

Introduction to WCAG 2.0 Guidelines

4 Principles

- The guidelines are based upon 4 key principles with regards to using websites

12 Guidelines

- Within each of these principles are a range of guidelines focusing on different types of content

61 Success Criteria

- Within the guidelines there are detailed success criteria

Many Techniques

- Lastly there are techniques that can be used to meet the success criteria.

Introduction to WCAG 2.0 Guidelines

4 Principles – 3. Understandable



12 Guidelines – 3.2. Predictable



61 Success Criteria – 3.2.3. Consistent Navigation



Many Techniques – Templates across webpages

Guidelines for Perceivable

- 1.1 Provide text alternatives for any non-text content so that it can be changed into other forms people need, such as large print, braille, speech, symbols or simpler language.
- 1.2 Provide alternatives for time-based media.
- 1.3 Create content that can be presented in different ways without losing information or structure.
- 1.4 Make it easier for users to see and hear content including separating foreground from background.

Guidelines for Operable

- 2.1 Make all functionality available from a keyboard.
- 2.2 Provide users enough time to read and use content.
- 2.3 Do not design content in a way that is known to cause seizures.
- 2.4 Provide ways to help users navigate, find content, and determine where they are.



Guidelines for Understandable & Robust

- 3.1 Make text content readable and understandable.
- 3.2 Make Web pages appear and operate in predictable ways.
- 3.3 Help users avoid and correct mistakes.
- 4.1 Maximize compatibility with current and future user agents, including assistive technologies.



Level A 1.1.1 : Non-text Content

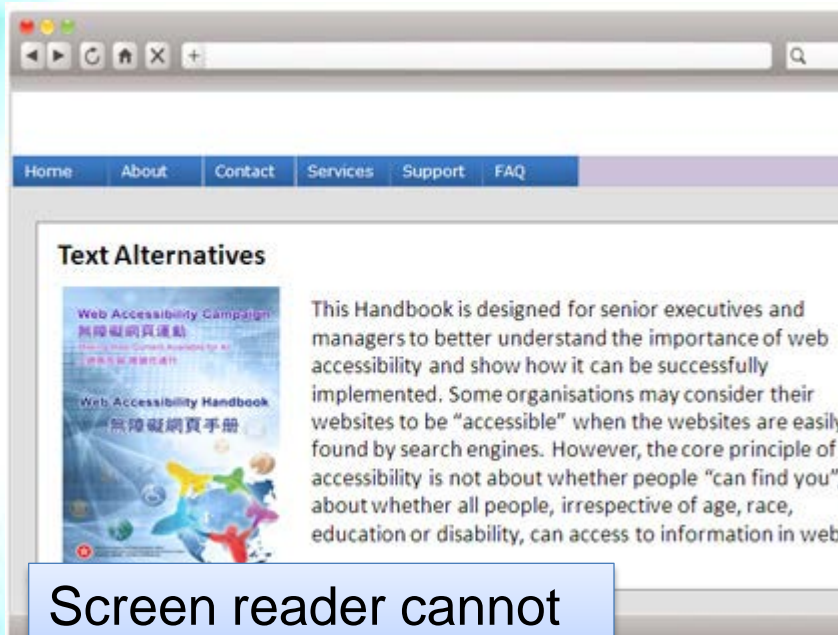
- All content on a website must be able to be represented in text so that it can be read by screen readers. For example, images must have a text description.

This does not need to be done for CAPTCHA or for images that are for decoration only and do not convey meaning.

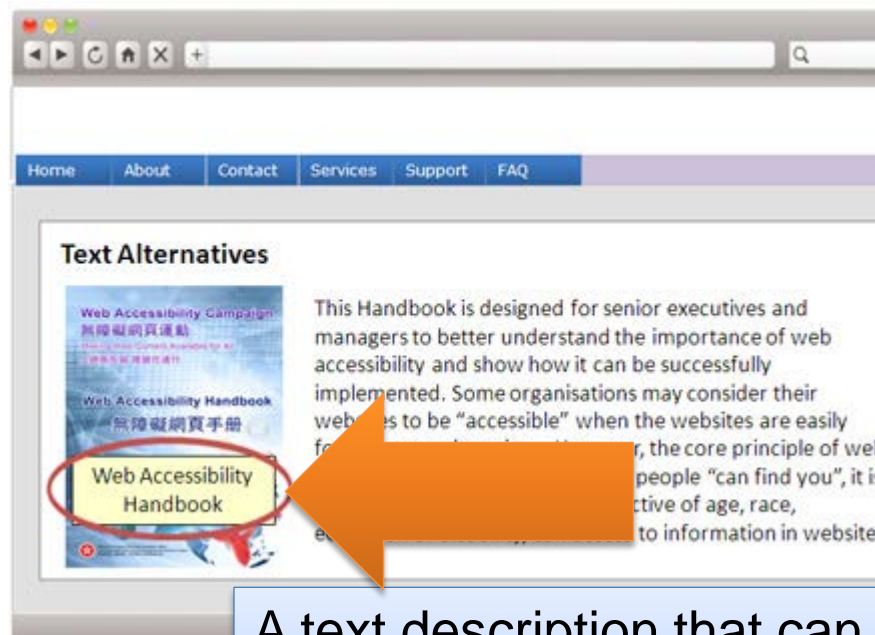


Level A 1.1.1 : Non-text Content

- A text description that can be read by the screen reader should be included.



Screen reader cannot read the picture.



A text description that can be read by the screen reader

Level A 1.2.1 : Audio-only and Video-only (Prerecorded)

- **Prerecorded Audio-only:** An alternative for time-based media is provided that presents equivalent information for prerecorded audio-only content.
- **Prerecorded Video-only:** Either an alternative for time-based media OR an audio track is provided that presents equivalent information for prerecorded video-only content.



Level A 1.2.1 : Audio-only and Video-only (Prerecorded)



- *Except when the audio or video is a media alternative for text and is clearly labelled*

Level A 1.2.2 Captions (Prerecorded)

- Captions are provided for all prerecorded audio content in synchronized media



Missing captions



Captions provided

- ***Except when the media is a media alternative for text and is clearly labelled***

Level A 1.2.3 Audio Description or Media Alternative (Prerecorded)

- An alternative for time-based media or audio description of the prerecorded video content is provided for synchronized media.



Read a  text transcript of this video

- ***Except when the media is a media alternative for text and is clearly labelled***

Level AA 1.2.4 Captions (Live)

- Captions are provided for all live audio content in synchronized media.

(Simulate live video)



- *Captions not only include dialogue, but also identify who is speaking and notate sound effects and other significant audio.*

Level AA 1.2.5 Audio Description (Prerecorded)

- Audio description is provided for all prerecorded video content in synchronized media.



**(((Audio)))
Description**



Level AA 1.2.5 Audio Description (Prerecorded)

The video is shown but no audio description is provided.

An video is played 



Level AA 1.2.5 Audio Description (Prerecorded)

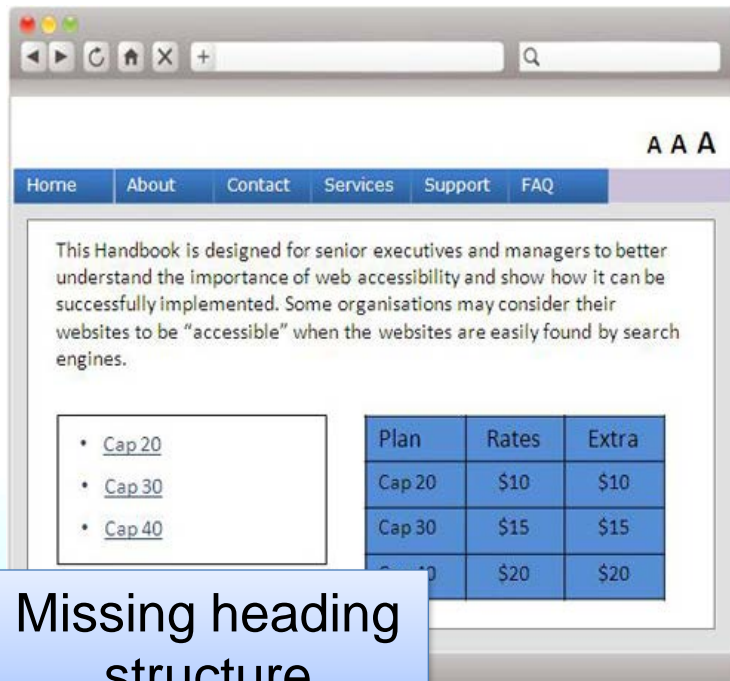
The video with audio description is shown.

