COMP30680 Practical 7

Assignment 2 example 2017: JavaScript and JSON

This practical is based on a previous assignment from 2017. It focuses on the use of JavaScript to query a RESTful API and manipulate the JSON data returned by the API. The data used in this assignment has been retrieved from the OpenWeatherMap API. It provides a weather forecast for Dublin for five days. Your job is to present this data in a webpage. To do this you will need to combine HTML, CSS and JavaScript.

Two files are provided:

1. ***daily.json*** – This file provides a summary of the weather forecast for Dublin for five days.
2. **detailed.json** – this file provides a series of more detailed snapshots for the weather in Dublin over the same five day period. Each snapshot covers a three-hour period.

Requirements:

1. Begin by creating a webpage called forecaster.html. When this page is opened in a browser it should give a simple introduction the purpose of the webpage. It should also include the following:
    - A simple form that allows the user to choose the number of days from 1 to 5 for which weather information will be shown.
    - A submit button.

2. When the person clicks the submit button your page should update to display the following:
    - Weather information for each day requested in a format that is easy for a person to read. The following information should be displayed by default for each day:
        - A brief summary of the overall weather forecast in both text and graphic format. Icons for the graphic format are available here: https://openweathermap.org/weather-conditions
        - The minimum and maximum temperature.
    - Within your overall webpage also include checkboxes that allow the user to switch on and off the following additional information for each day:
        - Pressure.
        - Humidity.
        - Wind speed.
    - **Note:** The data needed for this step is available in the file ***daily.json***.

3. Your page should be able to display more fine-grained information for a particular day when the user requests this, e.g. by clicking on one of the days for which summary information is provided. To do this you will need to use the data available in ***detailed.json*** and display weather information in three hour blocks for the chosen day.

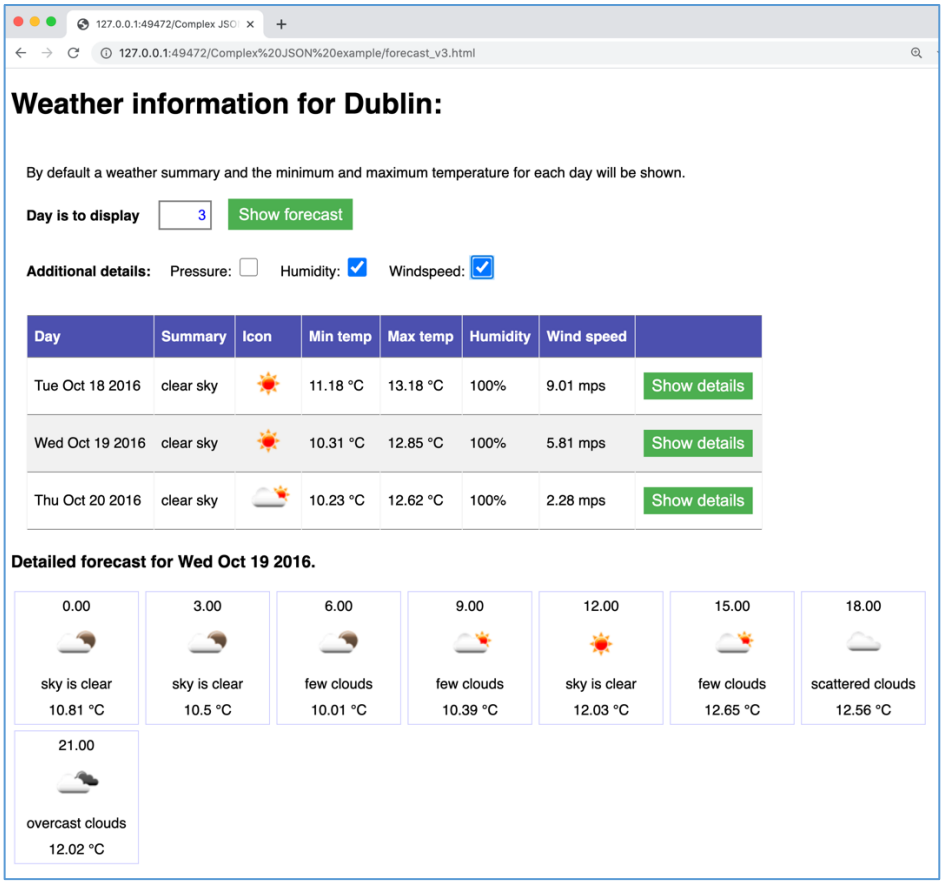
Marking

This assignment was worth 40% of the total module mark. In determining the grade, the following weighting was used:

a) **10%**: for implementing the functionality described in step 1 above.
b) **25%**: for implementing the functionality described in step 2 above.
c) **25%**: for implementing the functionality described in step 3 above.
d) **40%:** overall impression and quality of the overall design. For example, is the weather information presented in a clear manner using the correct units, have you included appropriate and effective error handing.

Solutions

The image below shows a sample solution:



A series of solution files are provided for this example: see forecast_v1 and v2. These files provide a solution to parts 1 and 2 above, and a partial, but not a full solution for part 3.

Code validation:

Your webpage should be consistent with the HTML 5 standard.

Code reuse

The webpage must be your own work. Any code snippets that are not directly written by you (e.g. used from a tutorial) must be referenced as such within your code. You must directly comment the code to explain its source. Failure to reference code that is not yours will be treated as plagiarism.

A note on the OpenWeatherMap API:

Please refer to the following page for details of the tags used in the JSON files:
https://openweathermap.org/forecast5

For this assignment data from the OpenWeatherMap API has been provided. If you would like to access the API yourself you will need to create an account and apply for an API key. Please see here for details: http://openweathermap.org/appid. Some parts of the OpenWeatherMap API are free to all users, e.g. current weather information and five-day forecasts, and these are the parts you will need to use. Other parts, e.g. long range 16 day forecasts, are only available for professional and enterprise users.

The following URL were used to retrieve the data used in this assignment:

http://api.openweathermap.org/data/2.5/forecast/daily?id=7778677&mode=json&units=metric&cnt=5&APPID=19b104f014c41d11939f615df3a80edf

http://api.openweathermap.org/data/2.5/forecast/?id=7778677&mode=json&units=metric&APPID=19b104f014c41d11939f615df3a80edf