

Office of the Government Chief Information Officer

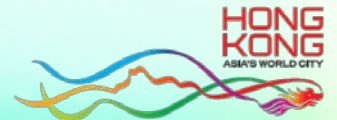
Mobile Application Accessibility Design

Digital Inclusion Divison

10 October 2013



政府資訊科技總監辦公室
Office of the Government Chief Information Officer



Agenda

- **Common Design Problems and Improved Methods**
- **Successful Examples Sharing**
- **How to Build Your Accessible Mobile Apps**
- **Mobile Application Accessibility Handbook**
- **Web Accessibility Recognition Scheme - Mobile Application Stream Judging Criteria**





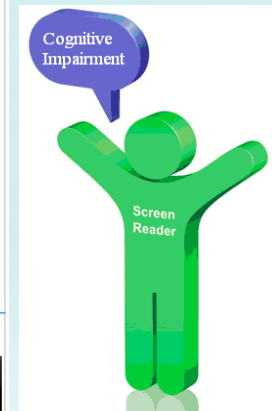
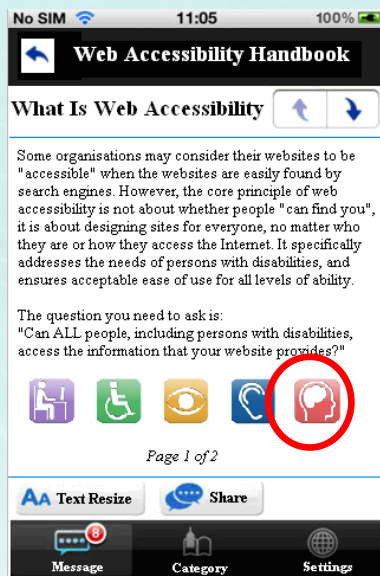
Common Design Problems and Improved Methods



Common Design Problems and Improved Methods

1. No alternatives for non-text content

- Persons with visual impairment cannot perceive the image content

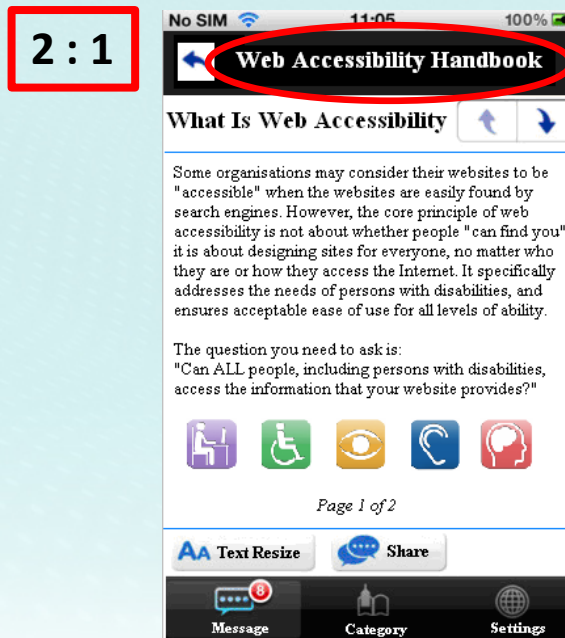


✓ e.g. contain descriptive text alternative for images

Common Design Problems and Improved Methods

2. Insufficient colour contrast

- Persons with low vision have difficulty reading text that does not contrast with its background

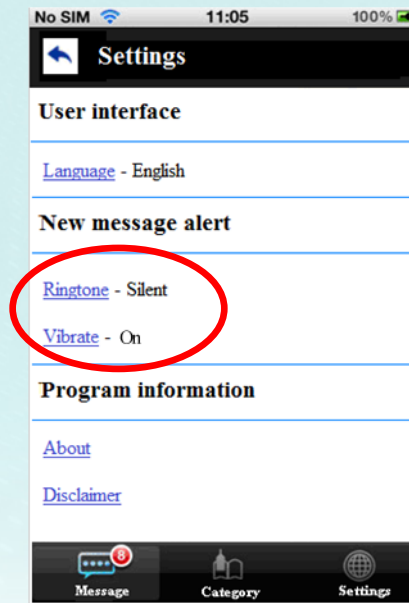
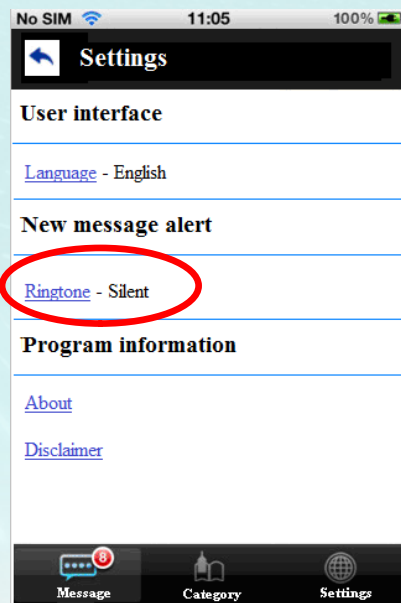