An video is played 

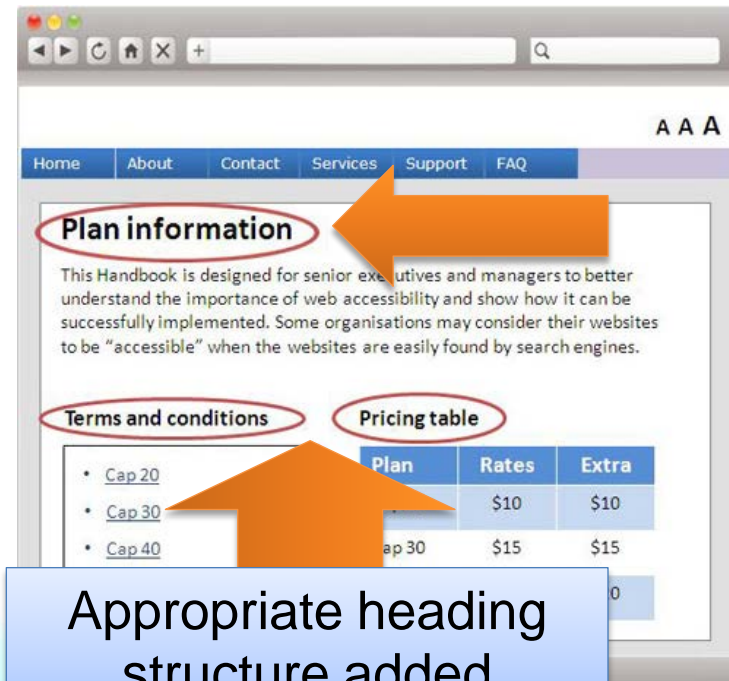


Level A 1.3.1 Info and Relationships

- Information, structure, and relationships conveyed through presentation can be programmatically determined or are available in text.



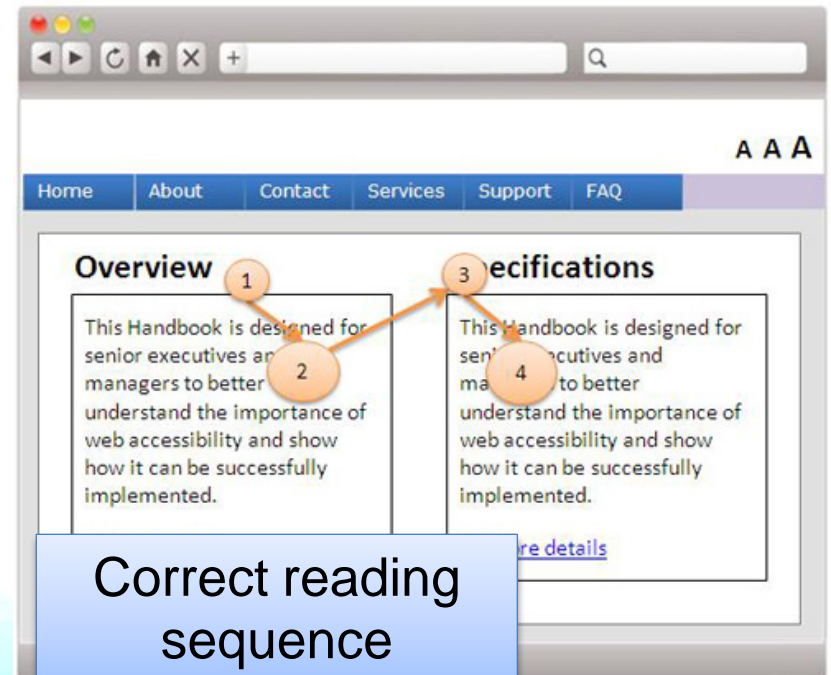
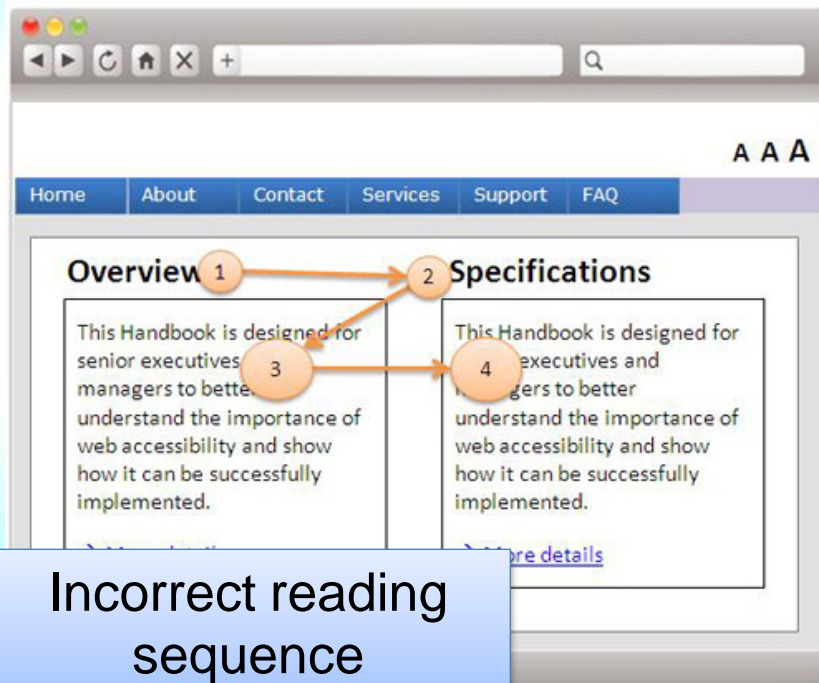
Missing heading structure



Appropriate heading structure added

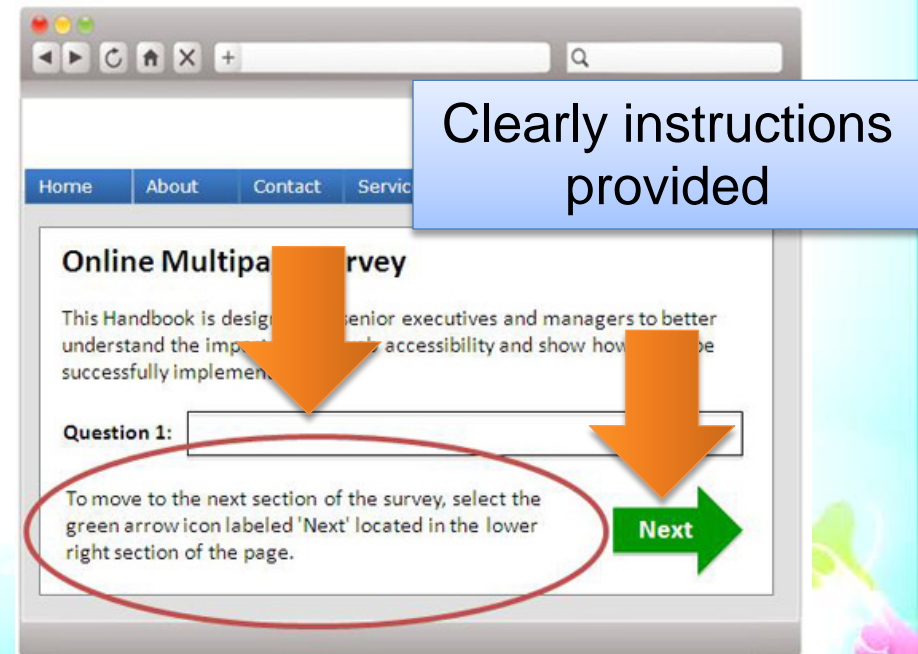
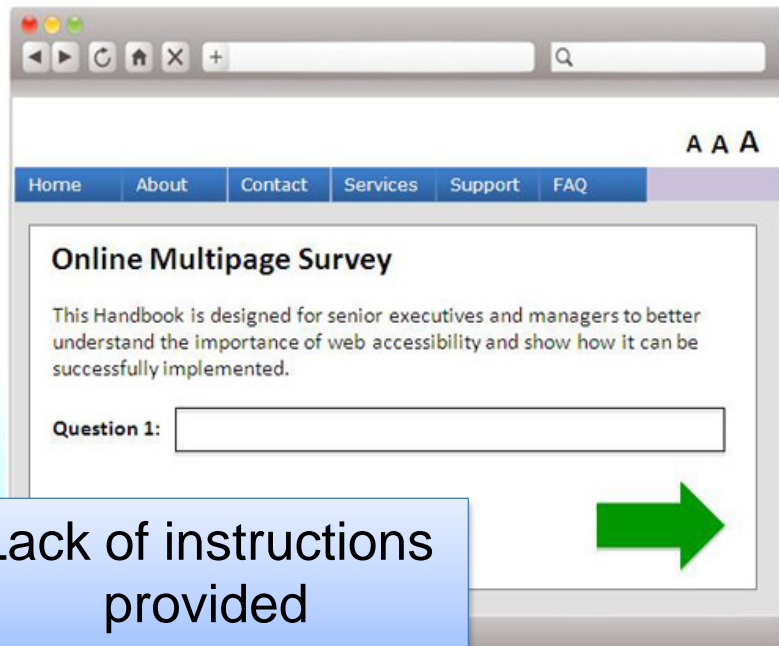
Level A 1.3.2 Meaningful Sequence

- When the sequence in which content is presented affects its meaning, a correct reading sequence can be programmatically determined.



