CS2204-1617B past paper

Fundamentals of Internet Applications Development (City University of Hong Kong)

CITY UNIVERSITY OF HONG KONG

Course code & title	:	CS2204 - Fundamentals of Internet Applications Development
Session	:	Semester B 2016/17
Time allowed	:	Two hours

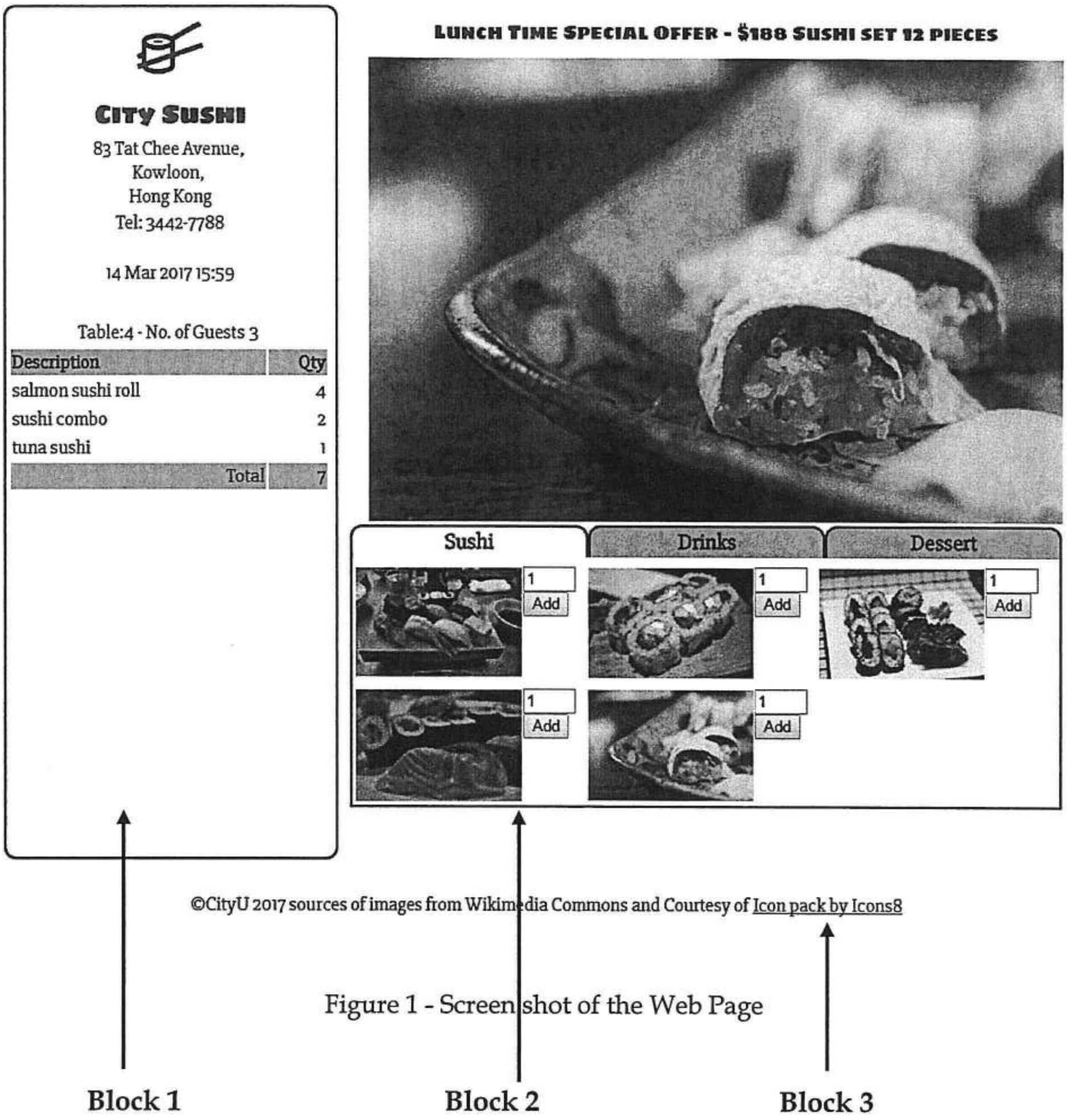
This paper has eight pages (including this cover page).

