2017 ICT Paper 2C

2Cq1ai

24 bit true color

RGB -- each 8 bit

#FFFFFF white

#00FF00 green

aspect ratio = 5472:3648 = 3:2

photo paper 8"x10"

paper orientation--landscape (橫,16:9, 4:3, 3:2) and portrait (直,3:4, document, 人像相 etc)

different aspect ratio

1. leave borders (fit-in)

2. crop some parts (fill-in)

2Cq1aii

5472x3648

case 1, use 600 dpi: 8'x10' photo needs 4800x6000 pixels

case 2, use 2400 dpi: 8'x10' photo needs 19200x24000 pixels

The image size is 5472x3648 which fits on using 600dpi.

If 2400dpi is used, the printed image will be very small in size.

2Cq1b

GIF supports only 8 bit colour depth while SWF supports 24 bit true colour.

SWF supports interactivity (script , buttons).

SWF supports audio.

SWF is vector graphic while GIF is BITMAP graphic

SWF animation uses keyframes to make motion tweens.

(keyframe1------------🡪keyframe2-------------🡪keyframe3----------🡪keyframe4)

GIF animation stores frames of bitmap graphics, basic unit of time=1/100s

2Cq1c

toggle a bit, 0🡪1, 1🡪0

toggle by program

|  |  |
| --- | --- |
| n=-1  x=x\*n  x=x\*n  x=x\*n  x=x\*n | **x=-x**  **x=-x**  **x=-x**  **x=-x** |

**step 1: Toggle** / Invert the colours of the text / Change the color of the text to white / Change the image of the company name to negative.

step 2: Put the image (text) on the top of the camera image.

step 3: Combine them together to form a single image.

How to remove background?

1. use magic wand to select the background. If the tolerance value(similarity value) is set to 30, more pixels/larger area of similar color will be chosen.

2. select the part of the image not selected by the magic wand./Select the unselected parts./Select the objects other than the background.

3. copy the image/objects and paste it on another image/background.

2Cq1di

Different versions of web browsers are used in two computers and they have different default settings. / The font used by the web page is missed in a computer.

2Cq1dii

Use CSS to link to an external font like Google font.

Upload the font to the website and use CSS to link and use the font.

Convert the text to an image. (larger file size, takes longer time to download)

Recommend users to install a particular font. (not practical)

spam / junk email / advertisement

Convert the text to an image and use HTML email to send the image.

The email is not filtered by the email server as spam.

2Cq1e

The contents / compositions of the photos are different.

The compression ratio for a photo with simple shapes and colour combination is smaller.

2Cq1fi

No compression/Lossless compression is applied by RAW, RAW can keep most data of the image.

2Cq1fii

RAW needs special software to view the image, TIFF is most common and has more software supports.

TIFF can contain multiple images. (used by scanner, but PDF is more common now)

TIFF -- store multiple images in a file, suitable for storing scanned multi-pages documents

GIF -- store multiple images in a file, support animation only

2Cq2a

留意kHz單位，留意時間單位

file size = 44100 x 60 x 16 x 2 bit

file size = 44100 x 60 x 16 x 2 / 8 / 1024 / 1024 MB

= 10.093 MB

2Cq2bi

The file has a smaller file size.

Musical notes are editable.

Musical notes can be input directly.

(A MIDI note stores note number, volume, duration of an instrument)

2Cq2bii

He can input musical notes directly using MIDI software.

He can play MIDI piano or other MIDI instruments and record the musical notes.

2Cq2c

reduce the sampling rate (standard CD quality = 44100Hz)

reduce the sample size (common values 24 bit, 16 bit (standard CD), 8 bit)

reduce the number of channels (change from stereo to mono)

2Cq2d

browser -- display scroll bar / menu bar / toolbar / address field / resizable

\* pop-up window

Users had to manage multiple windows/tabs on their screens because popup windows would open a separate window/tab on top of the user’s current window.

When a modal window opens, it opens inside the current page. This means that users only need to work within their browser window and don’t have to deal with extra windows popping up.

A lightbox popup is a popup that appears on top of the page's content while the rest of the website is inactivated and **dimmed out**. As such, they make sure the user **focuses** on the popup rather than the rest of the screen. **Better user experience**.

58 days -- use client side script to calculate the number of days

1. get the current date from the client side computer

2. number of days = grad.date - current date

2Cq2ei

Embed the audio HTML code on the page for the upper/lower frame in web page A.

2Cq2eii

Embed the audio HTML code on the page for the lower frame in web page A.