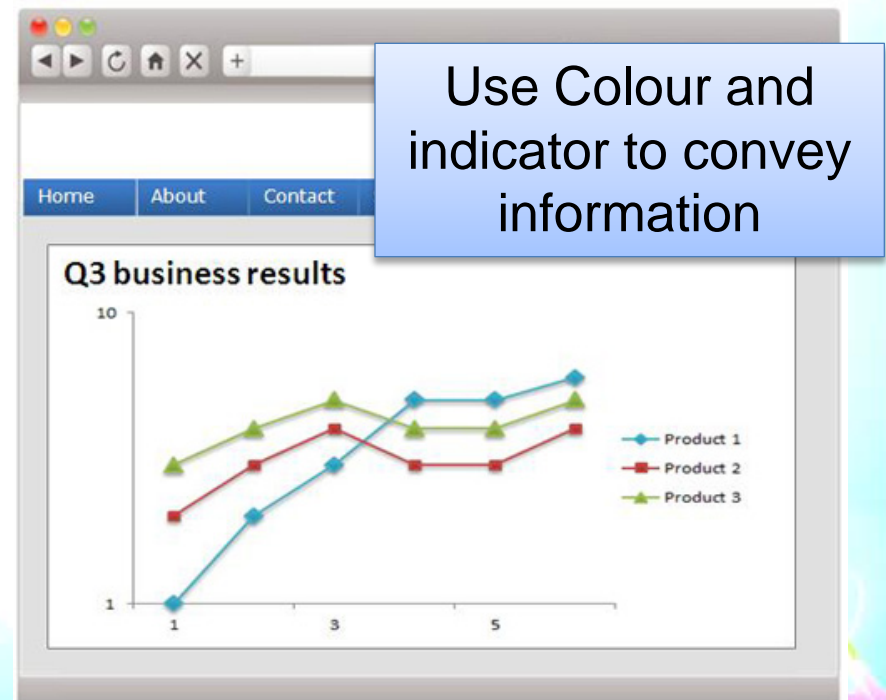
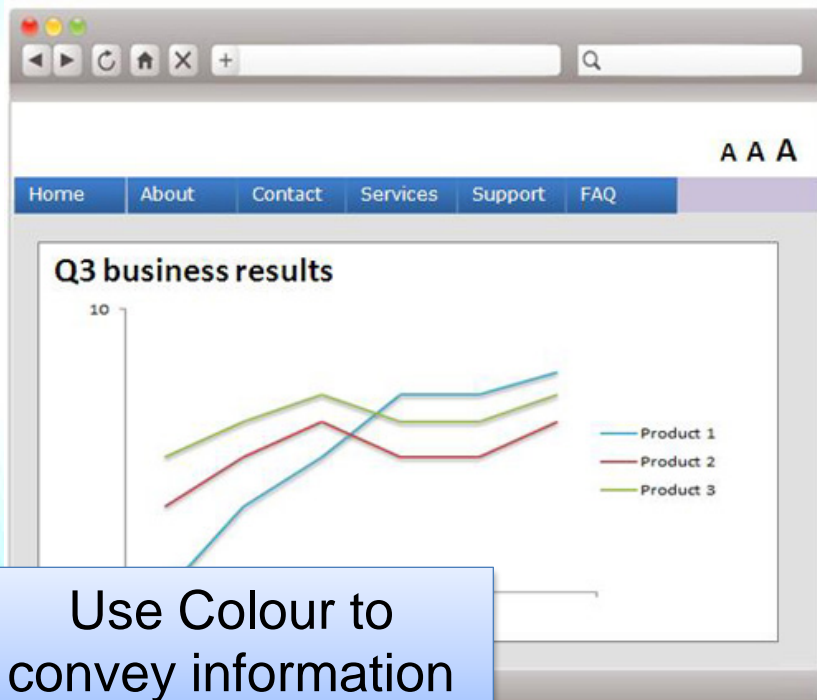
Level A 1.3.3 Sensory Characteristics

- Instructions provided for understanding and operating content do not rely solely on sensory characteristics of components such as shape, size, visual location, orientation, or sound.



Level A 1.4.1 Use of Colour

- Colour is not used as the only visual means of conveying information, indicating an action, prompting a response, or distinguishing a visual element.



Level A 1.4.2 Audio Control

- If any audio on a Web page plays automatically for more than 3 seconds, either a mechanism is available to pause or stop the audio, or a mechanism is available to control audio volume independently from the overall system volume level.

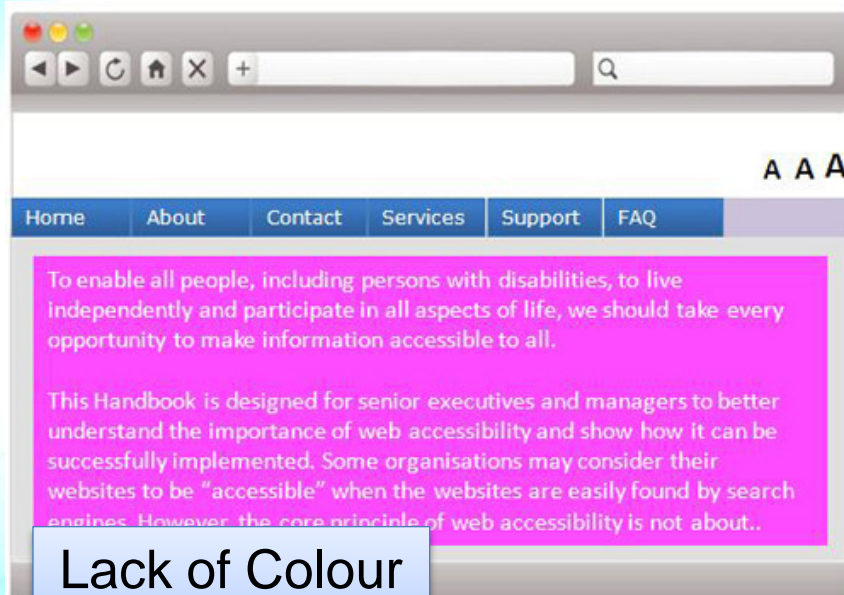
(Illustration)

- http://www.ogcio.gov.hk/en/community/web_accessibility/handbook/live_example/web_access_wcag_142.htm

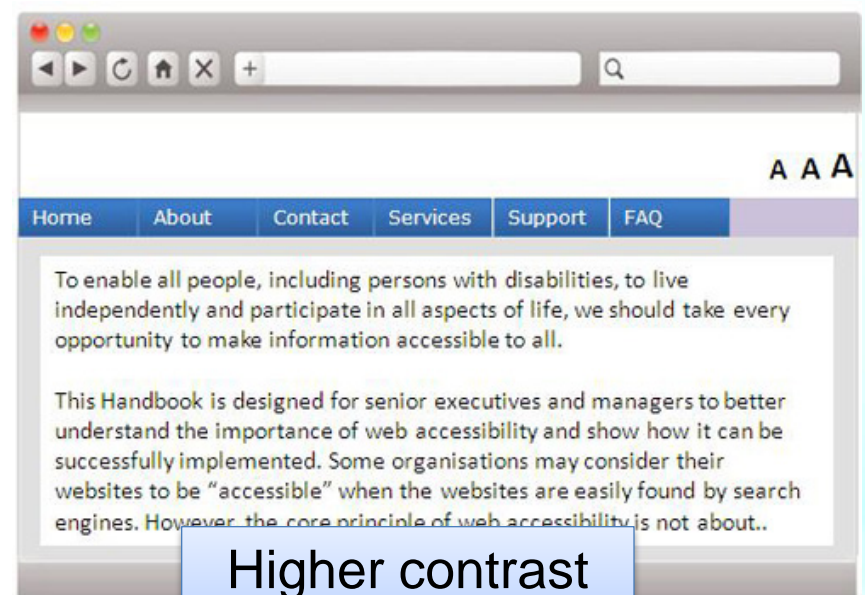


Level AA 1.4.3 Contrast (Minimum)

- The visual presentation of text and images of text has a contrast ratio of at least 4.5:1, except for the following.



Lack of Colour
contrast



Higher contrast
text is used

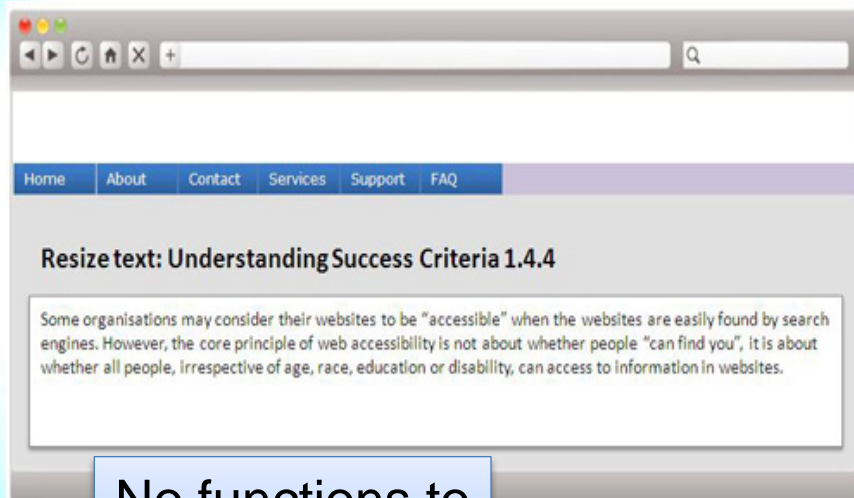
Level AA 1.4.3 Contrast (Minimum)

- Except for the following;
 - **Large Text:** Large-scale text and images of large-scale text have a contrast ratio of at least 3:1;
 - **Incidental:** Text or images of text that are part of an inactive user interface component, that are pure decoration, that are not visible to anyone, or that are part of a picture that contains significant other visual content, have no contrast requirement.
 - **Logotypes:** Text that is part of a logo or brand name has no minimum contrast requirement

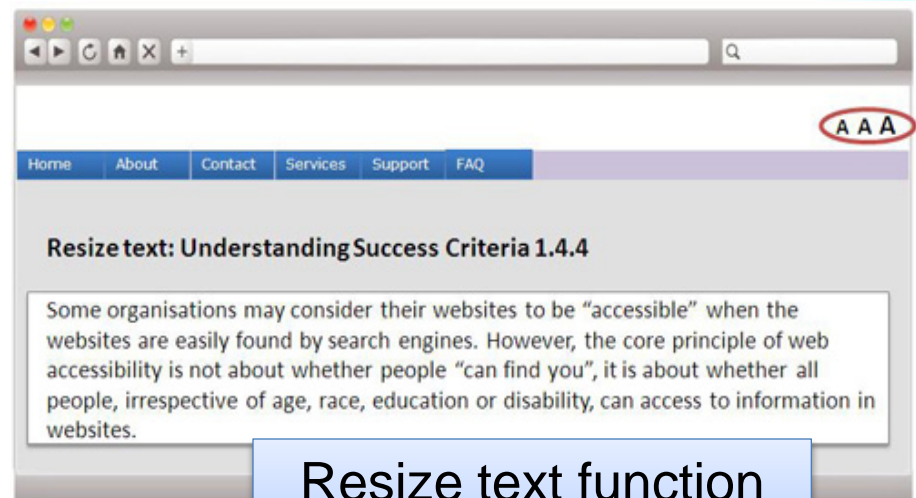
Web Accessibility
initiative

Level AA 1.4.4 Resize text

- Except for captions and images of text, text can be resized without assistive technology up to 200% without loss of content or functionality.