1. There are 4 questions in total.
2. Answer ALL questions.
3. A set of reference pages is provided at the end.

*This is a **closed-book** examination.*

No materials or aids are allowed during the whole examination. If any unauthorized materials or aids are found on a candidate during the examination, the candidate will be subject to disciplinary action.

Answer all questions in this paper.



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CITY SUSHI

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Kowloon,
Hong Kong
Tel: 3442-7788

14 Mar 2017 15:59

Table:4 - No. of Guests 3

Description	Qty
salmon sushi roll	4
sushi combo	2
tuna sushi	1
Total	7

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Figure 1 - Screen shot of the Web Page

Question 1 (25%)

Write down only the HTML for the Web pages according to the requirements below. You may use empty strings for values that are not given. Include all structural tags (with possible ids) which would enable you to define styles in Question 2.

You need to write HTML elements only for the body part of the Web page. The Web site has 4 folders, *html, css, js* and *images* under the root folder holding Web pages, style sheets, Javascripts and images/videos respectively. Appropriate URLs should be used in your answer.

The Page (Figure 1)

a) This page consists of 3 main blocks on top of the body. [1 mark]

Block 1

b) As shown in Figure 1, this is the block containing the order information. At the top there are an image logo, shop name, address, telephone number and the date and time. [3 marks]

c) Following the above, the ordered items information is presented as a full-structure table. The number of guests should be accessible later by CSS or Javascript. Only two rows of ordered items are required to be shown. [7 marks]

Block 2

d) This block contains two main sub-blocks. The first one consists of promotional materials: a heading and a video. The video mark-up should be written in a way that 2 formats (mp4 and ogg) can be played with multiple browsers. [4 marks]

e) The second sub-block is the menu. 3 lines of text (Sushi, Drinks & Dessert) are used as tabs and when clicked the menu items below will be changed. [2 marks]

f) Each menu item is made up of a photo, a text box for order quantity in which only number can be entered, and a button labelled as "add". Multiple menu items exist but HTML for only one is required. [5 marks]

g) HTML for the other 2 tabs (i.e. Drinks & Desert) are required but their content can be left empty. [2 marks]

Block 3

h) This is the footer block containing one line of text. [1 mark]

Question 2 (25%)

Add styles to the Web page by writing CSS rules (i.e. no inline styles and no table for layout control) for the HTML in Question 1 according to the requirements below. No need to write styles not asked for, even if they are shown in the screen shot.

Remember to add structural tags, e.g. <div> and identification attributes (e.g. id or class) to your answers in Question 1 or state clearly which and how HTML elements are changed in the answer of this question. You should select elements as specific as possible but at the same time not over using the id attribute.

The Page

a) No positioning scheme other than normal flow should be used for the whole page. Set margin and padding settings for all elements to 0px and 1px respectively. The whole page is on top of the body, 99% in width and height, and centered. [4 marks]

Block 1

b) This block is placed at the left with a width of 30% and height 85%. All information is centered. [2 marks]

c) The table occupies the full width of the block with text of first column aligned left except the footer row, and second column aligned right; the background color of the heading and footer is silver. [6 marks]

Block 2

d) Make sure this block does not overlap with Block 1. [1 mark]

e) Set the video width to 95% and place it in the center. [2 marks]

f) In the second sub-block, the 3 tab texts are of equal width and together they take up the full width of the container; each tab also has borders other than the bottom one, round corners at the top left and top right. [3 marks]

g) For the menu items, each row can have up to 3 items; inside the item the photo is on the left with both of the text box and button have a width of 20%. [6 marks]

Block 3

h) This block is always on a new line. [1 mark]

Question 3 (25%)

Add Javascript to the Web pages to achieve the following requirements. You should highlight changes to the HTML codes, if any, in the answer of this question.