✓ e.g. provide sufficient contrast ratio

Common Design Problems and Improved Methods

3. “Vibrate” option notification not provided

- Persons with hearing impairment have difficulty to receive the alarm

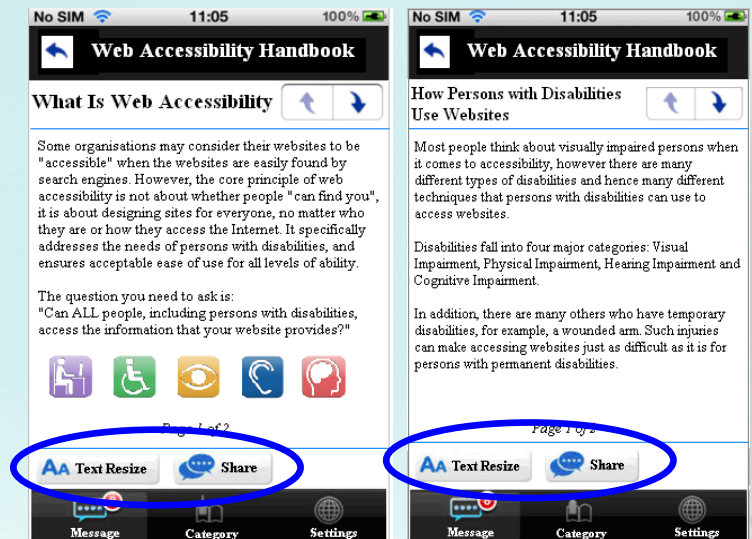
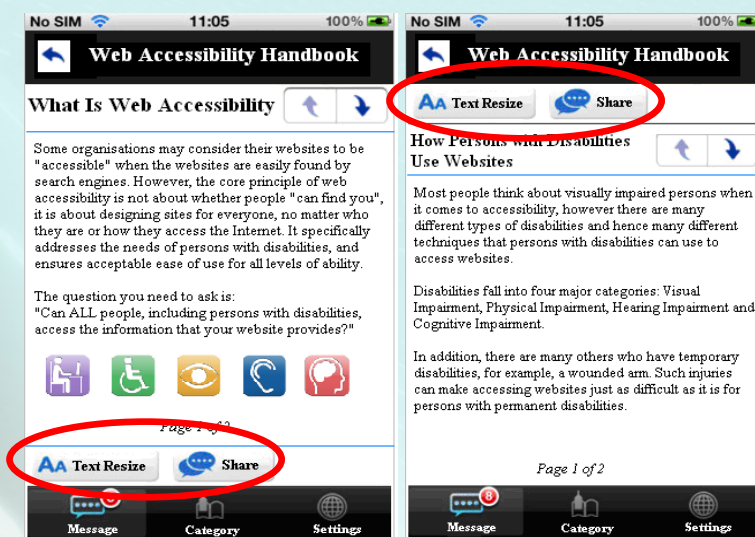


✓ e.g. provide alternative means for notification

Common Design Problems and Improved Methods

4. User interface is complex and not consistent

- Persons with cognitive impairment have difficulty to operate and understand mobile application



✓ e.g. provide consistent and simple navigation structure for the user interface



Successful Examples Sharing



GovHK Branded Apps Demo (con't)

- App Name : GovHK Notifications

香港政府通知你

- Platform : iOS 5 or above
- Device : iPhone 4S

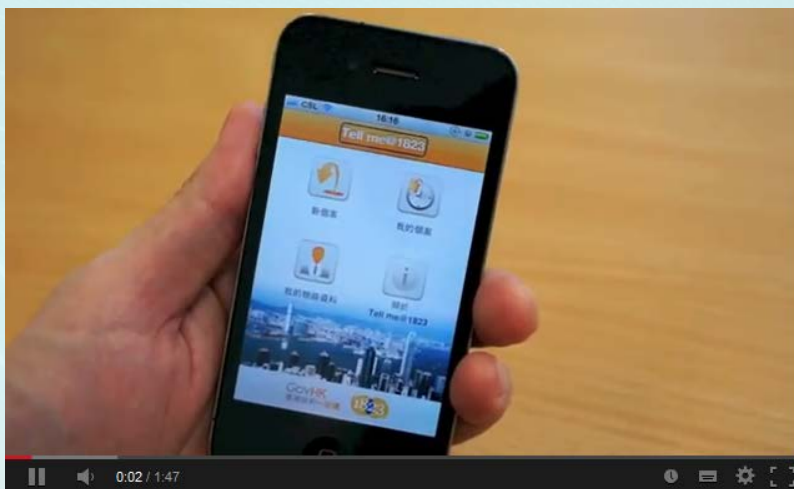


<http://www.youtube.com/watch?v=-RLLfQ72bBg&feature=youtu.be>



GovHK Branded Apps Demo

- **App Name : Tell me@1823**
 - Platform : iOS 6 or above
 - Device : iPhone 4S or above



http://www.youtube.com/watch?v=68O1_LT0mWk





How to Build Your Accessible Mobile Apps



How to Build Your Accessible Mobile Apps

Step 1

- Understand the accessibility requirements
- Observe relevant guidelines (www.webforall.gov.hk)
- Make reference to Mobile Application Accessibility Handbook

Step 2

- Make user interface structure and content simple to be used with screen readers (e.g. Voiceover and TalkBack)
 - Logical reading sequence
 - Consistent user interface
 - Provide versions for larger screen display (e.g. tablet)
 - Allow more options for input (e.g. “vibrate” for notification)



How to Build Your Accessible Mobile Apps

Step 3

- Test your mobile apps
 - Code Review
 - Testing using screen reader
 - Able to read all components (buttons, images, labels, etc.)
 - Able to proceed properly when using screen reader
 - Visual Review, e.g.
 - Provide apps information buttons such as “Info”, “Help”, “Settings”
 - Able to resize text without distortion of information
 - Able to operate properly when rotating the screen