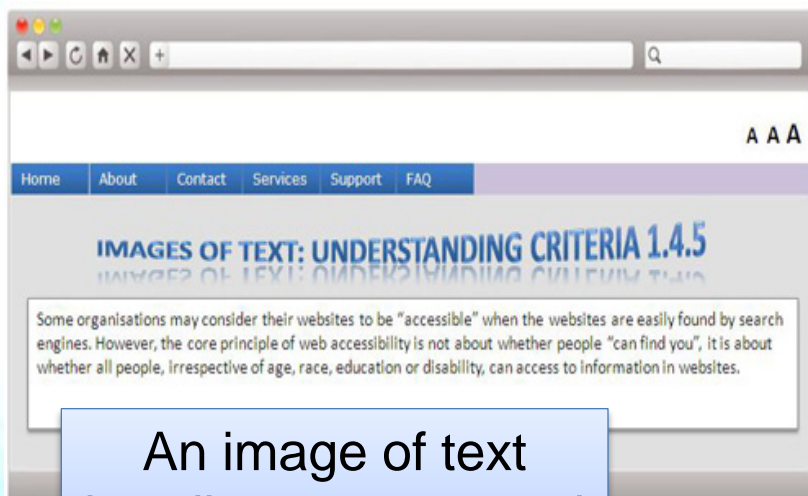
No functions to
resize the text



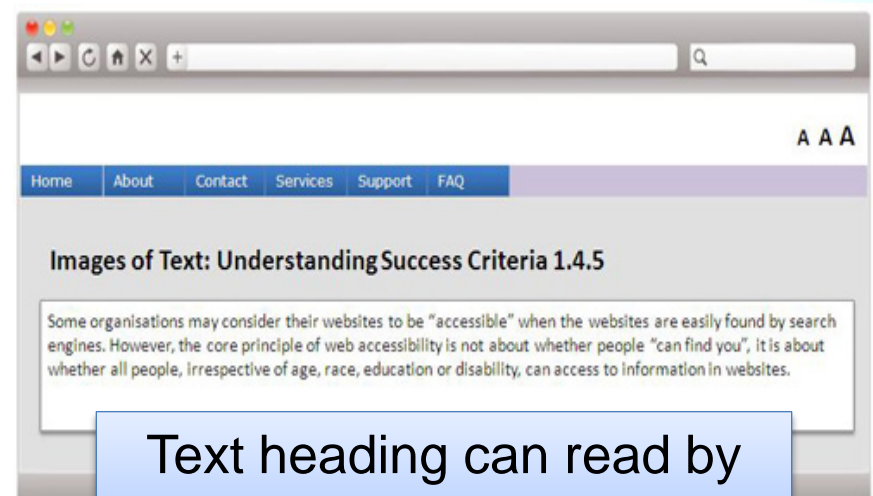
Resize text function
in the masthead

Level AA 1.4.5 Images of Text

- If the technologies being used can achieve the visual presentation, text is used to convey information rather than images of text



An image of text heading can not read by screen reader



Text heading can read by screen reader

Level AA 1.4.5 Images of Text

- Except for the following:
 - **Customizable:** The image of text can be visually customized to the user's requirements;
 - **Essential:** A particular presentation of text is essential to the information being conveyed.

IMAGES OF TEXT: UNDERSTANDING CRITERIA 1.4.5



Level A 2.1.1 Keyboard

- All functionality of the content is operable through a keyboard interface without requiring specific timings for individual keystrokes, except where the underlying function requires input that depends on the path of the user's movement and not just the endpoints.



- *Although game is excepted but strongly recommended to consider to allow the use of keyboard to play game or online training*

Level A 2.1.1 Keyboard

- **Important Note:**

- This exception relates to the underlying function, not the input technique. For example, if using handwriting to enter text, the input technique (handwriting) requires path-dependent input but the underlying function (text input) does not.

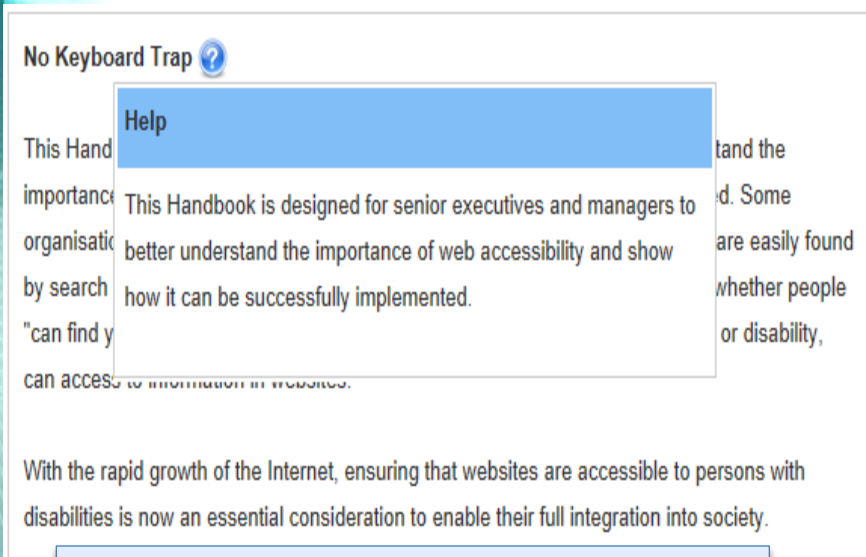


Handwriting

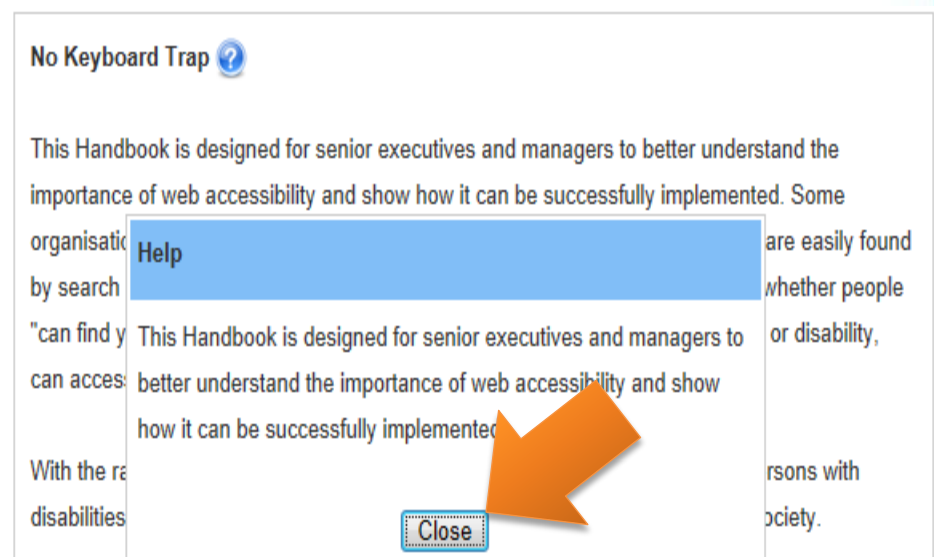
- This does not forbid and should not discourage providing mouse input or other input methods in addition to keyboard operation.

Level A 2.1.2 No Keyboard Trap

- Ensure the keyboard can be used to control or dismiss dialogue boxes, popups or other windows.



