

# Principles of Evaluation

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- Accessibility evaluation is often limited to assessing conformance to accessibility standards such as WCAG.
- It's a good way to help check that you've adequately covered the range of accessibility issues. However, ***when the focus is only on the technical aspects of accessibility, the human interaction aspect can be lost.***



# Principles of Evaluation

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- Goals
  - Quick evaluation; Conformance evaluation
- Challenges
  - Evaluator; Limited time & money
- Scoping
- Evaluation tools selection



# Five Testing Techniques

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## 1. Code Scanning

- Many accessibility issues can be detected automatically using specialist software and tools.
- No automated accessibility evaluation tool can find all of your content's accessibility errors.



**ACHECKER**®

Example Tools -

AChecker

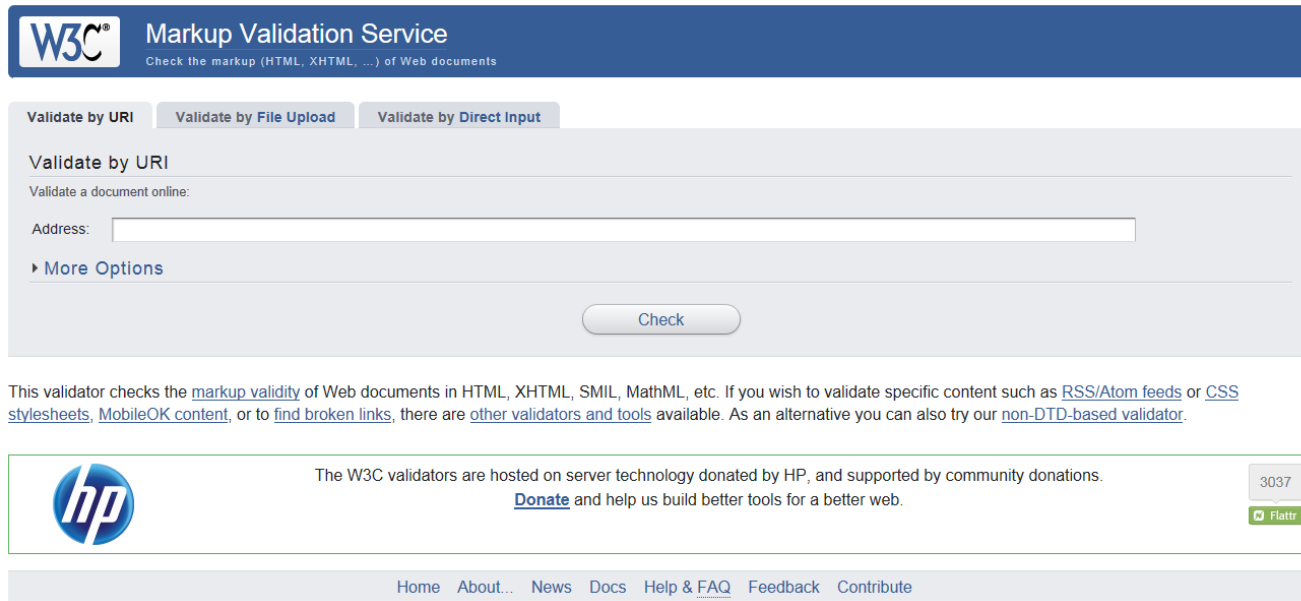
WAVE

Web Accessibility Checker



# Evaluating Websites for Accessibility

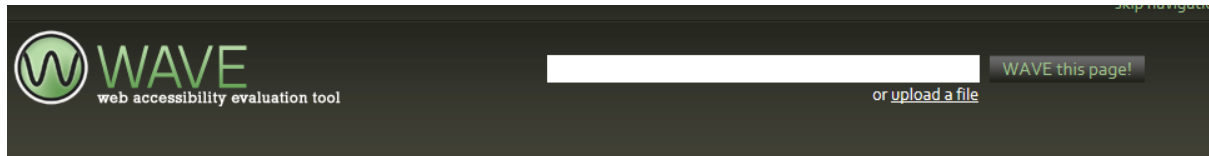
- Markup Validation Service
  - <http://validator.w3.org/>



The screenshot shows the W3C Markup Validation Service interface. At the top, there is a dark blue header with the W3C logo and the text "Markup Validation Service" and "Check the markup (HTML, XHTML, ...) of Web documents". Below the header, there are three tabs: "Validate by URI", "Validate by File Upload", and "Validate by Direct Input". The "Validate by URI" tab is selected. Under this tab, there is a section titled "Validate by URI" with the instruction "Validate a document online:". Below this, there is a label "Address:" followed by a text input field. A "More Options" link is visible below the input field. At the bottom of the form area, there is a "Check" button. Below the form, there is a paragraph of text: "This validator checks the [markup validity](#) of Web documents in HTML, XHTML, SMIL, MathML, etc. If you wish to validate specific content such as [RSS/Atom feeds](#) or [CSS stylesheets](#), [MobileOK content](#), or to [find broken links](#), there are [other validators and tools](#) available. As an alternative you can also try our [non-DTD-based validator](#)." At the bottom of the page, there is a footer with the HP logo, the text "The W3C validators are hosted on server technology donated by HP, and supported by community donations. [Donate](#) and help us build better tools for a better web.", a "3037" counter, a "Flattr" button, and a navigation menu with links: "Home", "About...", "News", "Docs", "Help & FAQ", "Feedback", and "Contribute".

# Evaluating Websites for Accessibility

- WAVE
  - <http://wave.webaim.org/>



## Welcome to WAVE

WAVE is a free web accessibility evaluation tool provided by [WebAIM](#). It is used to aid humans in the web accessibility evaluation process. Rather than providing a complex technical report, WAVE shows the original web page with embedded icons and indicators that reveal the accessibility of that page.

## Enter a web site address

Enter the URL of the web site you want to evaluate:

## Upload a file

If you have files that are not publicly available on the internet, you can upload the files for WAVE evaluation. Simply browse to the file using the form below.