a) Write the line of HTML to use a given external Javascript library x.js in the js folder. [1 mark]
In this library, a function *getMenuItems* is provided if when called returns an Array of objects. Each object describes a menu item with example in JSON format as:
{code:"s1", desc:"sushi combo", photo:"sushi-1.jpg", price:130}

b) With Javascript or otherwise, set up event handlers for all "Add" buttons in the menu items. Write codes for the event handler such that when a button is clicked a row is added at the end of ordered items in the table. You may modify HTML written in question 1 to solve this problem. [12 marks]

[Hints : get descriptions for all menu items by calling the library function getMenuItems( ); use ids in Add buttons to identify the menu item code and to relate to the quantity input boxes, e.g. s1 and s1-qty; description of the item can then be obtained by searching the array of menu item objects]

c) Write a function *recal( )* to calculate the total quantity whenever the table of ordered items is updated with a new entry. The new total quantity should be put in the footer row. [6 marks]

d) With Javascript or otherwise, set up event handlers for the 3 tabs (Question 1 – Block 2(e)). Write codes for the event handler such that when clicked the corresponding set of menu items will be shown as in Figure 2. The background color for the clicked tab is set to white while the other two are set to silver. [6 marks]

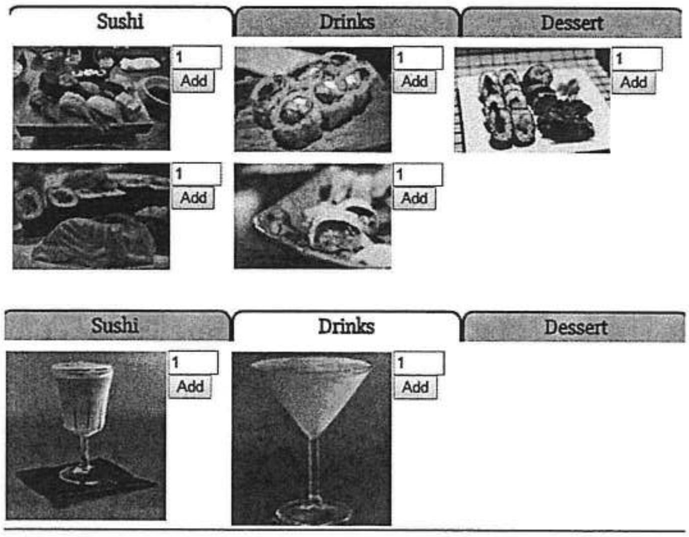

Figure 2 – Before and after the "Drinks" tab is clicked

Question 4 (25%)

a) Given the following HTML codes:

```
<form action="..." method="get">
...
<input type="text" name="firstname" value="first name" >
...
<input type="radio" name="agegroup" value="11-20" >
<input type="radio" name="agegroup" value="21-40" >
<input type="radio" name="agegroup" value="41-60" >
...
<input type="checkbox" name="nature" value="nature" >
<input type="checkbox" name="wonders" value="wonders" >
...
</form>
```

i) state one situation each when method "get" or "post" should be used
ii) why name must be used for <input>
iii) why one name is used for "radio" type <input>
iv) why different names are used for "checkbox" type <input> [8 marks]

b) With a sketch diagram example, explain what the following positioning schemes are and how they should be used.

i) relative
ii) absolute
iii) fixed [9 marks]

c) Consider the following Javascript statements :

```
var x=5;
y=”5”;
if (x == y ) alert(“true”); else alert(“false”);
if (x === y ) alert (“true”); else alert(“false”);
x=”5”;
if (x == y ) alert(“true”); else alert(“false”);
if (x === y ) alert (“true”); else alert(“false”);
alert(y);
alert(z);
```

Write down the results of all alert messages seen or possible error by running the above statements. [3 marks]

Using the above statements and the alert messages as examples, explain the concepts about variable creation and variable type in Javascript. [5 marks]