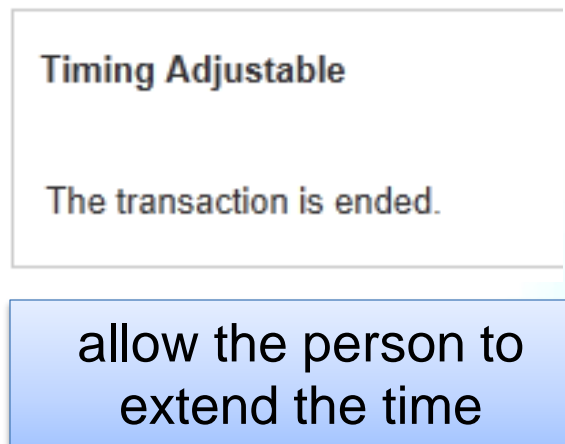
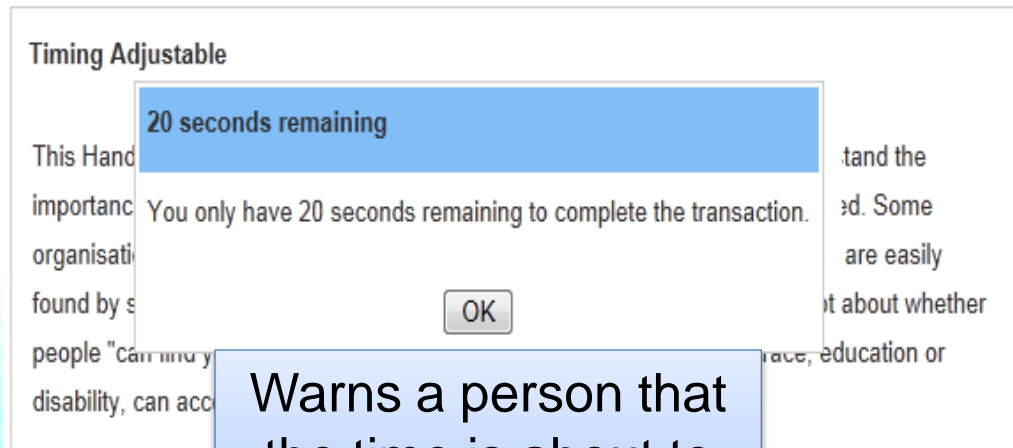
keyboard user may become trapped in the popup



Users can escape the trap of that window by using the Tab key to move to the Close button and pressing Enter.

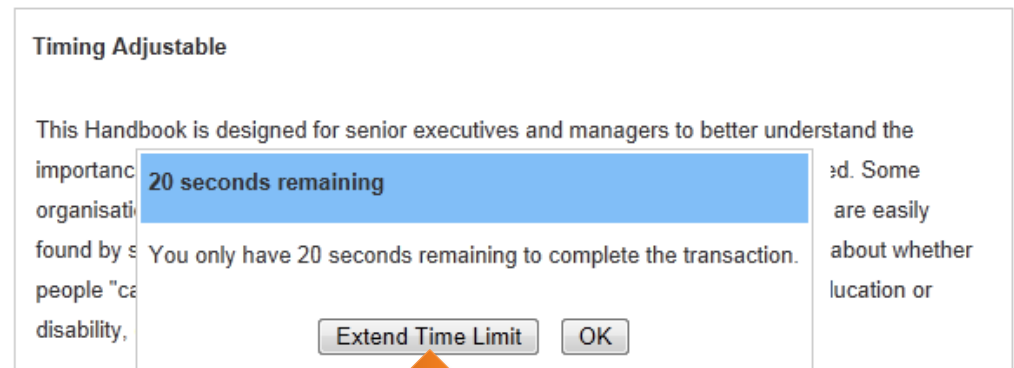
Level A 2.2.1 Timing Adjustable

- Ensure processes on a website are not time dependent. If they are, ensure persons with disabilities can either adjust or stop the time limit so they can have enough time to complete their task.



Level A 2.2.1 Timing Adjustable

- For each time limit that is set by the content, at least one of the following is true
 - Turn off
 - Adjust
 - Extend
 - Real-time Exception
 - Essential Exception
 - 20 Hour Exception



Level A 2.2.2 Pause, Stop, Hide

For content that moves automatically for more than five seconds or is updated automatically, there needs to be a way to stop this movement and stop the webpage from updating, blinking or scrolling.

Live Soccer Commentary

CLUB A VS CLUB B

45 minutes	Player A saves the ball
42 minutes	Player C saves the ball
39 minutes	Player C saves the ball
36 minutes	Player E shoots the ball and Play D saves the ball
33 minutes	Player C saves the ball
30 minutes	Player F dribbles away from Player C
27 minutes	Player B tries to shoot the ball
24 minutes	Player A tries to shoot the ball

content changes
and updates automatically

Level A 2.2.2 Pause, Stop, Hide

- The automatic update can be disabled to facilitate the use of screen readers.

Live Soccer Commentary

Auto Update: [ON](#)

CLUB A VS CLUB B

69 minutes	Player A saves the ball
66 minutes	Player G saves the ball
63 minutes	Player C saves the ball
60 minutes	Player C saves the ball
57 minutes	Player C saves the ball
54 minutes	Player B shoots the ball over the top
51 minutes	Player A tries to shoot the ball
48 minutes	Player A tries to shoot the ball

A function provided to turn off the auto updating

Level A 2.3.1 Three Flashes or Below Threshold

- Web pages do not contain anything that flashes more than three times in any one second period, or the flash is below the general flash and red flash thresholds.

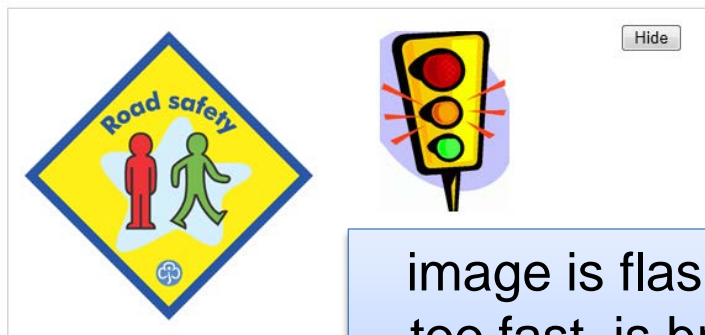


image is flashing too fast, is bright and covers a large part of the screen.



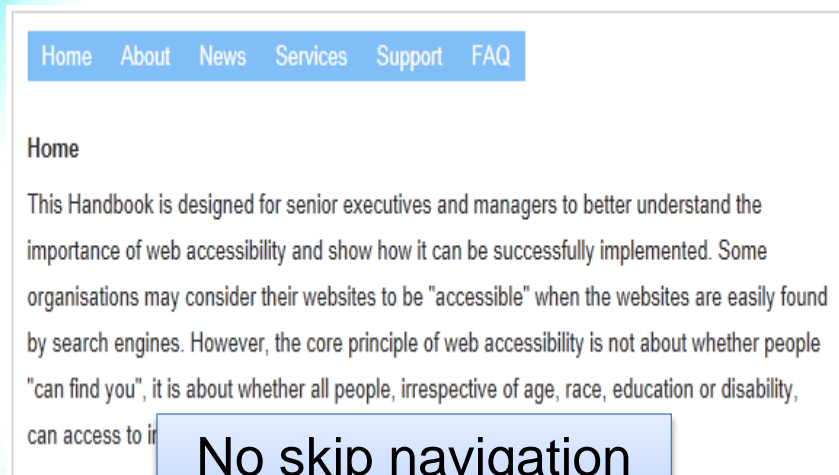
replace flashing content with static content

(Illustration)

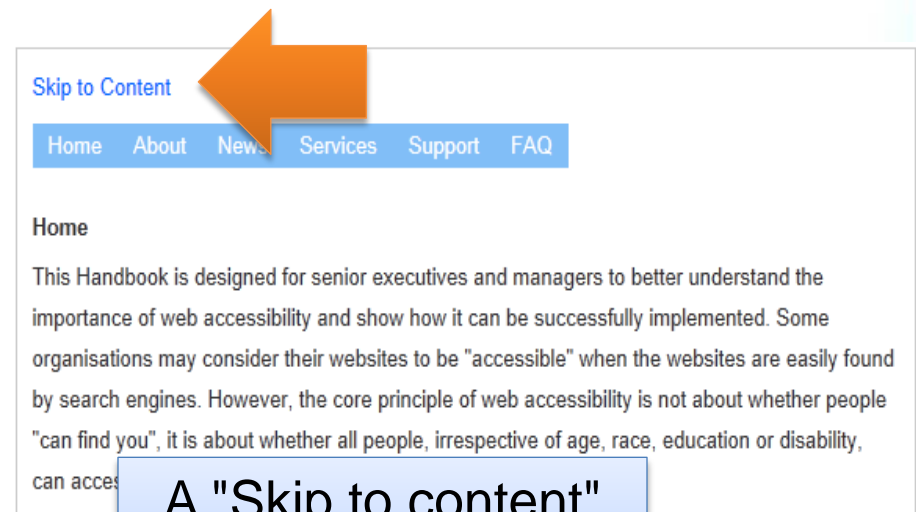
- http://www.ogcio.gov.hk/en/community/web_accessibility/handbook/live_example/web_access_wcag_231.htm

Level A 2.4.1 Bypass Blocks

- A mechanism is available to bypass blocks of content that are repeated on multiple Web pages.