## Check HTML code

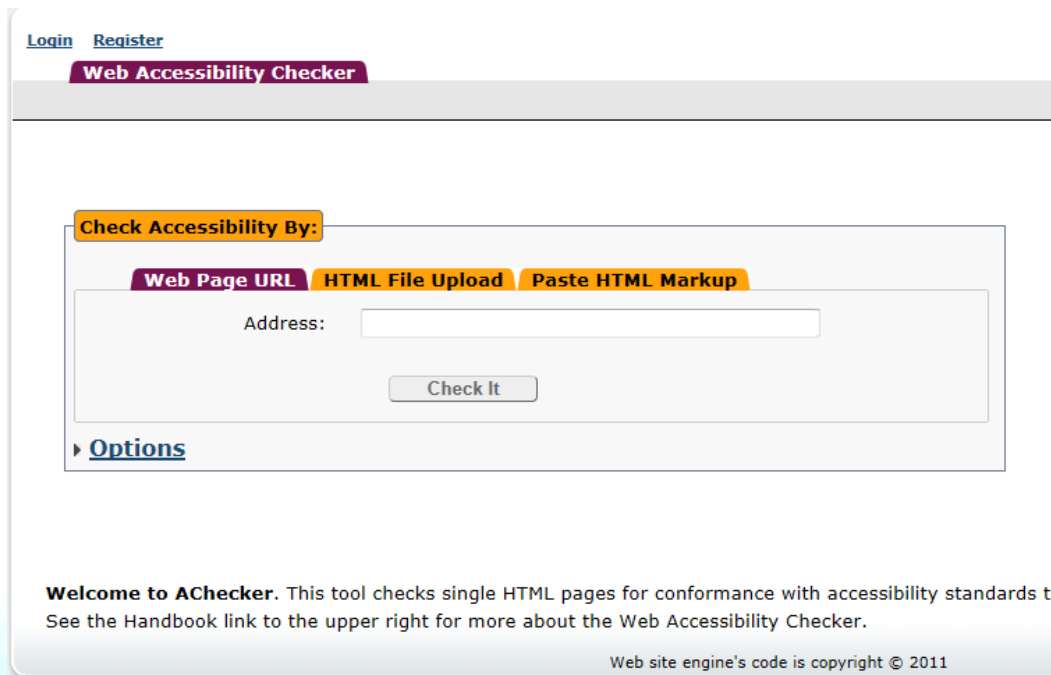
Paste HTML code into the text area below.





# Evaluating Websites for Accessibility

- Web Accessibility Checker
  - <http://achecker.ca/checker/index.php>



The screenshot shows the 'Web Accessibility Checker' interface. At the top, there are links for 'Login' and 'Register'. Below them is a header 'Web Accessibility Checker'. The main section is titled 'Check Accessibility By:' and contains three tabs: 'Web Page URL', 'HTML File Upload', and 'Paste HTML Markup'. The 'Web Page URL' tab is active, showing an 'Address:' label and an input field. Below the input field is a 'Check It' button. At the bottom of the main section is a link for 'Options'. At the very bottom of the page, there is a welcome message and a copyright notice.

[Login](#) [Register](#)

**Web Accessibility Checker**

**Check Accessibility By:**

**Web Page URL** **HTML File Upload** **Paste HTML Markup**

Address:

▸ [Options](#)

Welcome to AChecker. This tool checks single HTML pages for conformance with accessibility standards to See the Handbook link to the upper right for more about the Web Accessibility Checker.

Web site engine's code is copyright © 2011

# Five Testing Techniques

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## 2. Visual Review

- A great deal can be learnt by browsing your own website while keeping in mind certain guidelines.
  - Can your content be easily read?
  - Can your forms be used effectively?



# Five Testing Techniques

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## 2. Visual Review

- We suggest paying particular attention to anything visual that might not work well for a visually impaired user.
  - Is your text too small?
  - Are you using pale colour text on a pale background making it hard to read?





# Five Testing Techniques

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## 2. Visual Review

- 7 approaches to examine pages using graphical browsers;
  - a) Turn off images, and check whether appropriate alternative text is available.
  - b) Turn off the sound, and make sure audio content is still available through text equivalents.



# Five Testing Techniques

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## 2. Visual Review

- c) Use browser controls to vary font-size: verify that the font size changes on the screen accordingly; and that the page is still usable at larger font sizes.
- d) Change the display colour to grey scale (or print out page in grey scale or black and white) and observe whether the colour contrast is adequate.



# Five Testing Techniques

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## 2. Visual Review

- e) Test with different screen resolution, and/or by resizing the application window to less than maximum, to verify that horizontal scrolling is not required (caution: test with different browsers, or examine code for absolute sizing, to ensure that it is a content problem not a browser problem).



# Five Testing Techniques

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## 2. Visual Review

- f) Without using the mouse, use the keyboard to navigate through the links and form controls on a page (for example, using the "Tab" key), making sure that you can access all links and form controls, and that the links clearly indicate what they lead to.
- g) Also examine page with scripts, style sheets, applets, and other embedded objects not loaded.

# Five Testing Techniques

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## 2. Visual Review



Example Tools -

Vischeck

Web Developer (Firefox plugin)

