Programming Challenge - API Integration

Thanks for taking time to participate in our programming challenge session. Good luck ;)

Expectations

With this exercise we expect to assess, even a bit, your code skills. Don't worry about being correct. There is no **right or wrong** answer.

Before you Start

The challenge takes 45 minutes. Make sure you have your computer properly configured (*e.g.* **Programming language, Code Editor and Internet Connection**).

Context

You will travel to a foreign city and want to know what clothes are appropriate for the weather. Since you are a programmer, instead of checking the climate conditions you rather create an application that will do the job. Luckily, AccuWeather provides an API can help you.

Instructions

Create a project that integrates with AccuWeather API, checks the weather forecast for the next 5 days and outputs which clothes you should take with you **according to the criteria below**:

AccuWeather Field	Condition	Clothes
Temperature.Maximum.Value	Less than 45 degrees	["Coat", "Winter jacket"]
Temperature.Maximum.Value	45 to 79 degrees	["Fleece", "Short Sleeves"]
Temperature.Maximum.Value	80 degrees and above	"Shorts"
Day.RainProbability or Night.RainProbability	Above 50	"Rain Coat"
Day.SnowProbability or Night.SnowProbability	Above 50	"Snow Outfit"
Day.IceProbability or Night.IceProbability	Above 50	"Shell Jacket"

1. No conversion is needed from/to Celsius.
2. Feel free to model the solution as you wish (*e.g.* . CLI, API, function, etc).
3. While coding, take the opportunity to say out loud what you are thinking (if you are comfortable with).
4. If you get stuck, just ask for help. Feel free to search (Stackoverflow, Google, Docs, etc).

API Specs

- AccuWeather Forecast API Documentation
- API KEY: `Z1F1GUzpMaHfSKq7Qz3e7lqygFhPVliP`

Request Pattern:

```
https://dataservice.accuweather.com/forecasts/v1/daily/5day/<CITY-CODE>?
apikey=<API-KEY>&details=true
```

Example:

```
https://dataservice.accuweather.com/forecasts/v1/daily/5day/60449?
apikey=Z1F1GUzpMaHfSKq7Qz3e7lqygFhPVliP&details=true
```

City Codes: 60449 (Santiago), 45881 (São Paulo), 349727 (New York).

Expected Output

Your project should present/return a JSON output as specified below:

```
// Expected JSON output
{
    "headline": "<Headline.Text>",
    "forecast": [
        {
            "date": "<Date>",
            "clothes": ["<Clothe1>", "<Clothe2>", "..."]
        },
        {
            "date": "<Date>",
            "clothes": ["<Clothe3>", "<Clothe4>", "..."]
        }
    ]
}
```

```
// Example of JSON output
{
    "headline": "Pleasant this weekend",
    "forecast": [
        {
            "date": "2022-03-24",
            "clothes": ["Coat", "Winter jacket"]
        },
        {
            "date": "2022-03-25",
            "clothes": ["Rain Coat"]
        }
    ]
}
```

Evaluation Criteria

- 12 Factor App guidelines
- Automated Tests
- Architectural Decisions
- Communication Skills
- Project Structure
- Good programming practices (DRY, YAGNI, KISS, variable/function names, comments if necessary, etc)
- Absence of Bad Smells
- Error handling

Questions that may be asked

- Why did choose your approach over another?
- What would you improve if you had more time available?
- Do you think there is overengineering in your project?
- How would you handle backpressure?
- What happens to your solution if AccuWeather goes down?
- What would you do to avoid requesting AccuWeather too much?