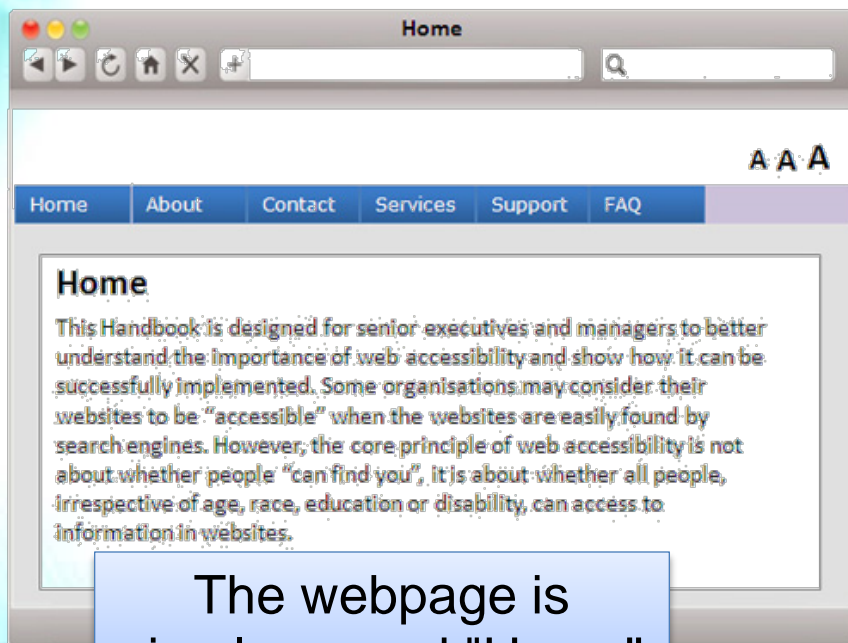
No skip navigation function



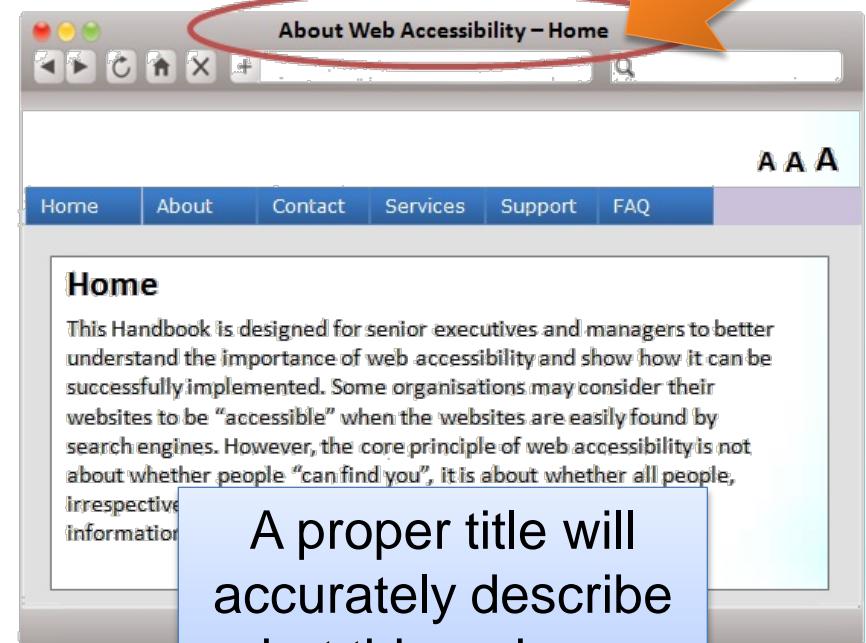
A "Skip to content" link at the top of each webpage

Level A 2.4.2 Page Titled

- Web pages have titles that describe topic or purpose.



The webpage is simply named "Home"



A proper title will accurately describe what this webpage is about

Level A 2.4.3 Focus Order

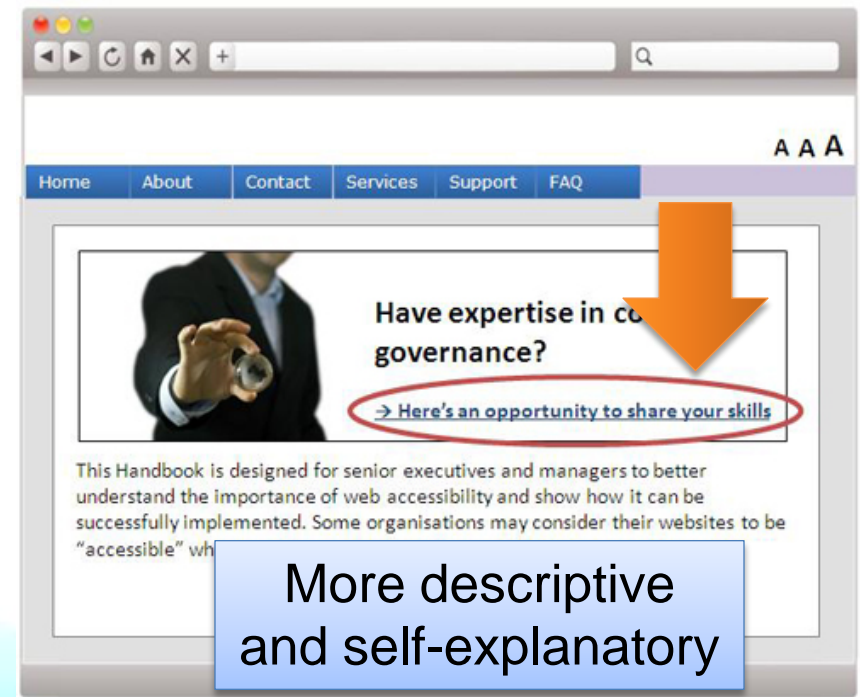
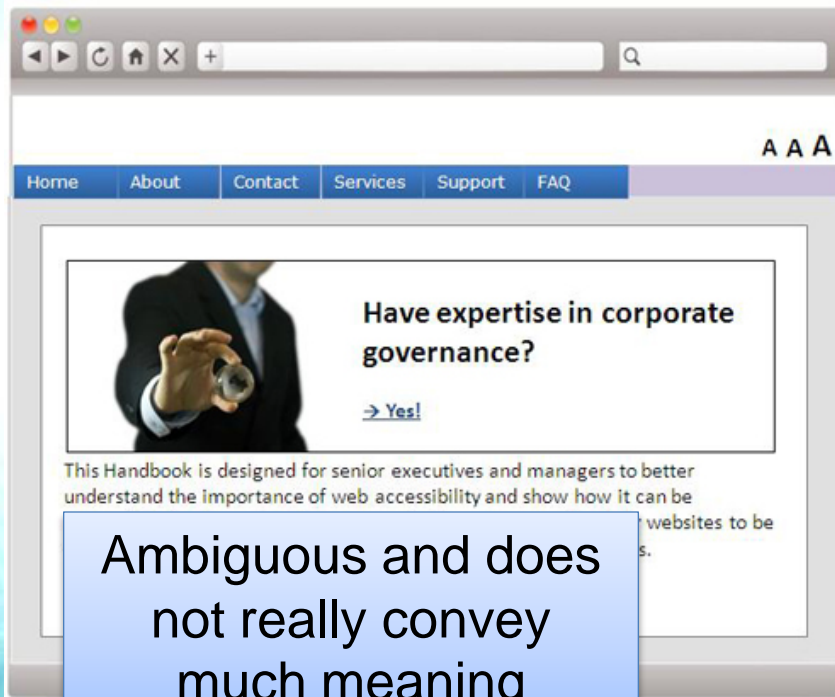
- If a Web page can be navigated sequentially and the navigation sequences affect meaning or operation, focusable components receive focus in an order that preserves meaning and operability.

Illogical focus order

Logical focus order

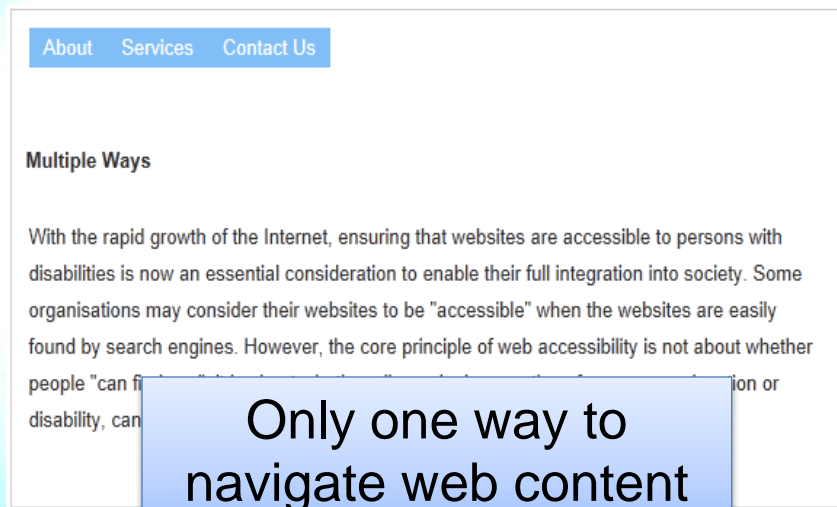
Level A 2.4.4 Link Purpose (In Context)

- Write descriptive link text to ensure the purpose of each link can be understood by the text alone, or by the link text and the context.