How to Build Your Accessible Mobile Apps

- Test your mobile apps (continue)
 - Visual Review, e.g.
 - Provide sufficient spacing between the buttons
 - Provide accessibility statement and contact point for enquiries

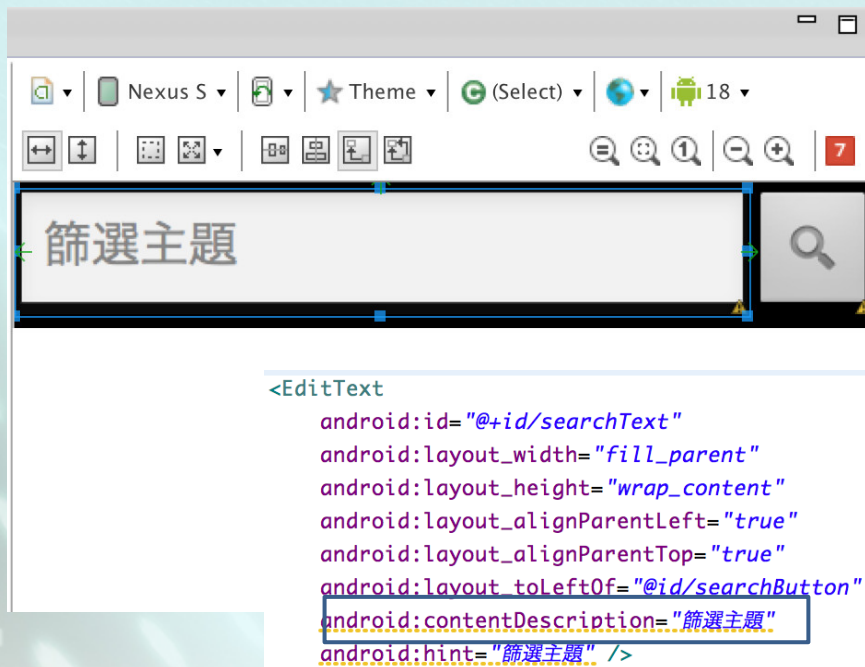
Step 5

- Human testing (by persons with disabilities preferably)

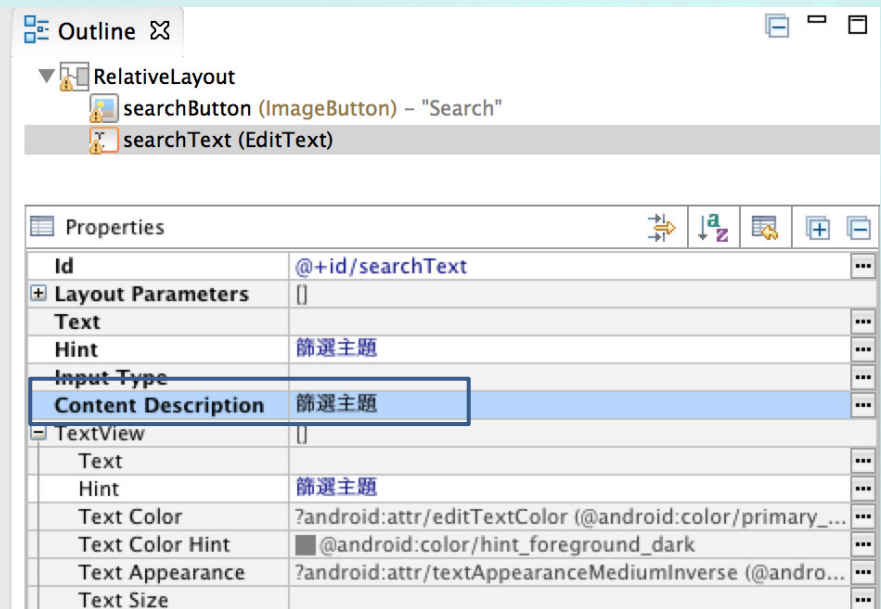


1. Code Review

Android Talkback users rely on the **Content Description** use the application.



```
<EditText
    android:id="@+id/searchText"
    android:layout_width="fill_parent"
    android:layout_height="wrap_content"
    android:layout_alignParentLeft="true"
    android:layout_alignParentTop="true"
    android:layout_toLeftOf="@id/searchButton"
    android:contentDescription="篩選主題"
    android:hint="篩選主題" />
```