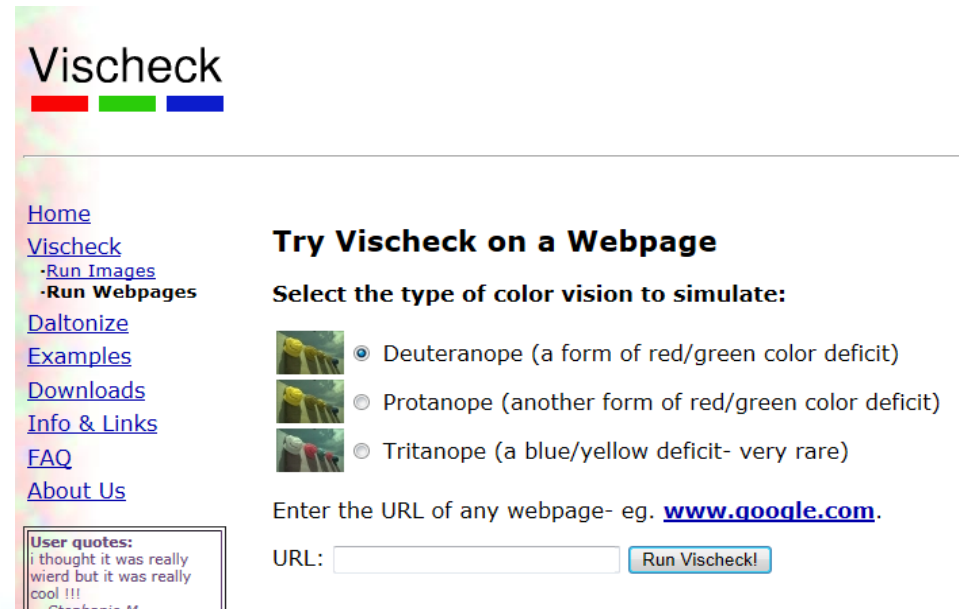
Colour Contrast Check





# Evaluating Websites for Accessibility

- Vischeck
  - <http://www.vischeck.com/vischeck/vischeckURL.php>



The screenshot shows the Vischeck website interface. At the top left, the word "Vischeck" is displayed in a large, bold, black font, with three small colored squares (red, green, and blue) underneath it. Below this, there is a navigation menu with links for "Home", "Vischeck", "Run Images", "Run Webpages", "Daltonize", "Examples", "Downloads", "Info & Links", "FAQ", and "About Us". To the right of the navigation menu, the heading "Try Vischeck on a Webpage" is followed by the instruction "Select the type of color vision to simulate:". Below this, there are three radio button options, each accompanied by a small thumbnail image showing a color calibration chart. The first option is "Deuteranope (a form of red/green color deficit)", the second is "Protanope (another form of red/green color deficit)", and the third is "Tritanope (a blue/yellow deficit- very rare)". Below the radio buttons, there is a text input field labeled "URL:" and a button labeled "Run Vischeck!". The URL field contains the text "www.google.com". At the bottom left of the screenshot, there is a small box containing user quotes: "i thought it was really wierd but it was really cool !!!" and "-Stenhania M".

# Evaluating Websites for Accessibility

- Web Developer (Firefox/Chrome plugin)

The screenshot shows the OGCIO website (www.ogcio.gov.hk/en/index.htm) with the Web Developer plugin menu open. The menu includes the following options:

- Display Alt Attributes (checked)
- Display Image Dimensions
- Display Image Paths
- Find Broken Images
- Hide Background Images
- Hide Images
- Make Images Full Size
- Make Images Invisible
- Outline All Images
- Outline Background Images
- Outline Images With Adjusted Dimensions
- Outline Images With Empty Alt Attributes
- Outline Images With Oversized Dimensions
- Outline Images Without Alt Attributes
- Outline Images Without Dimensions
- Replace Images With Alt Attributes
- View Image Information

The website content includes a navigation menu on the left, a main banner for the "Web Accessibility Campaign" (無障礙網頁運動), and various sections like "Data Centre Facilitation", "Web Accessibility", and "MyGovHK". The page also features a "HIGHLIGHTS" section and a "VIDEO" section.

# Evaluating Websites for Accessibility

- Colour Contrast Check
  - [http://snook.ca/technical/colour\\_contrast/colour.html](http://snook.ca/technical/colour_contrast/colour.html)

## Colour Contrast Check

Date created: January 11, 2005  
Date last modified: December 6, 2009

### Foreground Colour:

# 33FF33

Red:

Green:

Blue:

Hue (°):

Saturation (%):

Value (%):

### Background Colour:

# 333333

Red:

Green:

Blue:

Hue (°):

Saturation (%):

Value (%):

### Results

This is example text. **Some of it bolded.**  
*Some of it italicized.*

Brightness Difference: ( $\geq 125$ )

Colour Difference: ( $\geq 500$ )

Are colours compliant?

Contrast Ratio

WCAG 2 AA Compliant

WCAG 2 AA Compliant (18pt+)

WCAG 2 AAA Compliant

WCAG 2 AAA Compliant (18pt+)

# Five Testing Techniques

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## 3. Manual Screen Reader Testing

- Navigate your website and determine just how much information you're able to access through the screen reading software.
  - Did everything make sense?
  - Did the screen reader access all of the content?





# Five Testing Techniques

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## 3. Manual Screen Reader Testing

- Was the alternative text for images appropriate and equivalent enough to convey the content and meaning of the image?
- Was the reading order of the content logical?
- Are link labels descriptive?
- Were forms accessible via the keyboard?
- Were form labels included?





# Five Testing Techniques

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## 3. Manual Screen Reader Testing

- If the page includes data tables, were data cells associated with headers?
- Did the navigation structure make sense?
- Was there an option to navigate within lengthy pages of content?



# Five Testing Techniques

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## 3. Manual Screen Reader Testing

- Was content structure, such as headings and lists, correctly implemented?
- Was any multimedia accessible (i.e., did video have captions, audio have transcripts, Flash have an alternative, etc.)?



Example Tools -

Jaws

VoiceOver

Window Light



# Five Testing Techniques

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## 4. Testing with Other Tools

- As well as screen reader tools, persons with disabilities will use a variety of other tools to interact with your website.



For Example -

Screen Magnification Tools

Voice Control Tools



# Five Testing Techniques

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## 4. Testing with Other Tools

- Test your website with these tools and rectify issues found.