~ End ~

CS2204 Fundamentals of Internet Application Dev

CSS Reference

Name	Values
'background-color'	<color> | transparent | inherit
'background-image'	<uri> | none | inherit
'background-position'	[[<percentage> | <length> | left | center | right] [<percentage> | <length> | top | center | bottom]?] | [[left | center | right] || [top | center | bottom]] | inherit
'background-repeat'	repeat | repeat-x | repeat-y | no-repeat | inherit
'background'	['background-color' || 'background-image' || 'background-repeat' || 'background-attachment' || 'background-position'] | inherit
'border-color'	[<color> | transparent]{1,4} | inherit
'border-radius'	<length> | <percentage>
'border-spacing'	<length> <length>? | inherit
'border-style'	<border-style>{1,4} | inherit
'border'	[<border-width> || <border-style> || 'border-top-color'] | inherit
'bottom'	<length> | <percentage> | auto | inherit
'box-shadow'	none | <h-shadow> <v-shadow>[blur] [spread] [color] | inherit
'color'	<color> | inherit
'display'	inline | block | list-item | inline-block | table | inline-table | table-row-group | table-header-group | table-footer-group | table-row | table-column-group | table-column | table-cell | table-caption | none | inherit
'float'	left | right | none | inherit
'font-size'	<absolute-size> | <relative-size> | <length> | <percentage> | inherit
'font-style'	normal | italic | oblique | inherit
'left'	<length> | <percentage> | auto | inherit
'height'	<length> | <percentage> | auto | inherit
'list-style-image'	<uri> | none | inherit
'list-style-position'	inside | outside | inherit
'list-style-type'	disc | circle | square | decimal | decimal-leading-zero | lower-roman | upper-roman | lower-greek | lower-latin | upper-latin | armenian | georgian | lower-alpha | upper-alpha | none | inherit
'list-style'	['list-style-type' || 'list-style-position' || 'list-style-image'] | inherit
'margin-right' 'margin-left'	<margin-width> | inherit
'margin-top' 'margin-bottom'	<margin-width> | inherit
'margin'	<margin-width>{1,4} | inherit
'overflow'	visible | hidden | scroll | auto | inherit
'opacity'	number | inherit
'padding-top' 'padding-right' 'padding-bottom' 'padding-left'	<padding-width> | inherit
'padding'	<padding-width>{1,4} | inherit
'position'	static | relative | absolute | fixed | inherit

Name	Values
'text-align'	left | right | center | justify | inherit
'text-decoration'	none | [underline || overline || line-through || blink] | inherit
'text-indent'	<length> | <percentage> | inherit
'text-transform'	capitalize | uppercase | lowercase | none | inherit
'top'	<length> | <percentage> | auto | inherit
'transform'	translate(x,y) | scale(x,y) | rotate(angle)
'vertical-align'	baseline | sub | super | top | text-top | middle | bottom | text-bottom | <percentage> | <length> | inherit
'visibility'	visible | hidden | collapse | inherit
'width'	<length> | <percentage> | auto | inherit
'word-spacing'	normal | <length> | inherit
'z-index'	auto | <integer> | inherit

Javascript Reference

Array Object Properties

Property	Description
constructor	Returns the function that created the Array object's prototype
length	Sets or returns the number of elements in an array
prototype	Allows you to add properties and methods to an Array object

Document / Window / String Object Properties and Methods

Property / Method	Description
document.forms	Returns a collection of all the forms in the document
document.getElementById()	Returns the element that has the ID attribute with the specified value
document.getElementsByName()	Accesses all elements with a specified name
document.getElementsByTagName()	Returns a NodeList containing all elements with the specified tagname
document.URL	Returns the full URL of the document
document.write()	Writes HTML expressions or JavaScript code to a document
document.querySelector()	Returns the first element that match the selector
document.querySelectorAll()	Returns a collection of all elements that meatch the selector
window.localStorage.getItem()	Returns a string/object based on a key/attribute
window.localStorage.setItem()	Sets a string/object based on a key/attribute
window.location.search	Returns the query portion of the URL including the "?" character
substring(start [,end])	Extracts the characters from a string, between two specified indices
split([separator])	Splits a string into an array of substrings