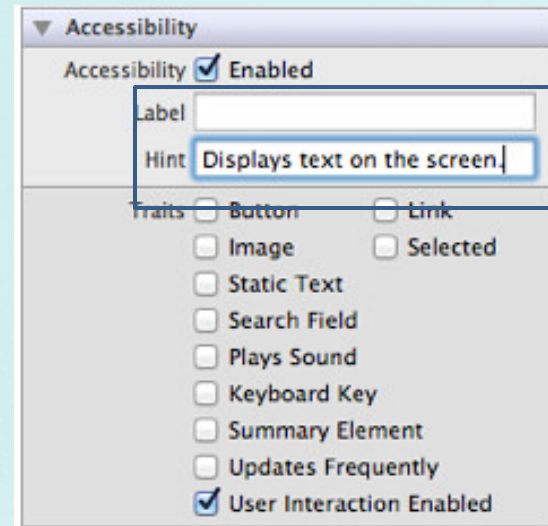
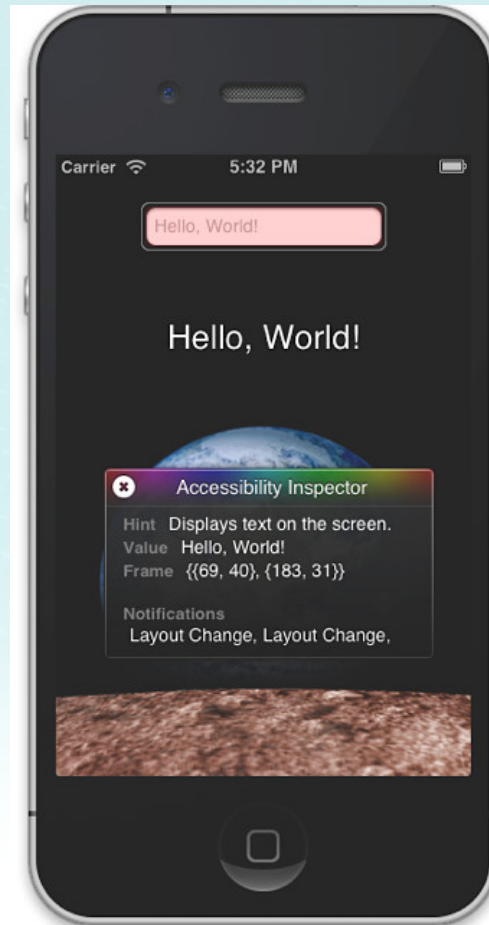


Properties	
Id	@+id/searchText
Layout Parameters	[]
Text	
Hint	篩選主題
Input Type	
Content Description	篩選主題
TextView	[]
Text	
Hint	篩選主題
Text Color	?android.attr/editTextColor (@android:color/primary_...
Text Color Hint	@android:color/hint_foreground_dark
Text Appearance	?android.attr/textAppearanceMediumInverse (@andro...
Text Size	

1. Code Review

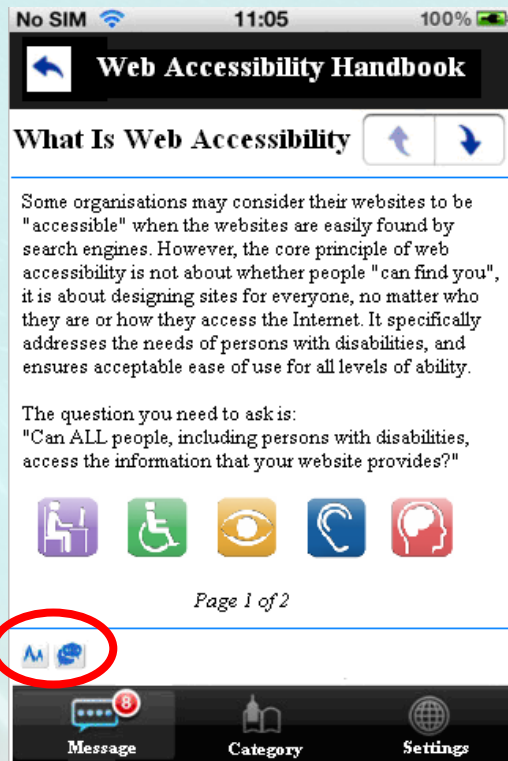
Enable Accessibility features in iOS platform (XCode)

VoiceOver users rely on the **labels** and **hints** to use the application



2. Clickable Object Size

- Make all clickable objects large enough to be tapped



2. Clickable Object Size

Testing: Visual Review

Button and Links
are large enough
for tapping



Source :