Example Tools -

ZoomText

Dragon Naturally Speaking



# Five Testing Techniques

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## 5. Human Testing

- Many organisations that support persons with disabilities can help by providing free or affordable human testing services.
- Many persons with disabilities prefer graphical version of websites, as more information services will be disseminated usually





# Evaluation approach for specific contexts

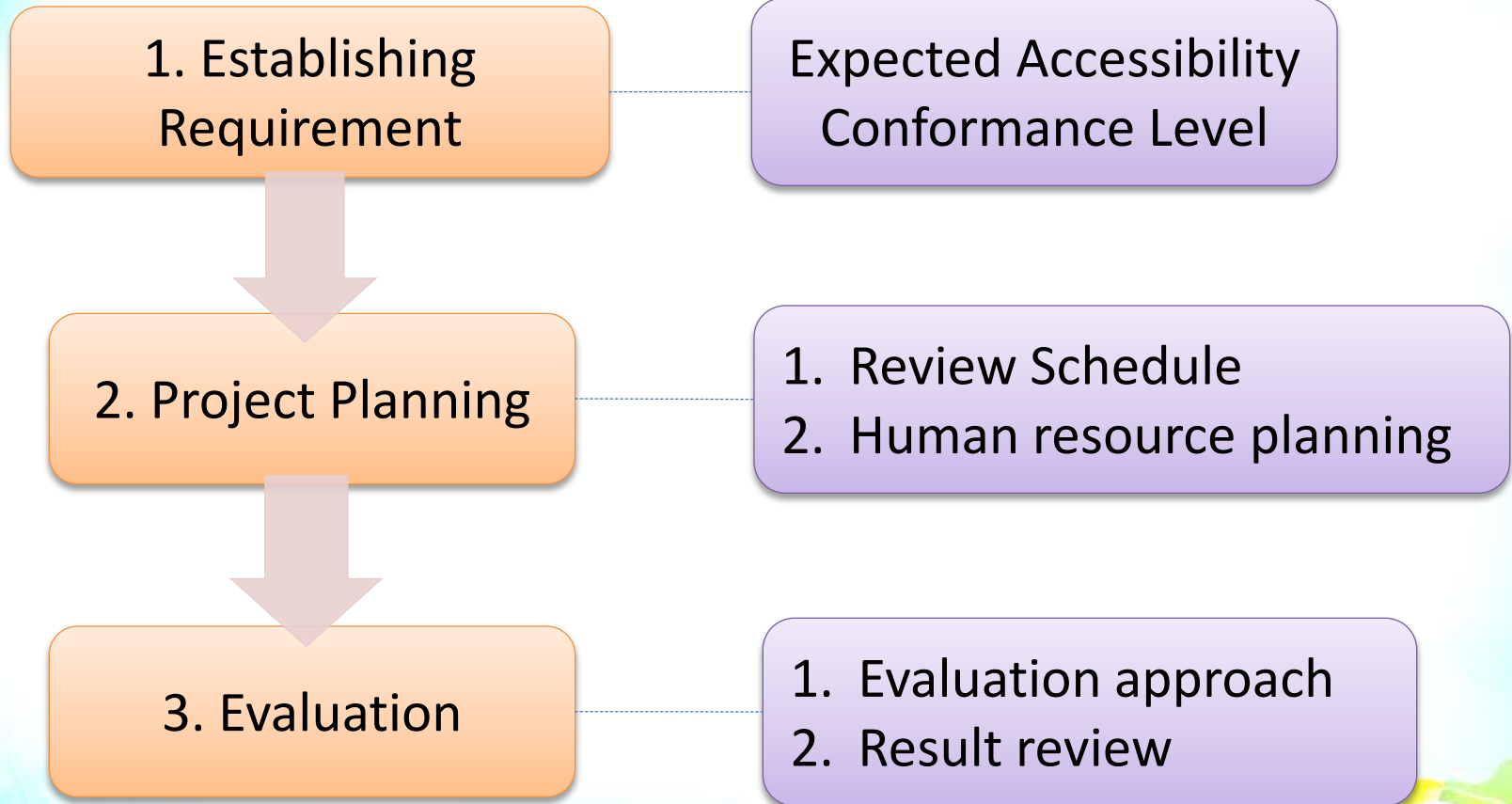
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- Evaluation during the development process
- On-going monitoring and maintaining accessibility
- Evaluation of legacy sites
- Evaluation of dynamically generated Web pages

