

PYTHON WINTER SPRINT 2026



Date - 12th Jan 2026

FOUNDATION TRACK (FOR ABSOLUTE BEGINNERS AND NEW JOINERS)

[Expected Time to Finish - 1hr]

Resource: <https://www.youtube.com/watch?v=UrsmFxElp5k> from 6hrs 42 minutes to 7 hr 23 minutes

Core topic: Object Oriented Programming

STUDENT PROFILE SYSTEM

Step-by-Step Instructions

◆ Step 1: Create a Class

Create a class named Student.

This class will store:

- name
 - roll number
 - marks
- ◆ Step 2: Initialize the Student

Use `__init__()` to:

- accept name, roll number, and marks
- store them inside the object

This runs automatically when the object is created.

◆ Step 3: Create Methods

Add methods inside the class:

- `display_info()`
- → Prints student details
- `check_result()`
- → Prints whether the student passed or failed

(You may decide pass marks, e.g. 40)

◆ Step 4: Create an Object

Outside the class:

- Take input from the user
- Create one Student object

Example (conceptually):

“Create a student profile using the class”

◆ Step 5: Call the Methods

Use the object to:

- `display_student_info`
- `check_result`

This shows how objects use class methods.

SAMPLE RUN:

Enter student name: Ayaan

Enter roll number: 23

Enter marks: 78

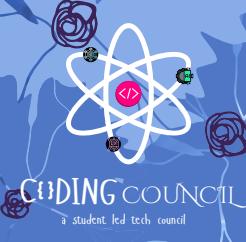
--- STUDENT PROFILE ---

Name : Ayaan

Roll : 23

Marks : 78

Result: PASS



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PROJECT TRACK (FOR ADVANCED PARTICIPANTS, MINI PROJECT)

[Expected Time to Finish – 3-4 hours]

CLI-Based API Dashboard (Country & Weather)

🎯 Objective

Build a CLI-based dashboard that:

- Fetches country information from a public API
- Fetches live weather data using coordinates
- Uses separate functions
- Runs entirely in the terminal

This task introduces real-world API integration, which is a core backend skill.

🛠 What You Are Building

A Python program that allows a user to:

1. Enter a country name
2. View country details
3. View current weather of that country
4. Exit the dashboard

🔧 Tools Required

- requests library, Install once using: pip install requests

🌐 APIs You Will Use

Country Information API

<https://restcountries.com/v3.1/name/{country}>

Weather API (using coordinates)

<https://api.open-meteo.com/v1/forecast>

No API keys required.

🧱 Step-by-Step Build Instructions

- ◆ Step 1: Create the Project File
Create a file named: dashboard.py
- ◆ Step 2: Import Required Library

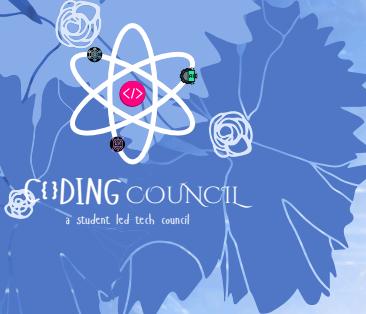
Import the requests library to make API calls.

- ◆ Step 3: Build Country Info Function

Create a function that:

- Takes country name as input
- Calls the country API
- Extracts:
 - country name
 - capital
 - region
 - latitude & longitude
- Returns this data

👉 This function should only fetch country data.



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PROJECT TRACK (FOR ADVANCED PARTICIPANTS, MINI PROJECT)

◆ Step 4: Build Weather Function

Create a second function that:

- Accepts latitude and longitude
- Calls the weather API
 - Extracts: temperature & wind speed
- Returns weather data

👉 This function should only handle weather logic.

◆ Step 5: Build the Dashboard Menu

Create a menu that shows:

1. Country Information
2. Country Weather
3. Exit

Use a loop to keep the dashboard running.

◆ Step 6: Connect Everything

Based on user choice:

- Call country function
- If weather is requested:
 - Pass latitude & longitude to weather function
- Display formatted output

◆ Step 7: Handle Invalid Inputs

- If country not found → print message
- If menu option invalid → ask again

Keep error handling simple.

(Expected Output Behaviour)

- Clear headings
- Clean CLI output
- No raw JSON printed
- Program should not crash

Submission Instructions

Upload to your GitHub repo:

python-winter-sprint-2026/Jan-12/

└── dashboard.py

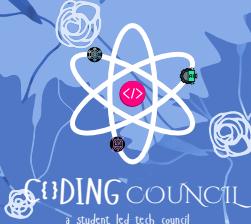
Share the GitHub repo link in the group.

Important Advice

- Don't copy-paste blindly
- Print API responses once to understand them
- Read JSON keys carefully
- Break problems into functions

Final Note

This is your first step into backend-style development. Focus on understanding, not speed.



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PROJECT TRACK (FOR ADVANCED PARTICIPANTS, MINI PROJECT)

==== SMART CLI DASHBOARD ===

1. Country Information
2. Country Weather
3. Exit

Choose option: 1

Enter country name: India

--- COUNTRY INFORMATION ---

Country : India

Capital : New Delhi

Region : Asia

==== SMART CLI DASHBOARD ===

1. Country Information
2. Country Weather
3. Exit

Choose option: 2

Enter country name: India

--- WEATHER REPORT ---

Country : India

Temperature : 20 °C

Wind Speed : 5 km/h

==== SMART CLI DASHBOARD ===

1. Country Information
2. Country Weather
3. Exit

Choose option: 3

Exiting dashboard...