<http://www.gov.hk/en/about/govdirectory/mobilesites.htm>



3. Headings

- Provide clear and simple headings



3. Headings

Testing: Visual Review, Manual Test with Screen Reader

Clear and simple headings

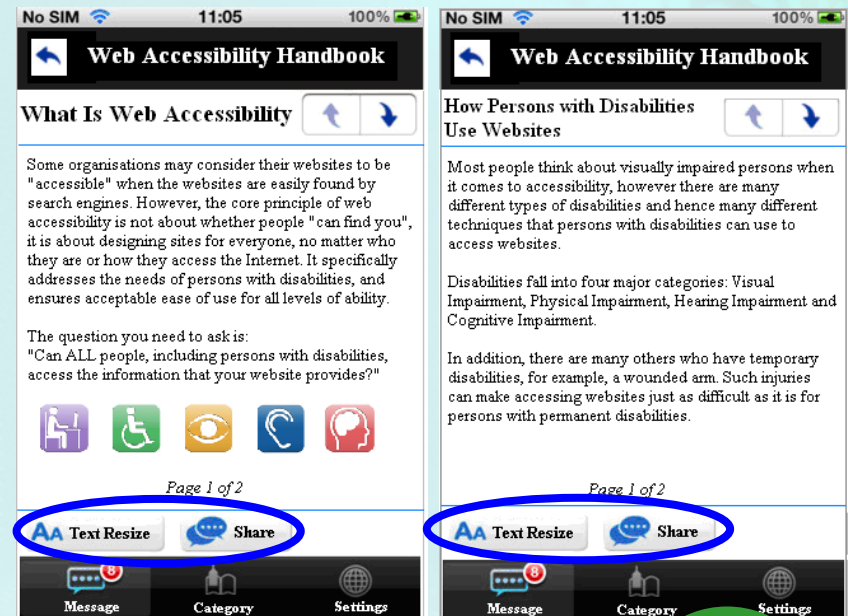
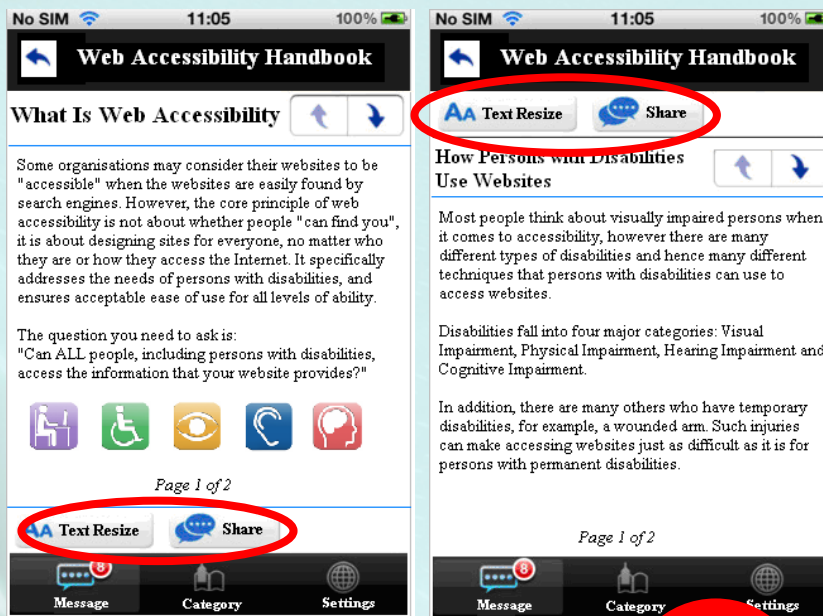


Source : <http://www.gov.hk/en/about/govdirectory/mobilesites.htm>



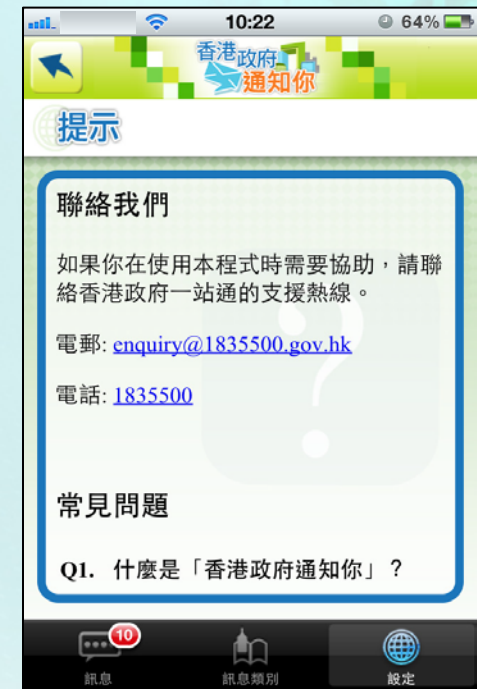
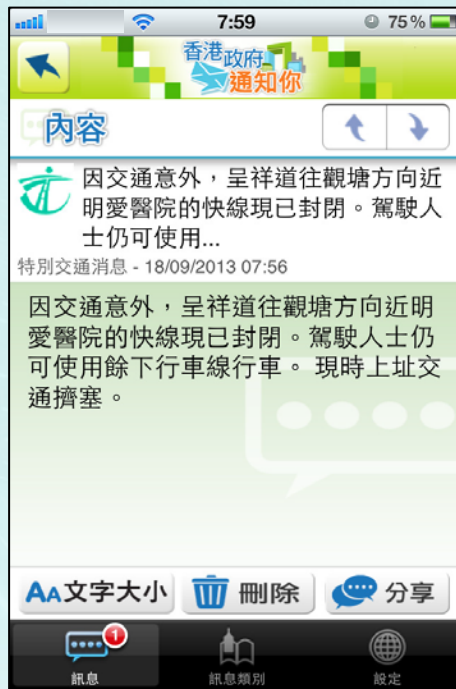
4. Structure and Content