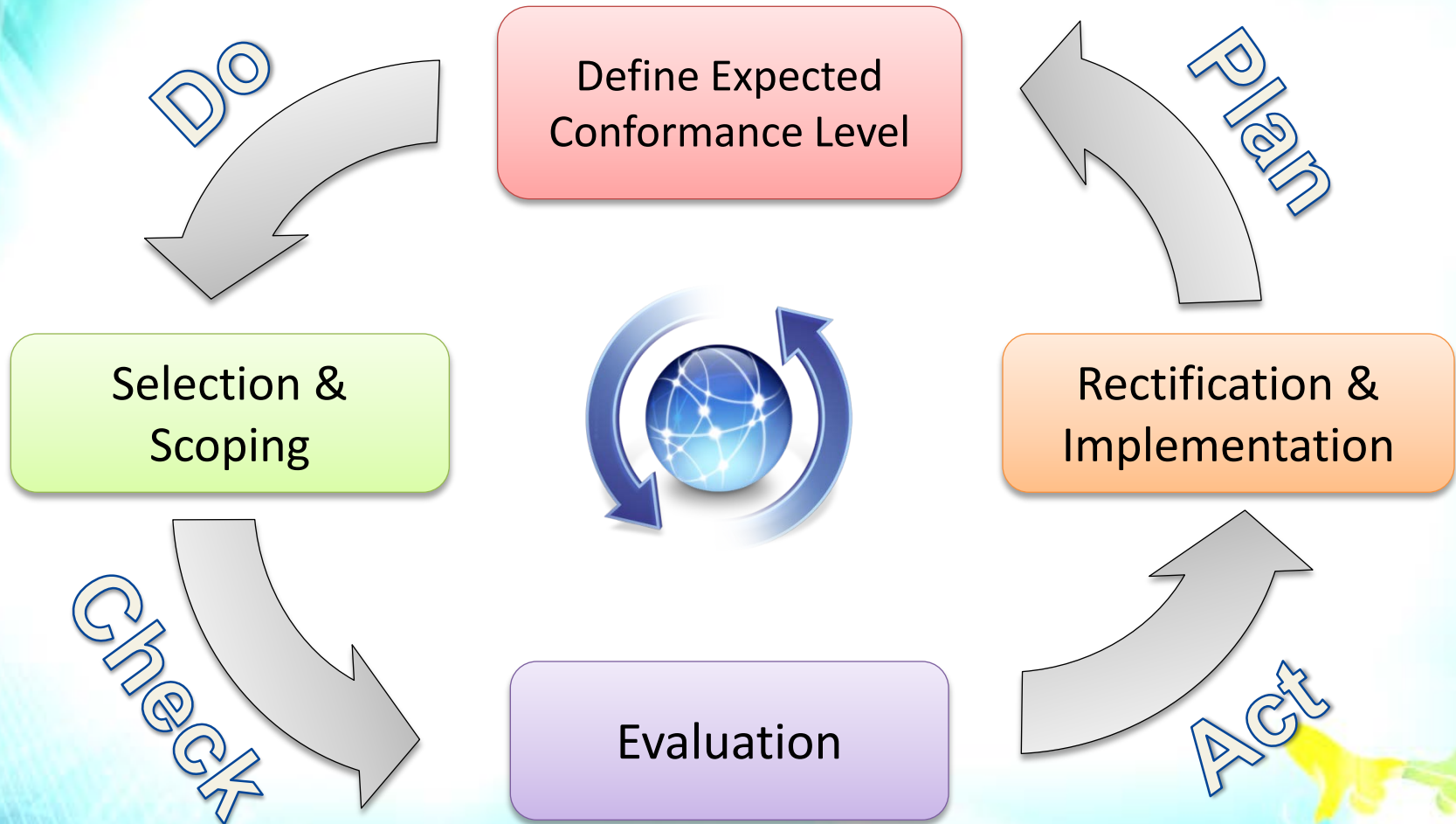


# Evaluation during the development process

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# On-going monitoring and maintaining



# On-going monitoring and maintaining

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- Clear expectations with regard to ***frequency***, ***approaches***, and ***scope of evaluations***.
- Processes for validating and evaluating all changed pages and new types of pages before they are added to the site.
- Software to facilitate evaluation.
- Incorporation in web site of contact point for user feedback comment or suggestion on web accessibility.





# Evaluation of dynamically generated Web pages

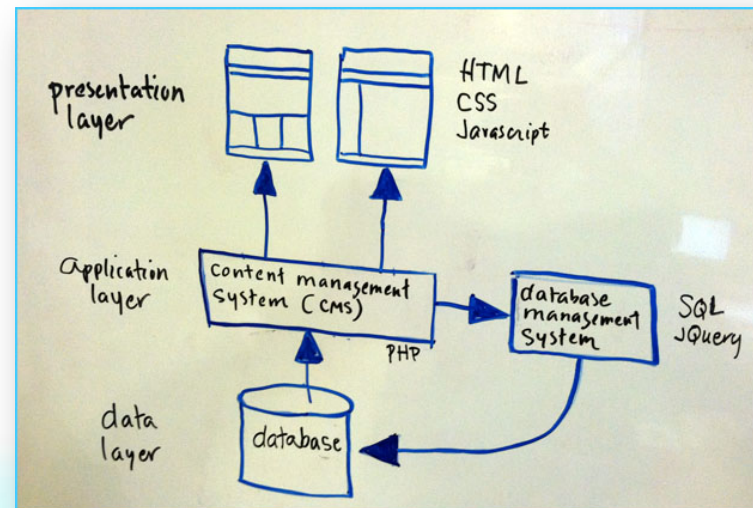
- Dynamically generated pages are usually assembled from one or more templates that provide common layout and navigation features, and





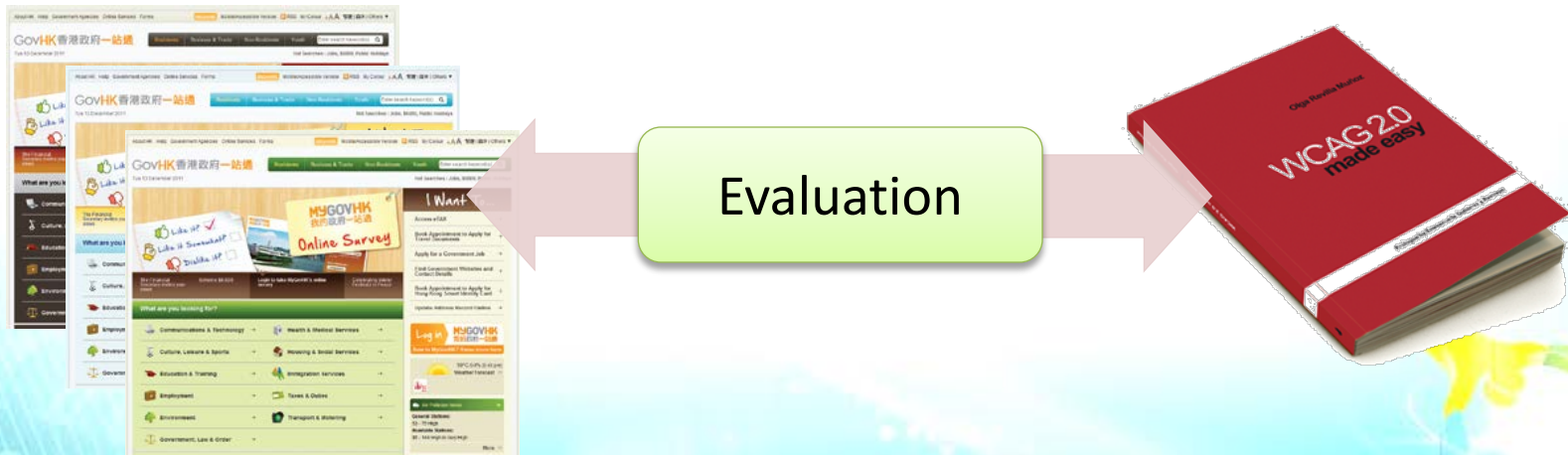
# Evaluation of dynamically generated Web pages

- Content provided automatically from a database or other content management system.
- To achieve full conformance the accessibility of both templates and generated content must be evaluated.