Set the **attribute** of the audio HTML code loop=true

SWF animation / GIF animation / sound effect / background music / video

2Cq2eiii

Embed the audio HTML codes on the web page after successful login.

2Cq2eiv

Embed the audio HTML code on the page for the upper frame in web page A.

annoying / volume / mute, bandwidth used

\*

<https://www.w3schools.com/html/html5_audio.asp>

In HTML5, there are 3 supported audio formats: MP3, WAV, and OGG.

**Plugins are not required.**

<audio controls>

<source src="horse.ogg" type="audio/ogg">

<source src="horse.mp3" type="audio/mpeg">

Your browser does not support the audio element.

</audio>

2Cq3

network , update one common database, interactive, real time system

prevent crash of ticket booking

Responsive Web Design

Responsive web design makes your web page look good on all devices (different screen sizes, orientation)

Responsive web design uses only HTML and CSS.

2Cq3a

Find the closest cinemas.

Suggest routes to go to the cinemas.

server-side only : user authentication

validation : client-side + server-side

2Cq3bi

When each of the following tasks is carried out in the website, should a client-side script or server-side script be used?

server-side script. The data of available seats are stored in the database on the server side.

server side -- web pages + database

client-side script. The checking response time is short.

Reduce server work load.

2Cq3ci

\* fingerprint is sensitive personal data

best answers: voice/speech recognition, facial recognition

iris scanning, retinal scanning, hand geometry, palm

2Cq3cii

Use a board with 4x4 dots.

Set a minimum number of dots to be connected.

Hide the drawn lines.

2Cq3ciii

(virtual keyboard)

Hackers cannot get the password by obtaining the mouse click positions or hand movement.

Make sure that the user is a real human and not a robot program.

\* hide the user name and password by displaying \*s.

poor design

zoom in / zoom out, scroll left and right + up and down

poor user experience / poor interface design

2Cq3d

clearly display of thumbnails

user friendly navigation

-- either scroll horizontally or vertically only

description of the use

-- effective layout to arrange the thumbnails and movie information

2Cq3e

\* minimum button size

design to show available seats

cross out unavailable seats with X, change its colour

illustrate how to select seat

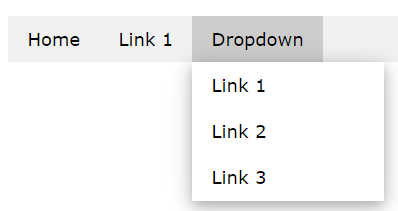
zoom/scroll/menu

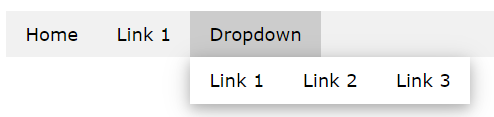
design to show selected seat -- show seat number, change its colour.

\* library -- ebook, search, reservation, renew, online payment

2Cq4ai -- navigation menu

Navigation Bar with Dropdown

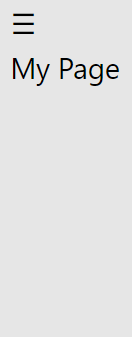
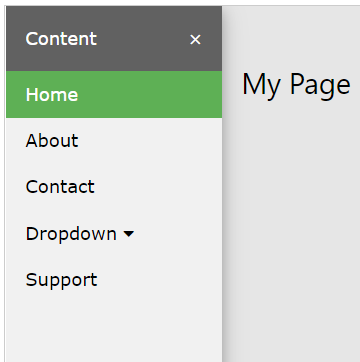
 display vertically

display horizontally

Fixed Navigation Bar--To fix the navigation bar to stay at the top or at the bottom of the page, even when the user scrolls the page. The menu is always accessible. (Occupy screen space).

When the navigation bar takes up too much space on a small screen, and you do not want to display it vertically by default, you can use hide and show classes on specific links in the navigation bar.

In the example below, the navigation bar is replaced with a button (☰) in the top right corner when shown on tablets and mobile devices. When the button is clicked, the links in the navigation bar will be vertically displayed.