- Provide consistent and simple user interface structure



4. Structure and Content

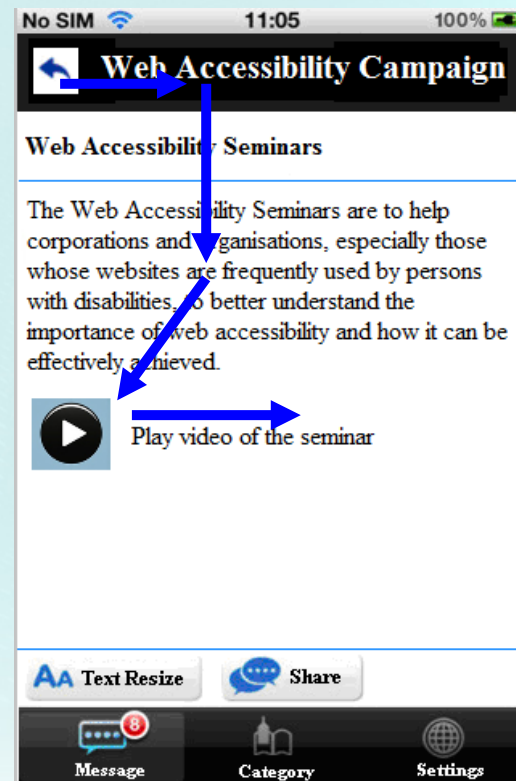
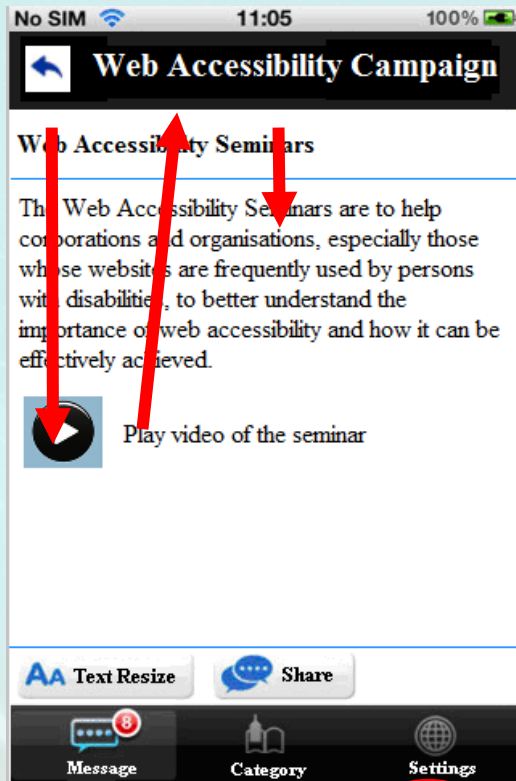
Testing: Visual Review, Manual Test with Screen Reader



Source : <http://www.gov.hk/en/about/govdirectory/mobilesites.htm>

5. Meaningful Sequence

- Make sure the content is coded in a logical order



H2



5. Meaningful Sequence

Testing: Manual Testing with Screen Reader



Screen reader reads the information from left to right, top to bottom sequences

Source :