# Evaluation of dynamically generated Web pages

- It is not sufficient to evaluate only templates: content may also contain markup, or be required to contain markup in order to be accessible.
- Evaluate static templates using WCAG 2.0



# Evaluation of dynamically generated Web pages

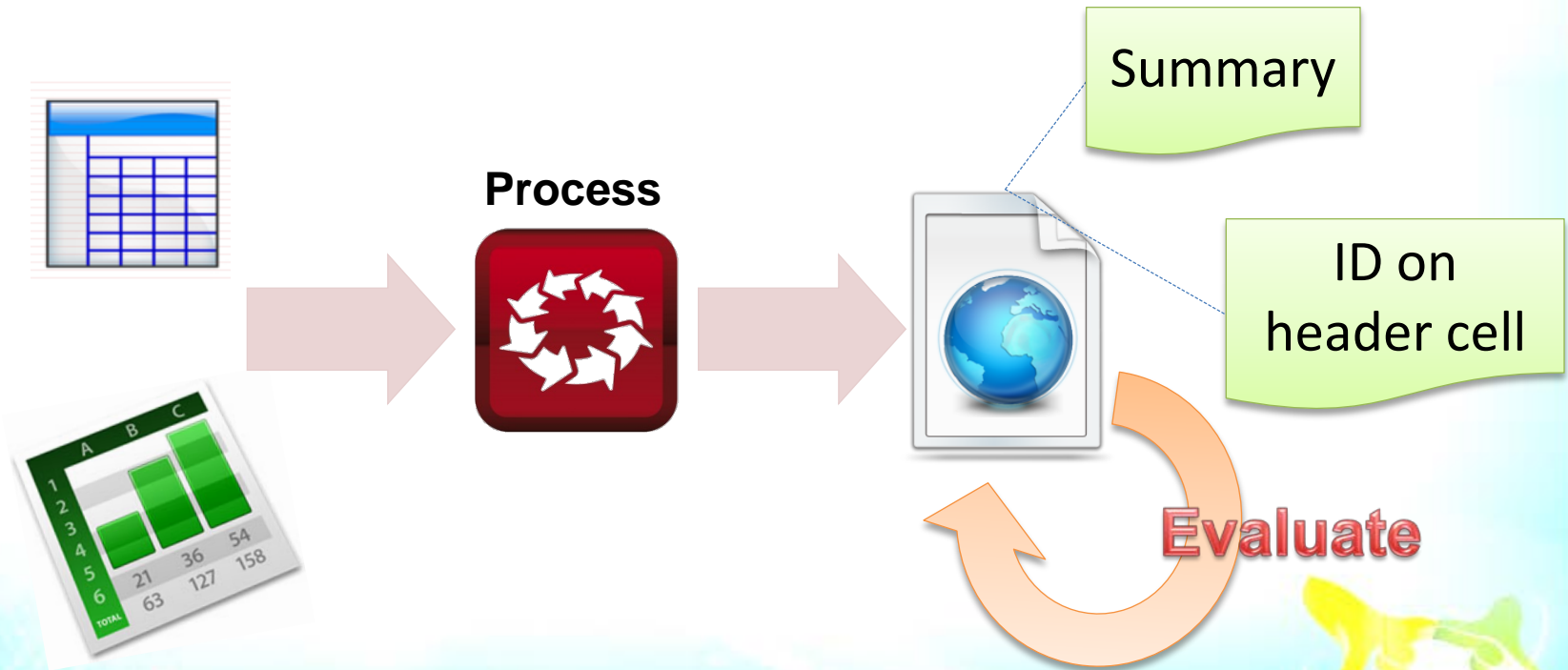
- Evaluate the capability of the content management system to store and generate accessibility information:
- Are images supplied with alt texts, and if needed, the longdesc?





# Evaluation of dynamically generated Web pages

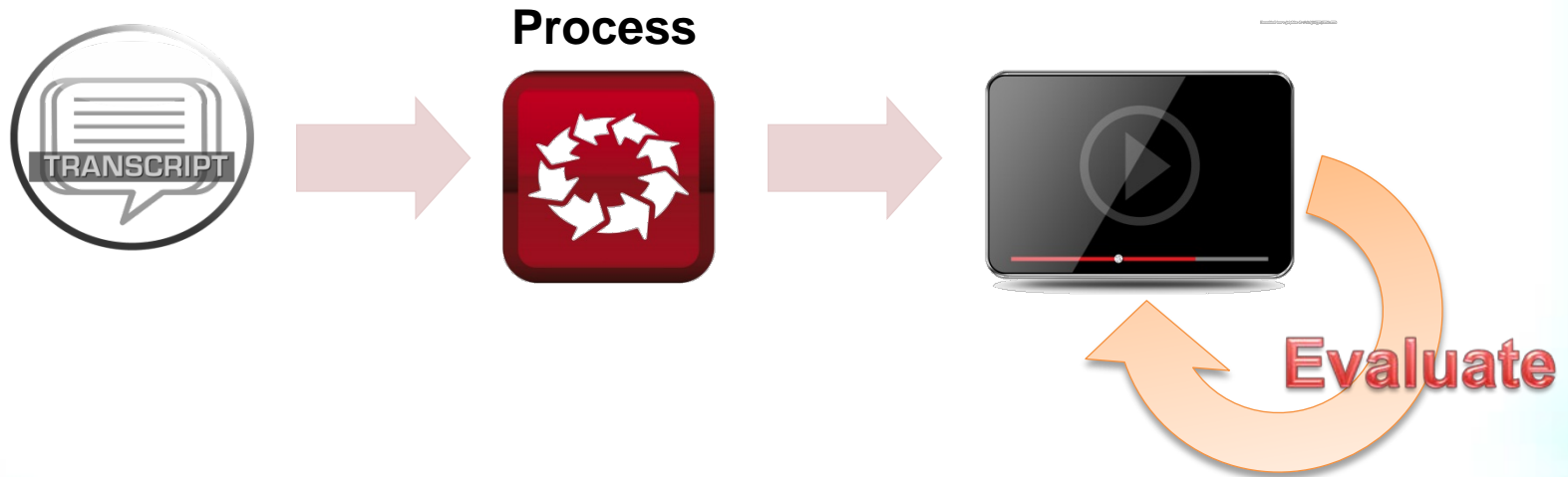
- Do generated data tables have accessibility aids (for example: summary, id on th header cells, etc.)?