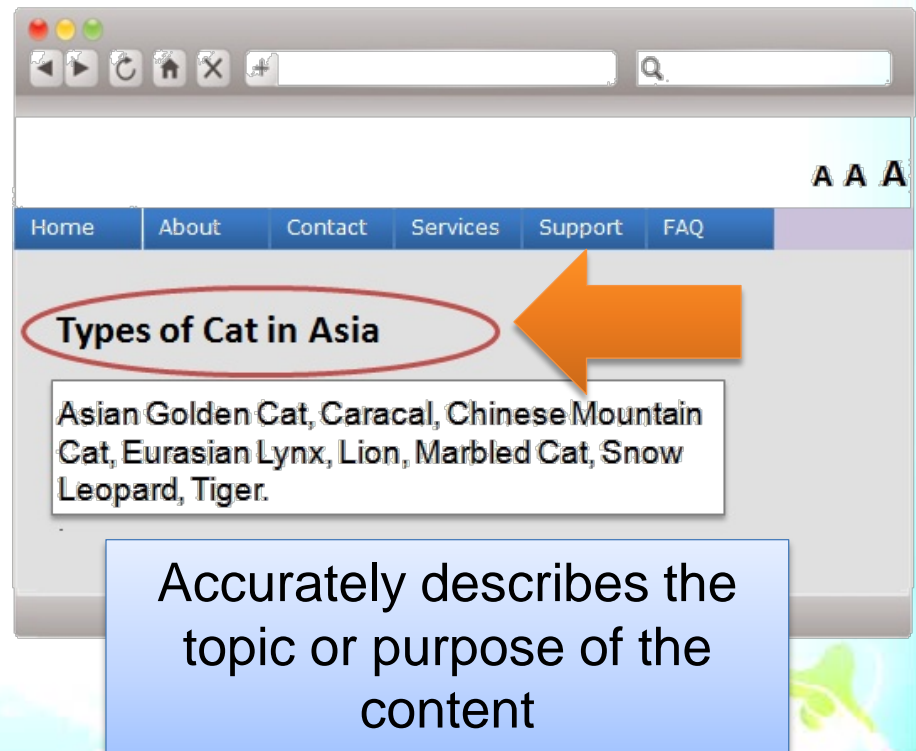
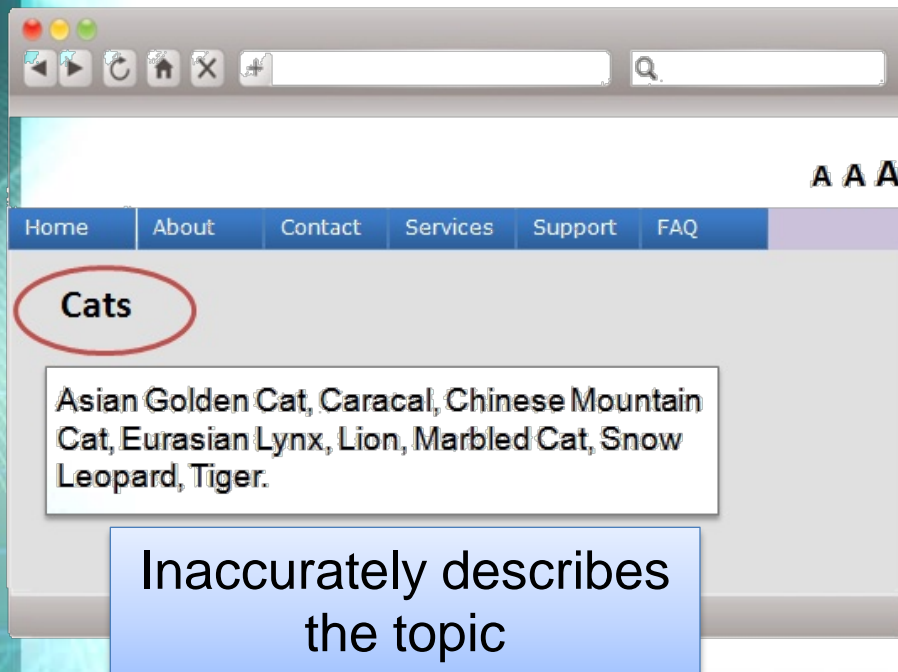
Level AA 2.4.5 Multiple Ways

- More than one way is available to locate a Web page within a set of Web pages except where the Web Page is the result of, or a step in, a process.



Level AA 2.4.6 Headings and Labels


- Headings and labels describe topic or purpose.



Level AA 2.4.7 Focus Visible

- Any keyboard operable user interface has a mode of operation where the keyboard focus indicator is visible.


Login

Bank ID: 


Password:

Login

Lack of input field focus



Login

Bank ID: 

Password:

Login

Vertical bar is visible when the input field is on focus

Level A 3.1.1 Language of Page

- The default human language of each Web page can be programmatically determined.

No language attribute
and value defined

```
<html xmlns="http://www.w3.org/1999/xhtml">
```

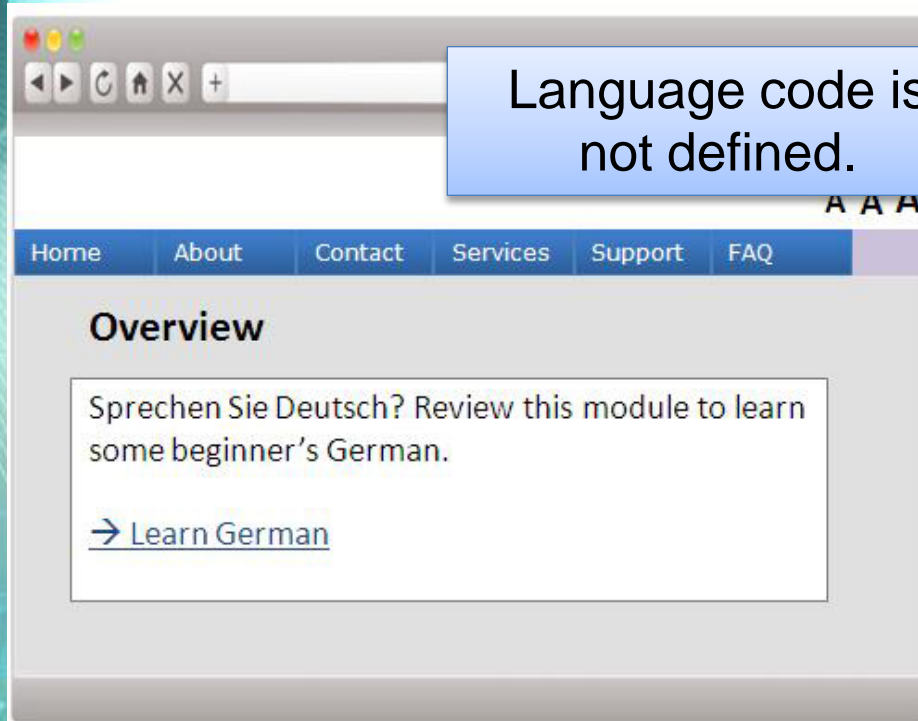
```
<html xmlns="http://www.w3.org/1999/xhtml" xml:lang="zh-CN" lang="zh-CN">
```

Appropriate language
attribute is clearly defined



Level AA 3.1.2 Language of Parts

- The human language of each passage or phrase in the content can be programmatically determined.



Example Code:

```
<p>
Sprechen Sie Deutsch?
Review this module to learn some beginner's German.
</p>
```

Example Code:

```
<blockquote xml:lang="de">
Sprechen Sie Deutsch?
</blockquote>
<blockquote xml:lang="en-GB">
Review this module to learn some beginner's German.
</blockquote>
```

A green arrow points from the text "Proper language code is defined specifically" to the `xml:lang="de"` attribute in the first code block.

Proper language code is defined specifically

Level AA 3.1.2 Language of Parts

- Except for proper names, technical terms, words of indeterminate language, and words or phrases that have become part of the vernacular of the immediately surrounding text.

a b c **ch** d **dd** e f **ff** g **ng** h i l **ll** m n
o p **ph** r **rh** s t **th** u w y

a **á** b c **č** d **ď** e **é** **ě** f g h **ch** i **í** j k l m n **ň**
o **ó** p q r **ř** s **š** t **ť** u **ú** **ů** v w x y z **ž**

a b c d e f g h i j k l m n
o p q r s t u v w x y z **æ** **ø** **å**

a **á** b d **ď** e **é** f g h i **í** j k l m n
o **ó** p r s t u **ú** v x y **ý** **þ** **æ** **ö**



Level A 3.2.1 On Focus


- When any component receives focus, it does not initiate a change of context.

"Help" dialogue provided in each tabbed field

Online Form

User Code:

Question:



Online Form

User Code:

Question:

Help

Please enter a 8-character user code.

Close

Online Form

User Code:

Question:

Help



Allow the user to activate "Help" only at their choice

Level A 3.2.2 On Input

- Changing the setting of any user interface component does not automatically cause a change of context unless the user has been advised of the behaviour before using the component.

