CITY UNIVERSITY OF HONG KONG

Course code & title :   CS2204 Fundamentals of Internet Applications Development

Session   :   Semester A 2016/17

Time allowed   :   Two hours

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

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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.*
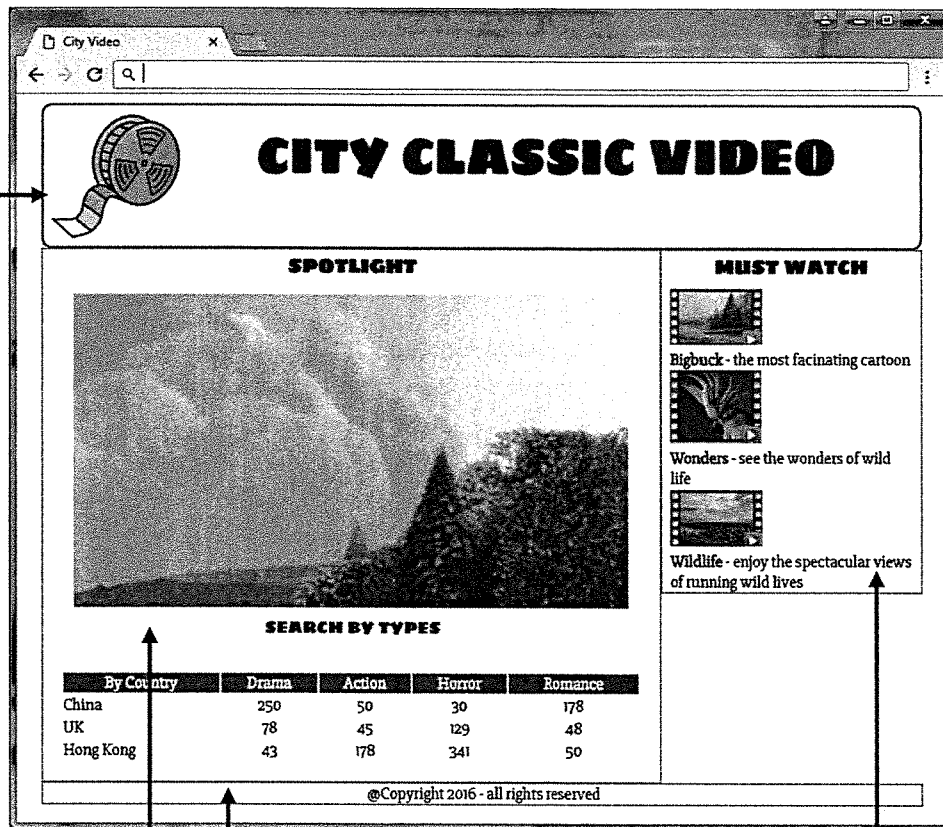
Answer all questions in this paper.

Figure 1 - Screen shot of the Web Page

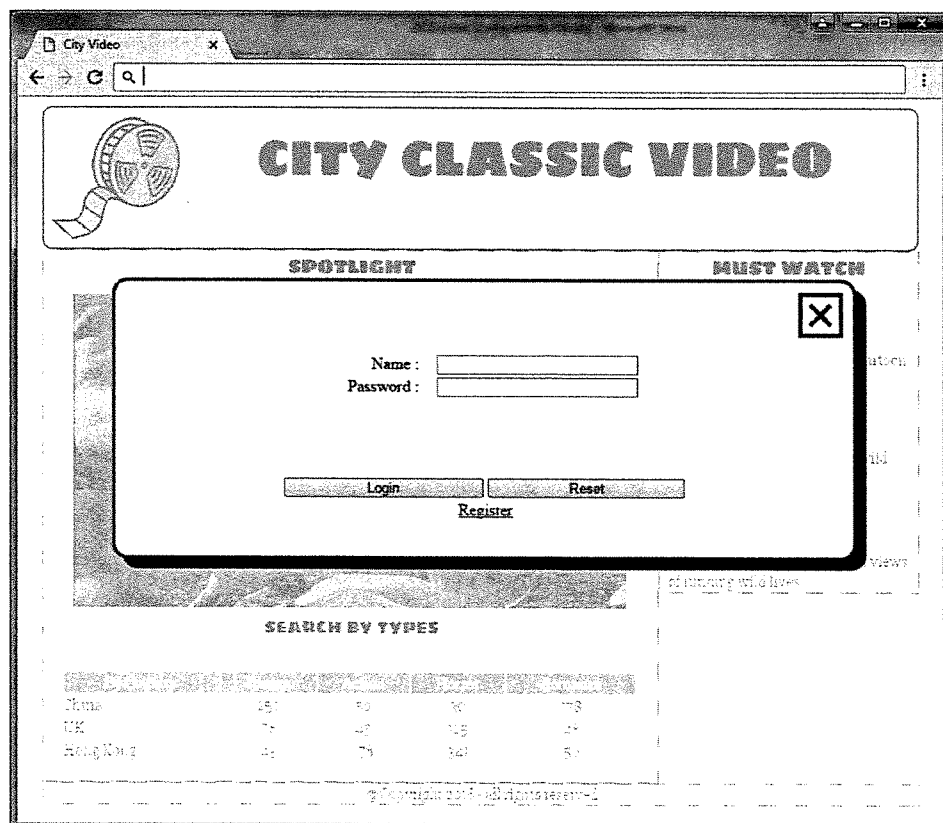**Block 1** **Block 2** **Block 4**   **Block 3**