# Evaluation of dynamically generated Web pages

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- If generated audio narrative, is textual equivalent available?

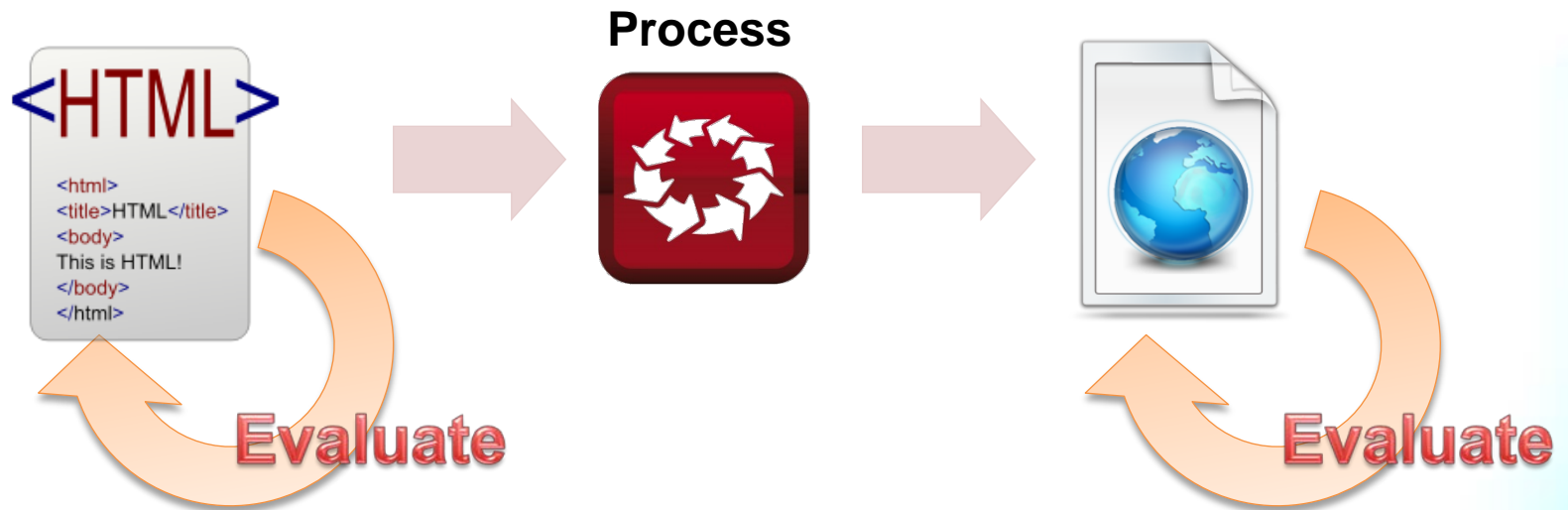




# Evaluation of dynamically generated Web pages

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- Is the generated markup valid?



# Where to find help for your web accessibility project

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- OGCIO website - <http://www.webforall.gov.hk>
- W3C website - <http://www.w3.org/TR/WCAG20>
- Government website - <http://www.gov.hk/>



# A good web design with web accessibility elements

- GovHK (<http://www.gov.hk/en/about/accessibility/>)



## Features:

- Resize Text
- Separate Textual Content with Links
- Handle Multi-level Menus
- Provide Supplementary Information
- Personalised Colours



# A good web design with web accessibility elements

- Put links on separate independent lines
- Provide links with meaningful and complete description
- Eliminate “Click Here” phenomenon

## Application for registration as Registered Energy Assessor (REA) commenced

With the Buildings Energy Efficiency (Registered Energy Assessors) Regulation put in operation on 21 March 2011, applications for registration as REAs were opened up immediately (please [click here](#) for how to apply and [click here](#) for the Register of REA).

## How to become a smart NFB passenger

Please do not make use of unauthorised NFB services. These unauthorised services may not have valid insurance to protect passengers' interest when they are involved in accidents. As a smart NFB passenger, you should check against the legality of the NFB services, especially those Residents' Services before you make use of it. You can find out the service details of Residents' Services that are approved by the Transport Department through the following link:

[List of approved Residents' Services](#)

Besides, you can read the following pamphlet which can help to identify buses which provide Residents' Services that are approved by the Transport Department.

[Don't Patronize Unauthorised Non-franchised Public Bus Service \(pdf file\)](#)

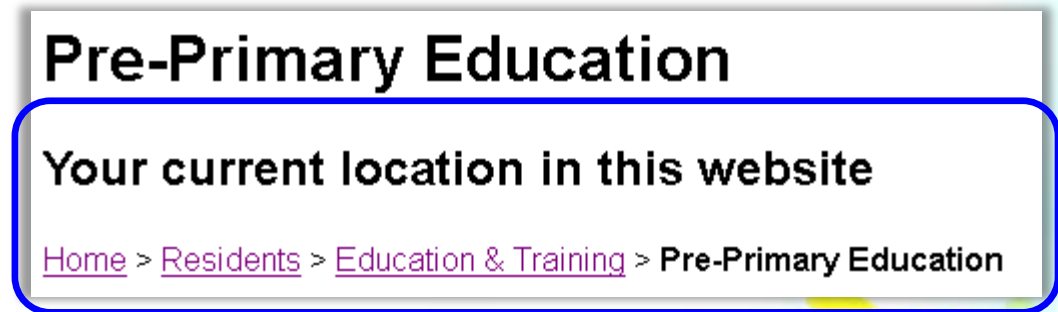
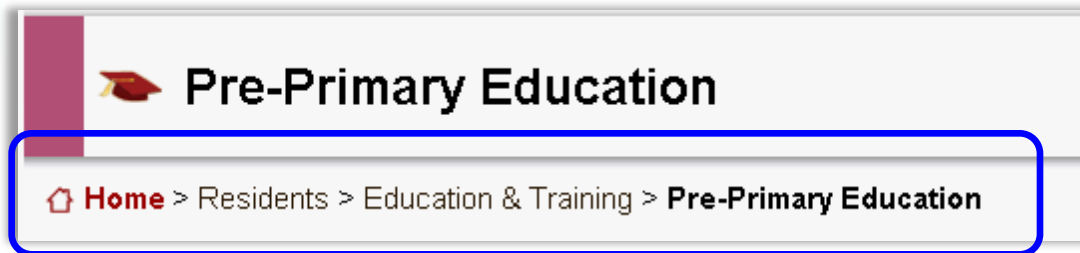




