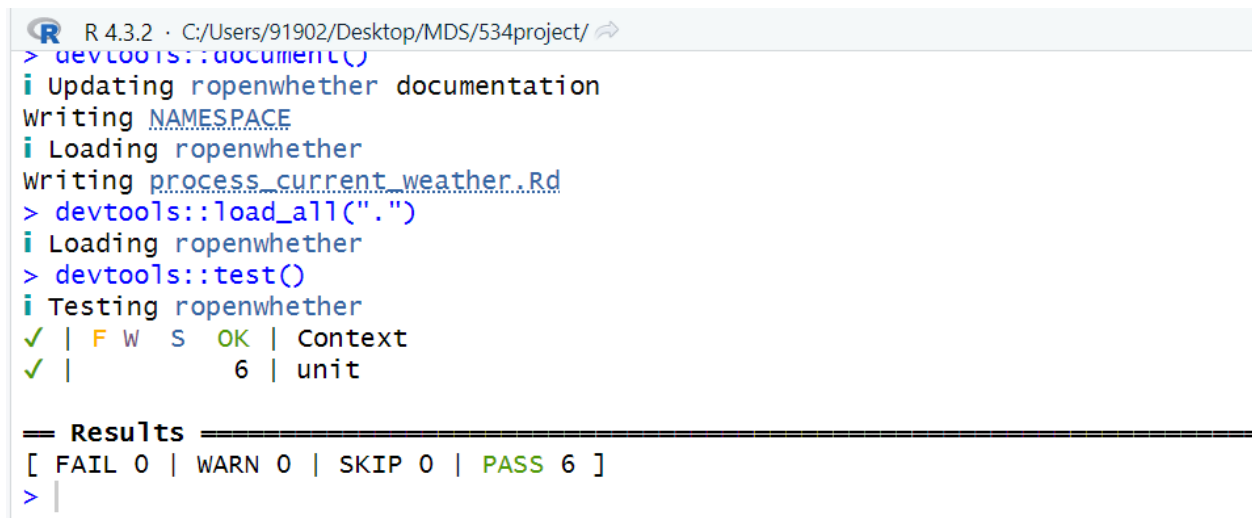
- `visualize_current_weather`: offer users a graphical representation of weather current.
- `visualize_forecast_weather`: offer users a graphical representation of weather forecasts.

2024-2-2

Testing Visualization Functions

Unit Testing

Implemented unit tests for each function using the `testthat` package. - Tests check the function's response to valid and invalid inputs, including non-existent locations and improper API keys. - Tests verify that the function produces plots when given correct data and handles errors or missing data gracefully. - Error handling: Additional tests ensure that the package functions return user-friendly error messages for common issues.



```
R 4.3.2 · C:/Users/91902/Desktop/MDS/534project/
> devtools::document()
i Updating ropenwhether documentation
Writing NAMESPACE
i Loading ropenwhether
Writing process_current_weather.Rd
> devtools::load_all(".")
i Loading ropenwhether
> devtools::test()
i Testing ropenwhether
✓ | F W S OK | Context
✓ |           6 | unit

== Results ==
[ FAIL 0 | WARN 0 | SKIP 0 | PASS 6 ]
>
```

Figure 1: unittest

Convert a single R script to a R package project

- Created a new R package project.
- Created the basic structure of the R package.
- Put the previous R script into the R folder.
- use Roxygen2 syntax to comment the function.
- use `devtools::document()` to generate the documentation.
- use `devtools::load_all()` to load the package.
- use `library(ropenweather)` to load the package.
- add `example.R` to the root folder to show the usage of the package.

2024-02-03

GitHub Actions Workflow

- Objective: Set up a basic CI workflow to run R CMD check on push and pull requests.
- Actions Taken:
 - Created a `.github/workflows/.yml` file.
 - Configured the workflow to install dependencies and run R CMD check.

- Outcome: Successfully triggered our CI run on push, identifying a dependency issue that was missed locally.

✓ Update r.yml #13

Summary

Jobs

✓ build (ubuntu-latest, 4.3.2)

✓ build (macos-latest, 4.3.2)

✓ build (windows-latest, 4.3.2)

Run details

Usage

Workflow file

Triggered via push 7 hours ago

HHWZHANG pushed

ce8b0ab

main

Status

Success

Total duration

13m 11s

r.yml

on: push

Matrix: build

✓ 3 jobs completed

Show all jobs

Figure 2: github_action

2024-02-05

Console

Terminal x

Render x

Background Jobs

R 4.3.2 · C:/Users/91902/Desktop/MDS/534project/

Undefined global functions or variables

day humidity temp_max temp_min val

0 errors ✓ | 2 warnings ✗ | 3 notes ✗

> devtools::build()

— R CMD build —

✓ checking for file 'C:\Users\91902\

— preparing 'ropenweather': (618ms)

✓ checking DESCRIPTION meta-informati

— installing the package to build vign

✓ creating vignettes (7.8s)

— checking for LF line-endings in sou

— checking for empty or unneeded dire

Omitted 'LazyData' from DESCRIPTION

— building 'ropenweather_0.1.1.tar.gz

[1] "C:/Users/91902/Desktop/MDS/ropenw

- Configured GitHub Actions to automatically run R CMD check.
- Configure github action so that it can automatically build the package after each submission.
- Adjust DESCRIPTION to comply with CRAN submission requirements. We have added the following fields to the DESCRIPTION file:
 - **Authors@R** field to specify the package's authors.
 - **License** field to specify the package's license.
 - Delete **Maintainer** field to avoid confusion.

Conclusion

- The project has made significant progress in the past two weeks.
- The package has been developed and tested.
- The package has been submitted to CRAN.
- The project help our team to learn how to develop a R package with well structured and documented code.
- The project help our team to learn how to develop and organize a sophisticated team project workflow.