Figure 2 - Screen shot with the Login Block

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 *res* under the root folder holding Web pages, style sheets, Javascripts and images respectively. Appropriate URL should be used in your answer.

The Page (Figure 1)
a)   This page consists of 4 main blocks on top of the body.   [1 mark]

Block 1
b)   As shown in Figure 1, this is the header block containing the image logo and a Web site title.   [3 marks]

Block 2
c)   This is the left block for video preview and type information. There is a heading (*Spotlight*) followed by a video which could be viewed in multiple browsers with 2 formats : mp4 and ogg. The video should play after loading. You may use any file name for the video.   [3 marks]

d)   Below the video is a table with caption, showing the number of available videos grouped by countries and types. Write HTML for a full structure table. You only need to show the first 2 rows (the heading included).   [5 marks]

Block 3
e)   This block contains information of different videos after a heading (Must Watch). Each video item consists of an image and a description with the first word being the video title. Write HTML for 1 video item only.   [4 marks]

Block 4
f)   This is the footer block containing one line of copyright information.
                                                                       [1 mark]

Login Block (Figure 2)
g)   This block is outside the page. It contains an image and a form for user login.
                                                                       [1 mark]

h)   The form consists of 4 inputs:
        i)   user name
        ii)   password
        iii)   confirm password (not shown in Figure 2)
        iv)   contact email (not shown in Figure 2)

        together with a submit, reset button and a link labelled as "Register".
                                                                       [7 marks]

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 shots.

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.

Page 1
a)   The whole page is on top of the body, 95% in width relative to the body and placed center.   [2 marks]

Block 1
b)   The logo image is at the left of the Web site title. Text in the title is all set to uppercase.   [2 marks]

Block 2
c)   This block is 70% in width, placed at the left.   [2 marks]

d)   Set the video width to 90% and place it in the center.   [3 marks]

e)   Set the table width to 100%; text inside aligned in the center but text in the first column aligned to the left; set background color of the heading to Gray.
                                                                    [3 marks]

Block 3
f)   For each video item, the description is always under the image and video titles appear in bold; make sure there are no bullets shown.   [2 marks]

Block 4
g)   This block is always on a new line.   [1 mark]

Login Block
h)   This block is hidden. If it is shown, it will be in a fixed position, 25% from the top, with a width of 80% and set in the center.   [4 marks]

i)   Set the width of labels and input fields to 40% and 30% respectively. Text of labels is aligned right as shown in the screen shot.   [5 marks]

j)   The submit and reset buttons are placed in the center   [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 the library, one of the functions provided is *checkLogin* which returns a Boolean. A true value indicates the user has login and a false means not login. This function will be used in the following questions.

b) In Block 3, use Javascript to set up event handlers for all images in video information items. When the images are clicked, the event handler should check whether the user has login. If yes, a function *showVideo* is called otherwise call function *showLogin*. The exact number of video items is not known until the page is loaded. [8 marks]

c) Write Javascript for function *showVideo* for the following requirements :
   - the video in Block 2 (*Spotlight*) will be changed to the one represented by the clicked image
   - assume that the file name of the video is defined as the id attribute
   - multiple-browsers viewing with 2 formats of the video should be maintained [8 marks]

d) Write Javascript for function *showLogin* and <u>other necessary codes</u> for the following requirements :
   - show the Login Block and set the Web page to 80% transparent
   - when the image (close icon) is clicked, the Login Block will be hidden and transparency of the Web page returns to 0%
   - when the link "Register" is clicked, the hidden labels and fields (Confirm Password and Contact Email - Figure 3) will be shown; these will be hidden again when the Login Block is closed; make sure the destination of the link will not be loaded [8 marks]

Figure 3 - Before and after the "Register" link is clicked

Question 4 (25%)

a) Give a brief description about what the followings are and how they relate to each other :

   i) Internet
   ii) Intranet
   iii) Extranet   [7 marks]

b) Explain the use of the following CSS selectors. Illustrate your answer with one example for each of them.

   i) Universal selector
   ii) Attribute selector
   iii) Pseudo class   [9 marks]

c) Briefly explain the main use of the following types of Javascript.

   i) inline script
   ii) external script
   iii) embedded script

                                                                    [9 marks]

~ End ~

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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

Name	Values
'position'	static | relative | absolute | fixed | inherit
'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