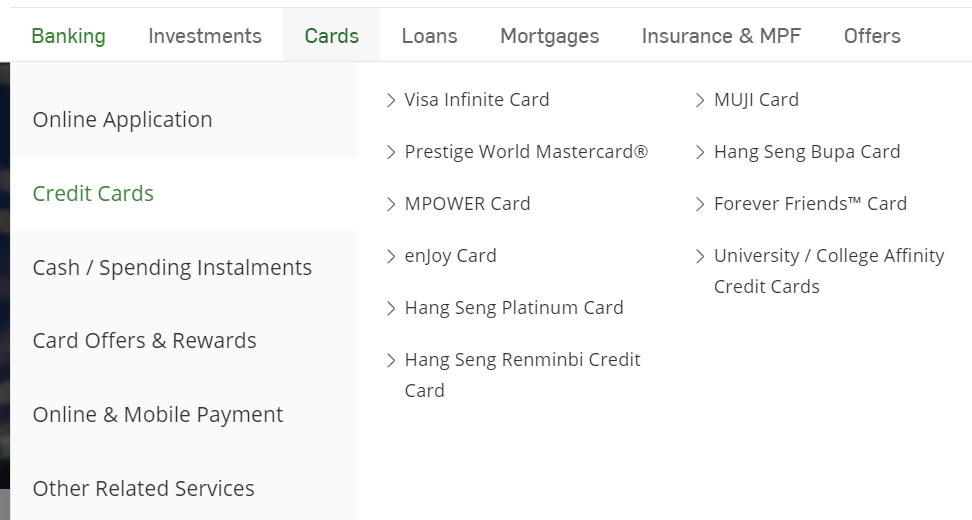
 

hide show

Tabbed navigation uses navigation buttons (tabs) arranged together with the selected tab highlighted.



answers: grouping, use of submenu



If you have a web site with many pages, you may use pagination. When the pagination link is clicked, the corresponding page will be displayed.

 enter the page number \_\_\_\_\_

2Cq4aii

shorter loading time

accessibility issues, text-to-speech software to convert text to audio for visually impaired people

easier to edit the labels of the buttons

enhance searching by keywords

2Cq4bi

The <head> element is a container for metadata (data about data) and is placed between the <html> tag and the <body> tag. HTML metadata is data about the HTML document. Metadata is not displayed.

Metadata typically define the document title, character set, styles, scripts, and other meta information.

Metadata is data (information) about data. The <meta> tag provides metadata about the HTML document. Metadata will not be displayed on the page. Meta elements are typically used to specify page description, keywords, author of the document, last modified, and other metadata. The metadata can be used by browsers (how to display content or reload page), search engines (keywords), or other web services. HTML5 introduced a method to let web designers take control over the viewport (the user's visible area of a web page).

<head>

<meta charset="UTF-8">

<title>Mi Teen </title>

<meta name="description" content="Free Web tutorials">

<meta name="keywords" content="HTML,CSS,XML,JavaScript">

<meta name="author" content="John Doe">

<meta name="viewport" content="width=device-width, initial-scale=1.0">

</head>

The <title> element:

defines a title in the browser tab

provides a title for the page when it is added to favorites

displays a title for the page in search engine results

answers:

keywords of the web page are added to a meta tag to increase the chance of being searched by search engines.

character coding is added to a meta tag to indicate the coding scheme used.

description of the web page, title, author, coyright, creation date, last modification date

2Cq4bii

cookies -- no virus / browsing activities are recorded -- clear cookies

要針對處境clinic

Record the last page visited by the client and display the page for the next visit.

Record the duration of browsing different pages and display relevant information for the client.

Record the banner ads that were shown in the past so that other new banner ads can be shown for the next visit. (但個sample無banner ads)

2Cq4c



Image map

For a normal image link, the entire area of the image links to a single destination. 1 image 1 hyperlink

An image map is a list of coordinates relating to a specific image, created in order to hyperlink areas of the image to various destinations.

The intention of an image map is to provide an easy way of linking various parts of an image without dividing the image into separate image files. You can create multiple hotspot areas, but they are part of the same image map.

answers

For each part of the tooth, create an area or a polygon (hotspot) on the image and assign the corresponding hyperlink to that area.

2Cq4di

The aspect ratios of the video and the screen are different.

fit-in -- show the entire video but leaves borders (L/R or U/B)

fill-in -- the video fills the entire screen, but some parts are cropped

stretch the video to fill the screen, aspect ratio is changed

2Cq4dii

uncompressed video only

duration x 25 x 1280 x 720 x 24 bit = 20 x 230 x 8 bit

= 310.689s

2Cq4e

check the correctness of the questions (if)

accumulate the number of 'true'

loop for 10 times

display the health condition according to the number of 'true'

n=0

for i=1 to 10 do

input the answer

if answer=true

n=n+1

if n>=7 print "healthy"

else if n>=4 print "need improvement"

else print "unhealthy"