



Assignment 3: UK Weather Info Site

CS5002 – Programming Principles and Practice
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Due Date: Friday 6th November 2015 9pm
Weight: 30% of the module grade

Aims

The aim of this assignment is that you should demonstrate your ability to develop JavaScript code to make a website interactive using client-side scripting. You will be using a real-world dataset of moderate complexity provided in the form of an array of JavaScript objects, so you will need to show that you can access the content of objects and manipulate the data to fit the requirements for the application.

Requirements

In this assignment you will develop an interactive web page that allows a user to explore recent data from UK weather stations (provided by the UK Met Office). It should be possible to identify what the minimum/maximum value is for temperature and wind speed as well as to explore all the data available for a day and time chosen by the user.

The data is provided in the form of a JavaScript source file that can be included in a web page and that contains code to assign the data to a global variable `weatherData`. Also provided is the web page itself in a raw form without any JavaScript (except the data) included. Your task will be to write the JavaScript code to make this web page interactive so that it displays the data that the user selects.

The specific requirements for the page are:

1. The selection boxes at the top of the page should allow the user to select from the dates and times for which data is available.
2. The first table on the page (`#minMax`) should display the minimum and maximum temperature and wind speed for the selected day and time as well as the station name and the region in which the station is located.
3. The second table (`#weatherData`) should display all the data for the selected day and time ordered alphabetically by station name.
 - a. Alternating rows should be displayed with white/lightgrey backgrounds to aid in reading the table.

- b. The minimum and maximum reading for each measure should be highlighted by making the value bold.
4. The data contains a number of readings of “-99” or “-99.0”, which are missing values. Your code should ignore those readings.

Extensions

There are a number of possible extensions. For example, you could provide a link to Google Maps for every weather station using the latitude/longitude values. You could also add another selection box that allows a user to select a specific station instead of selecting the time of day. This should change the first table to show the minimum/maximum values for the given station and list the time. The second table should show all the values for the selected station ordered by time to allow the user to study the development of local weather conditions over the course of a day. You should attempt at least one extension to gain a mark above 17.

Inputs

The skeleton web page and the input data can both be found on StudRes at:

<https://studres.cs.st-andrews.ac.uk/CS5002-PPP/Practicals/CS5002-assignment3/>

Deliverables

You should submit a report and your code – HTML and Javascript files – as a .zip file to MMS. Please do not submit the weatherData.js file as this was provided.

Weighting and Marking

This assignment is worth 30% of your total coursework mark for CS5002. Marking will follow the mark descriptors as set out in the student handbook. Late submission will be penalised as set out in the student handbook (see <http://www.cs.st-andrews.ac.uk/student-handbook>).

You are reminded to follow the University’s guidance on Good Academic Practice (<https://www.st-andrews.ac.uk/students/rules/academicpractice/>)