<http://www.gov.hk/en/about/govdirectory/mobilesites.htm>



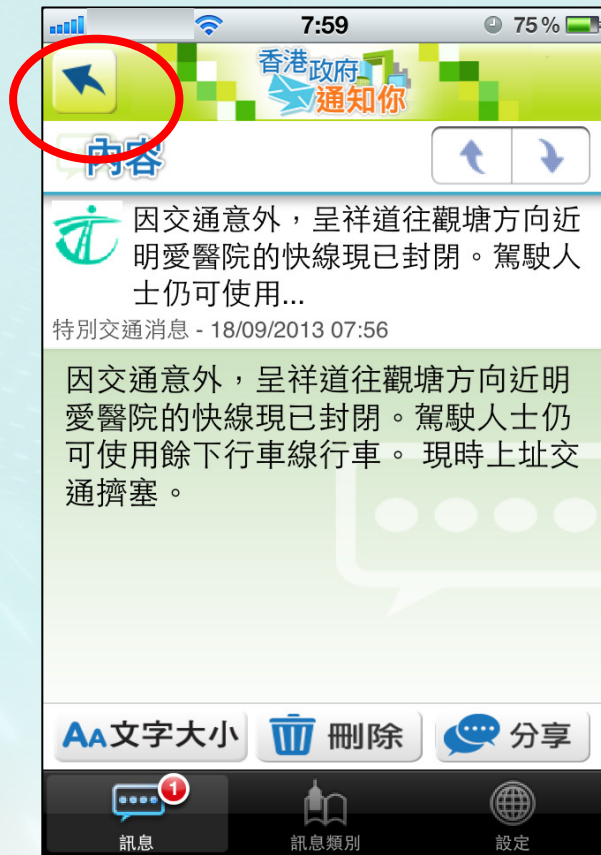
6. Navigation

- Provide navigation for going backward



6. Navigation

Testing: Visual Review, Manual Test with Screen Reader

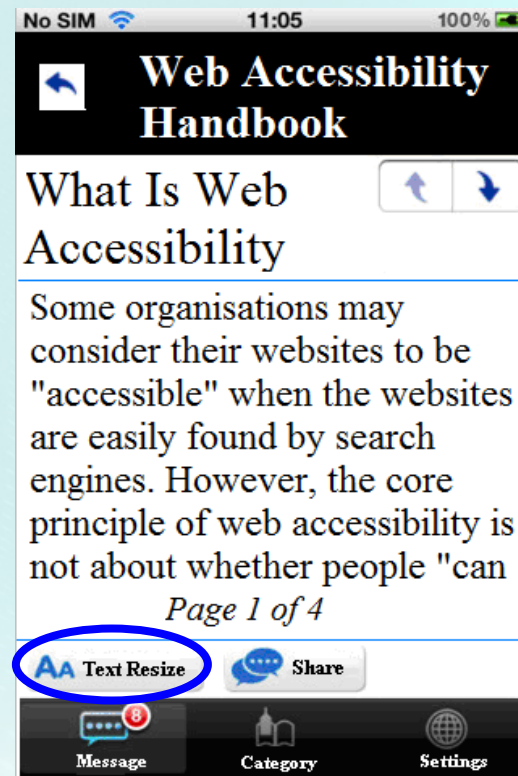


Source : <http://www.gov.hk/en/about/govdirectory/mobilesites.htm>



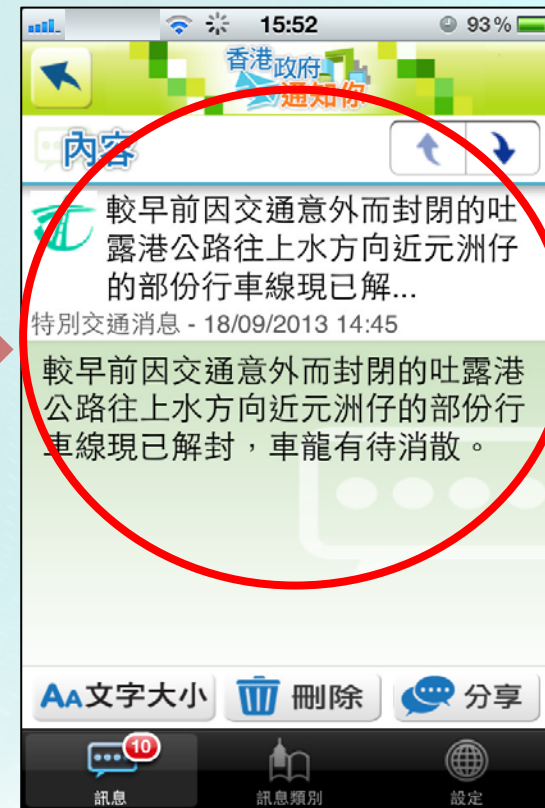
7. Text Resize

- Text resize function or text can be zoomed without loss of content



7. Text Resize

Testing: Visual Review and Human Testing

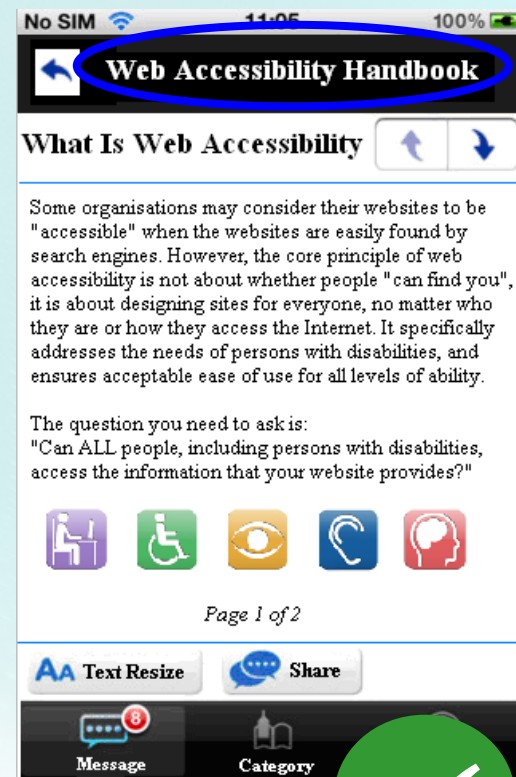


Text resize
without
loss of
content

Source : <http://www.gov.hk/en/about/govdirectory/mobilesites.htm>

8. Sufficient Colour Contrast

- The visual presentation of text and image of text has a contrast ratio of at least 4.5 : 1. Logo or brand name is exempted



8. Sufficient Colour Contrast

Testing: Colour contrast check

http://snook.ca/technical/colour_contrast/colour.html

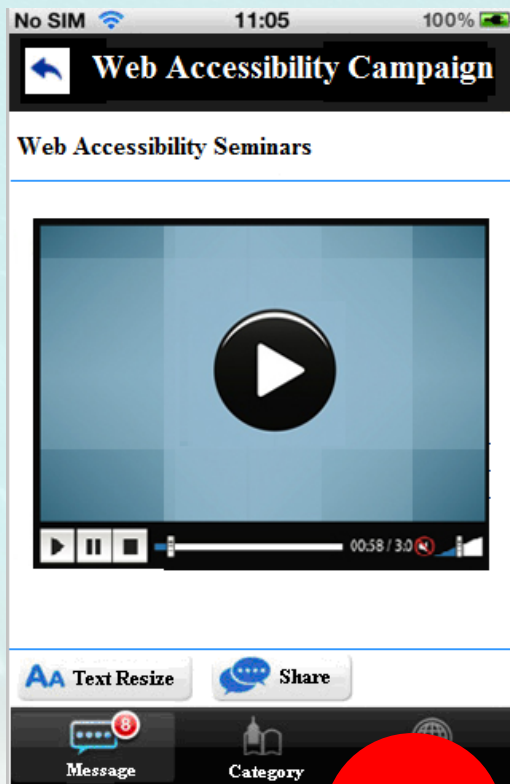
The screenshot shows a color contrast checker interface. On the left, there are two columns of sliders for adjusting color properties. The first column is for the foreground color, and the second is for the background color. The foreground color is set to #007897 and the background color is set to #F1F1F1. On the right, there is a 'Results' section showing various compliance metrics. A red box highlights the 'Contrast Ratio' and 'WCAG 2 AA Compliant' results.

