Coding Assignment for Web App Developer

Objective
The objective of this assignment is to evaluate you on your skillset in Javascript, CSS3, responsive design and above all, your ability to learn new technologies and apply them to a real-life project.

Application User Interface
You are tasked with developing a fictitious eye testing application based on HTML5. The application will need you to understand the HTML5 canvas APIs in Javascript, CSS3 and responsive design. For more on what responsive design means, go to http://www.techrepublic.com/blog/web-designer/how-to-get-started-with-responsive-webdesign/1769/

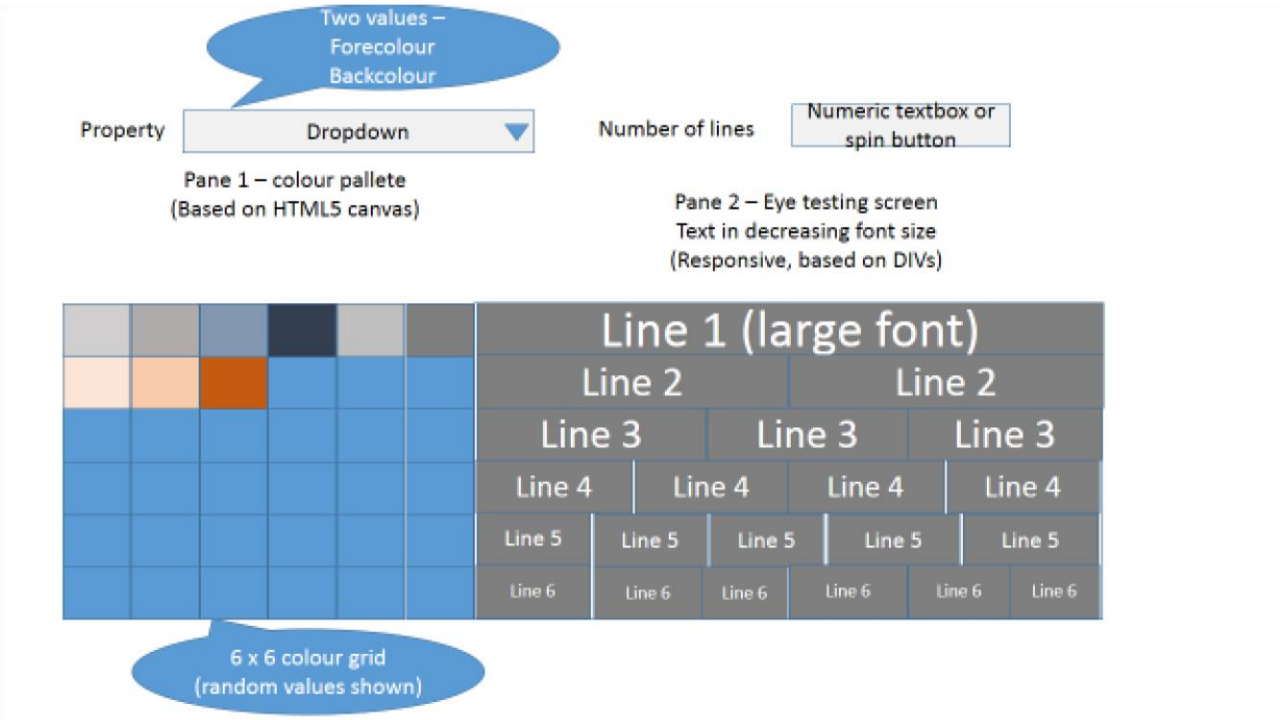
The application you will develop will be a HTML page with 4 elements as illustrated below and sketched below:

1. A dropdown that allows the user to select from two values

2. A numeric textbox or spin button that allows you to enter integer values specifying the number of lines in the eye test grid

3. A colour palette pane based on the HTML5 canvas - few colour values shown here - you need to have 6x6 unique colours

4. A pane based on CSS which has a pyramid of text in decreasing font sizes, similar to the ones you will find on a typical visual eye test



Application Functionality

1. When the user selects a value from the Property dropdown (say Forecolour), the active forecolour on the right half should be highlighted on the colour palette.