Online Form

Destination:

Content to be changed
automatically

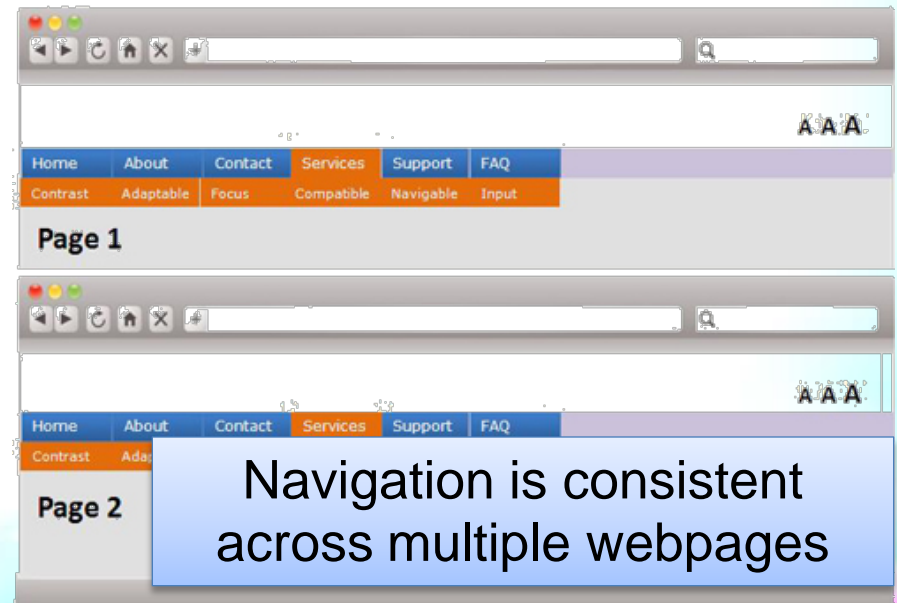
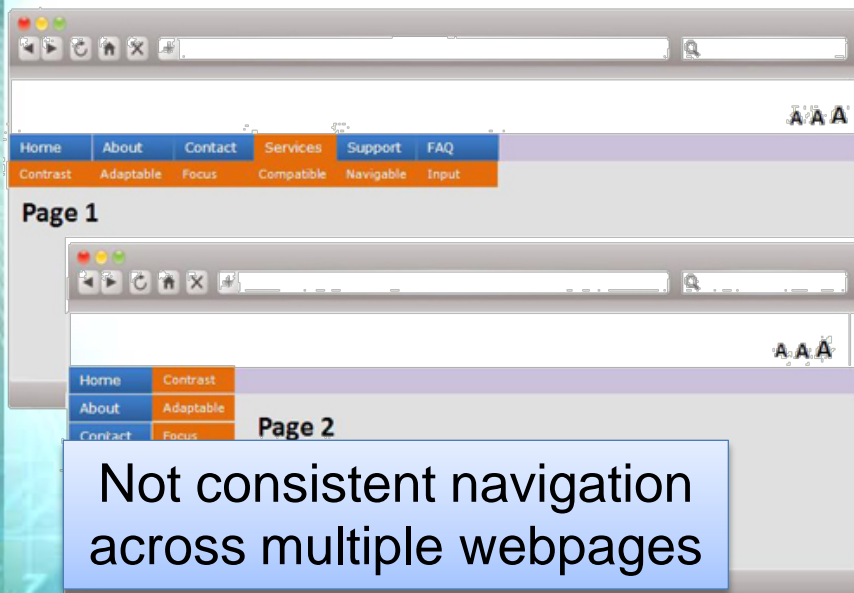
Online Form

Destination:

It gives the user control over
when to submit the option

Level AA 3.2.3 Consistent Navigation

- Navigational mechanisms that are repeated on multiple Web pages within a set of Web pages occur in the same relative order each time they are repeated, unless a change is initiated by the user.



Level AA 3.2.4 Consistent Identification

- Components that have the same functionality within a set of Web pages are identified consistently.

Broadband + Home Phone \$69.95

Stay in touch with \$29 call value, included line rental, plus loads of data

Interested? Buy Now

Blackberry

3.5" Touchscreen
5MP Camera
GPS Navigation

Purchase

two buttons have different label for each button

Broadband + Home Phone \$69.95

Stay in touch with \$29 call value, included line rental, plus loads of data

Buy Now

Blackberry

3.5" Touchscreen
5MP Camera
GPS Navigation

Buy Now

buttons' label are consistent and clear

Level A 3.3.1 Error Identification

- If an input error is automatically detected, the item that is in error is identified and the error is described to the user in text.

Online Form

The form contains errors

Name:

Phone:

Unclear error information

Online Form

Please use only numbers in the phone field

Name:

Phone:

Appropriate and clear error information

Level A 3.3.2 Labels or Instructions

- Labels or instructions are provided when content requires user input.

Customer Database

First Name:	<input type="text"/>	Last Name:	<input type="text"/>
Address:	<input type="text"/>	Email:	<input type="text"/>
Phone:	<input type="text"/>		

No information on what format to use to enter each input field.

Provided simple instructions to the fields



Customer Database

First Name:	<input type="text" value="Enter First Name"/>	Last Name:	<input type="text" value="Enter Last Name"/>
Address:	<input type="text" value="Enter Address"/>	Email:	<input type="text" value="Enter Email"/>
Phone:	<input type="text" value="Enter Phone no."/>		

Level AA 3.3.3 Error Suggestion

- If an input error is automatically detected and suggestions for correction are known, then the suggestions are provided to the user, unless it would jeopardize the security or purpose of the content.

Online Multipage Survey

Thank you for taking part in our study. The online survey should take about 15 to 20 minutes to complete.

First Name:

Last Name:

Home Address:

error message that is not helpful enough

labeled 'Next' located in the lower right section of the page."

Error: An error has occurred.

NEXT

Online Multipage Survey

Thank you for taking part in our study. The online survey should take about 15 to 20 minutes to complete.

First Name:

Last Name:

Home Address:

message that is located at the top of the webpage and provides a good explanation

NEXT

Level AA 3.3.4 Error Prevention (Legal, Financial, Data)

- For Web pages that cause legal commitments or financial transactions for the user to occur, that modify or delete user-controllable data in data storage systems, or that submit user test responses.

Step 3 of 3: Complete Transaction

Your Order

Vanilla Scented Candle	QTY: <input type="text" value="2"/>
Crystal Candle Holder	QTY: <input type="text" value="2"/>
	Total: <input type="text" value="\$220.00"/>

user is forced to place the order without a confirmation process.

Step 3 of 3: Complete Transaction

Your order is Confirmed! Thank you for your purchase.

Level AA 3.3.4 Error Prevention (Legal, Financial, Data)

Step 3 of 4: Confirm Transaction

Your Order

Vanilla Scented Candle	QTY:	<input type="text" value="2"/>
Crystal Candle Holder	QTY:	<input type="text" value="2"/>
Total:		\$220.00

Step 4 of 4: Complete Transaction

Your order is Confirmed! Thank you for your purchase.

Step 4 of 4: Complete Transaction

Your Order

Vanilla Scented Candle	QTY:	2
Crystal Candle Holder	QTY:	2
Total:		\$220.00

allow users to first confirm and allow the option to change any of the details before the final submission

Level A 4.1.1 Parsing

- In content implemented using markup languages, elements have complete start and end tags, elements are nested according to their specifications, elements do not contain duplicate attributes, and any IDs are unique, except where the specifications allow these features.



```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01//EN"
<html>
  <head>
    <meta name="TITLE" content="..."
    <meta name="KEYWORDS" content="..."
    <meta name="DESCRIPTION" content="..."
    <link rel="stylesheet" type="text/css" href="..."
    <script language="javascript" src="..."
  </head>
  <body bgcolor="#ffffff" width="100%"
```



Level A 4.1.1 Parsing

Breakfastmenu.xml

```
<breakfast_menu>
```

```
<food>
```

```
<name>Belgian Waffles</name>
```

```
<price>$5.95</price>
```

```
<descriptionn>
```

Two of our famous Belgian Waffles with plenty of real maple syrup

```
</description>
```

```
<calories>650 </calories>
```

```
</food>
```

```
<food>
```

```
<name>Bacon and Eggs</name>
```

```
<price>$7.95</price>
```

```
<description>
```

Bacon and eggs served on toast

```
</description>
```

```
<calories>900
```

```
</food>
```

```
<breakfast_menu>
```

Misspelled closing tag

Missing a "</calories>" closing tag

Breakfastmenu.xml

```
<breakfast_menu>
```

```
<food>
```

```
<name>Belgian Waffles</name>
```

```
<price>$5.95</price>
```

```
<description>
```

Two of our famous Belgian Waffles with plenty of real maple syrup

```
</description>
```

```
<calories>650</calories>
```

```
</food>
```

```
<food>
```

```
<name>Bacon and Eggs</name>
```

```
<price>$7.95</price>
```

```
<description>
```

Bacon and eggs served on toast

```
</description>
```

```
<calories>900</calories>
```

```
</food>
```


```
<breakfast_menu>
```

All tags have opening and closing structures and are spelled correctly

Level A 4.1.2 Name, Role, Value

- For all user interface components (including but not limited to: form elements, links and components generated by scripts), the name and role can be programmatically determined; states, properties, and values that can be set by the user can be programmatically set; and notification of changes to these items is available to user agents, including assistive technologies.

Online Form

Destination: 

an image is used for a button

Online Form

Destination:

The input element is of the button type

W3C WCAG 2.0 – Audio and Video Requirements

	Level A	Level AA	Level AAA
Pre-recorded audio only	Text-transcript [Success criteria 1.2.1]		Sign language [Success criteria 1.2.6]
Pre-recorded video only	Text-transcript / audio track [Success criteria 1.2.1]		Sign language [Success criteria 1.2.6]
Pre-recorded video	Captions + (audio description / text transcript) [Success criteria 1.2.2 and 1.2.3]	Captions + audio description [Success criteria 1.2.5]	Extended audio description + text description + sign language [Success criteria 1.2.7 and 1.2.8]
Live video		Captions [Success criteria 1.2.4]	
Live audio only			Live text caption / provide a link to text transcript of a prepared script [Success criteria 1.2.9]

Common Problem in Website

- No alternative for non-text information
- Can not through a keyboard to select option or skip the entry point Flash animation
- Major operations can not be performed through a keyboard
- Do not have accurate and logical headings as well as relevant descriptions
- Unable to skip repetitive blocks of content such as navigation information
- The automatic update can not be disabled
- Inaccessible PDF file