# A good web design with web accessibility elements

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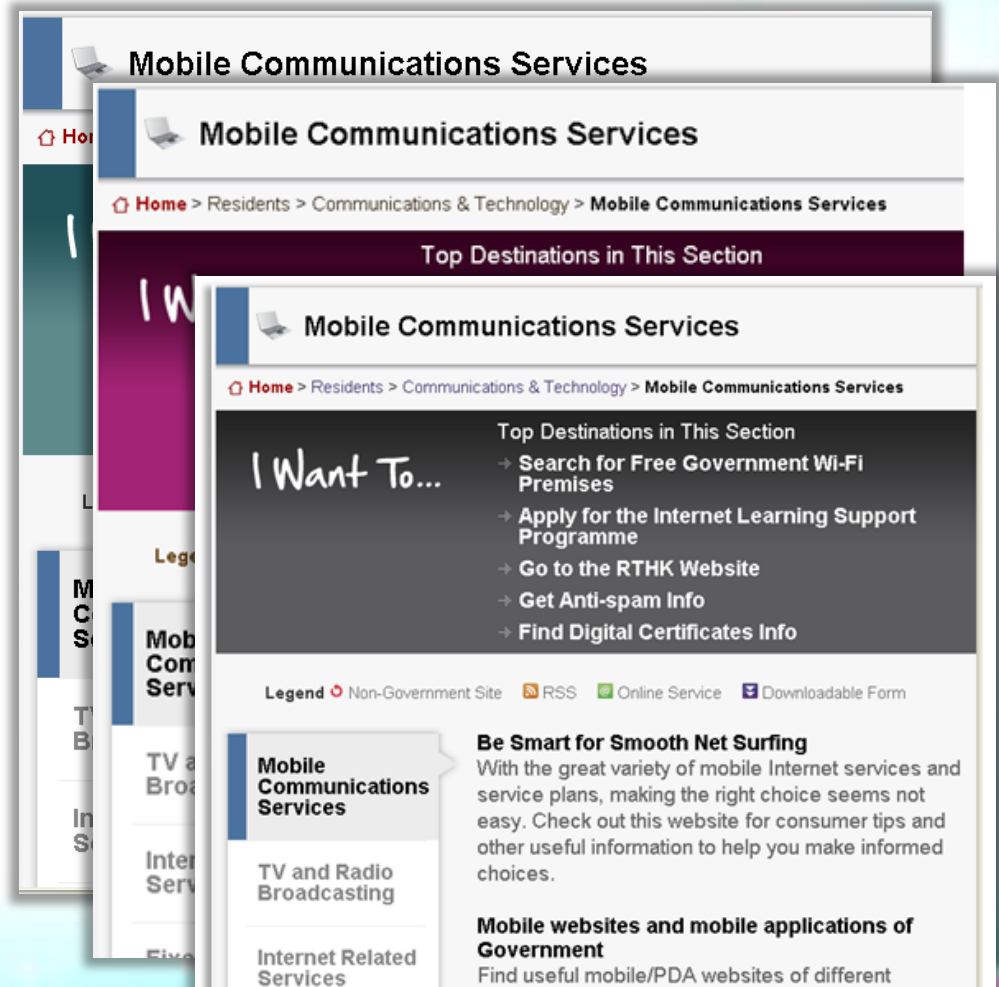
- Include useful supplementary information on hidden text





# A good web design with web accessibility elements

- Provide 6 colour scheme options with various colour contrasts and combinations
- Customise for specific users (e.g. colour blindness, maculopathy, light and colour sensitive, etc.)



# A good web design with web accessibility elements

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- Search Engine Optimisation (SEO)
  - Many web accesses are referred by search engine output
  - Put commonly referred keywords or abbreviation on hidden text or “meta keyword tag” to facilitate search with such terms, e.g. **P1/Primary One, Passport/ Travel Document, CRE/Common Recruitment Examination, 移民局/人民入境事務署, 搵工/招聘**



# A good web design with web accessibility elements

- Implement search engine friendly website
  - Provide “meta description tag” to describe your webpage

Search out from meta description tag

1. **GovHK: Online Application for HKSAR Passport**  
... Online Application for HKSAR **Passport**. Your current location in this website. ... An online application without a standard photograph, full supporting documents or payment will not be processed. **Passport** Collection. ...  
[www.gov.hk/en/residents/immigration/traveldoc/hksarpassport/applyhkpassport.htm](http://www.gov.hk/en/residents/immigration/traveldoc/hksarpassport/applyhkpassport.htm) - 8k - 2011-04-20 - 頁庫存檔
2. **GovHK: HKSAR Passport**  
... For enquiries about **passport** application or collection, please contact the Immigration Department hotline at (852) 2824 6111 ... can also find answers to some of the frequently asked questions about HKSAR **Passports** here. ...  
[www.gov.hk/en/residents/immigration/traveldoc/hksarpassport/](http://www.gov.hk/en/residents/immigration/traveldoc/hksarpassport/) - 8k - 2012-01-18 - 頁庫存檔

- Implement appropriate headers <h1>, <h2>, <h3> in page
- Provide sitemap in text and not be JavaScript driven

# Web Accessibility Campaign

## Launched in 2011 -

- Focus group discussion
- Survey with persons with disabilities
- Management handbook
- Portal with Illustration webpages  
([www.webforall.gov.hk](http://www.webforall.gov.hk))
- Awareness building seminars



illustrative website





# Web Accessibility Campaign

## Upcoming events

- Experience sharing sessions & Technical workshops
- Inculcating professional ethics in tertiary education institutions
- Recognition scheme





# Web Accessibility Campaign

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Let's join hands in making a caring  
and inclusive society



**Thank you**





# Questions and Answers