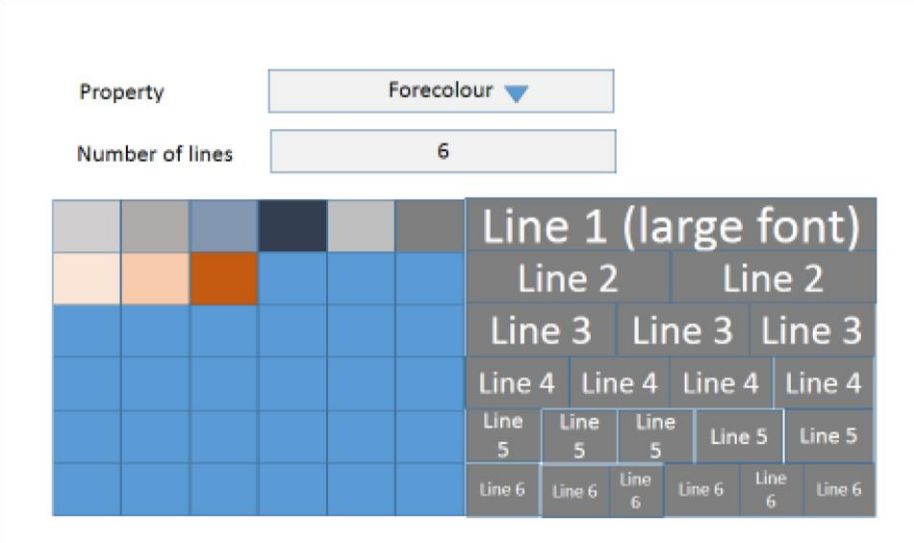
2. When the user changes the number of lines, the right pane should automatically adjust and render that many number of lines. Further each line should have the number of sections as the line number (that is line 4 will have 4 sections, line 5 will have 5 sections, etc.,) and the font size of each line should be smaller than the preceding line.

3. If the user clicks / taps on any other colour, the eye testing screen on the right should update with the selected colour (forecolour or backcolour depending on the value of the Property dropdown).

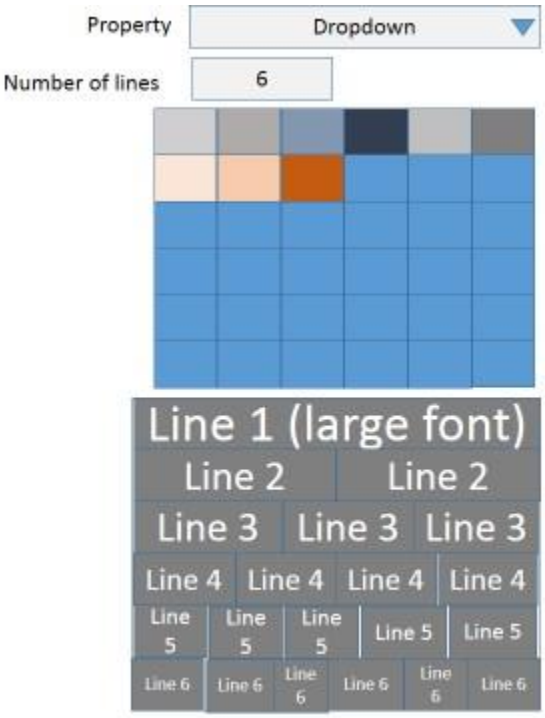
4. The application should work both on desktops and touch-based screens.

5. The screen should adapt responsively according to the device on which it is being used. Specifically, three other scenarios are given here (Essentially, the colour palette can be of fixed dimensions but the eye testing pane should occupy the rest of the screen).

Desktop with smaller width or a tablet in Landscape Mode



Mobile phone in Portrait Mode



6. Overall, you can make simplifying assumptions where needed, as long as you do not deviate from the specification too much - the idea is to also understand how you deal with ambiguity.

Evaluation

You will be evaluated on the following 5 dimensions on a 4 point scale (Poor, Below par, Above average, Distinctive):

a) Learnability - Have you understood HTML5 canvas APIs, response design principles well

b) Javascript - Have you applied Javascript concepts well by using sound object structures to deliver your business logic? Have you used Javascript well for DOM manipulation?

c) CSS3 and UI design - Do you understand CSS3 styling and how to bring responsive design to a real page?

d) Problem solving - How have you handled the core colour palette functionality? How good is your understanding of a graphical coordinate system?

e) Code quality - Is your code logically organised? Is your code readable? Can another developer understand your code without needing help from you?