Property	Value
Foreground Colour:	#007897
Background Colour:	#F1F1F1
Brightness Difference: (>= 125)	153.34
Colour Difference: (>= 500)	452
Are colours compliant?	sort of..
Contrast Ratio	4.5
WCAG 2 AA Compliant	YES
WCAG 2 AA Compliant (18pt+)	YES
WCAG 2 AAA Compliant	NO
WCAG 2 AAA Compliant (18pt+)	YES



9. Video

- Provide captions or sign language for pre-recorded videos



9. Video

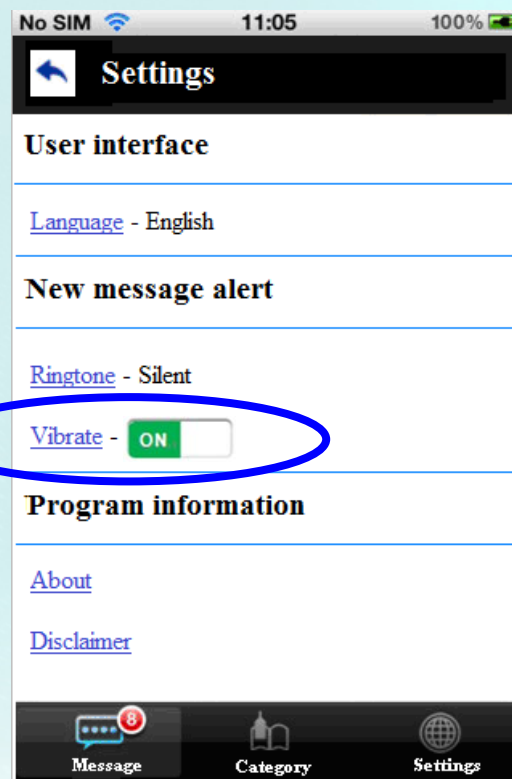
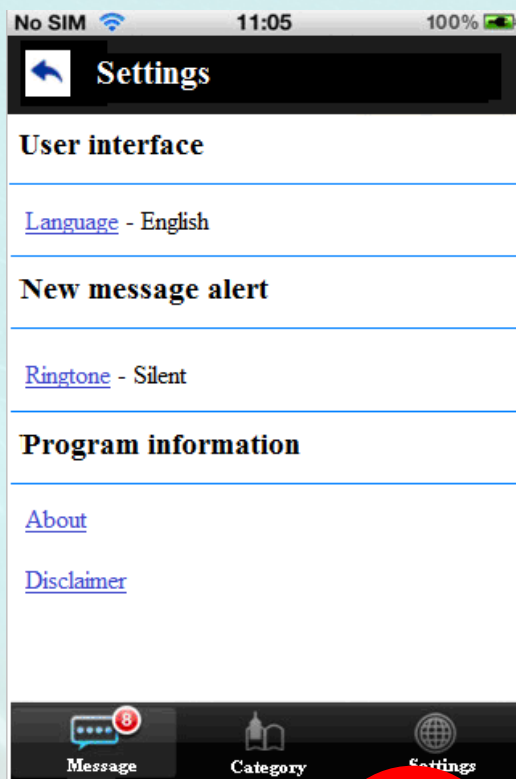
Testing: Visual Review



Source : <http://www.gov.hk/en/about/govdirectory/mobilesites.htm>

10. Notification

- Provide alternative means for notification



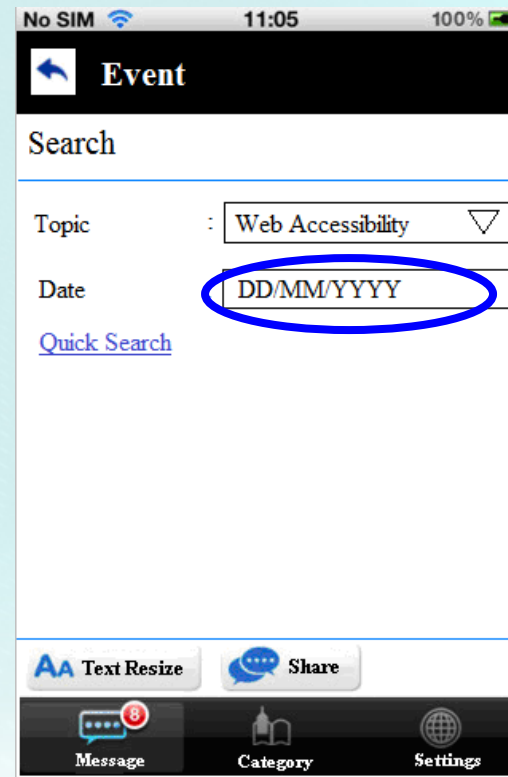
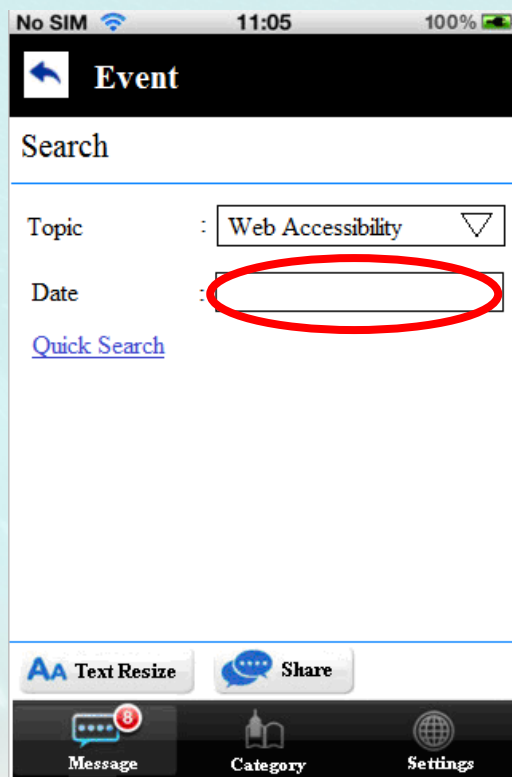
10. Notification

Testing: Visual Review, Manual Testing with Screen Reader



11. Input Assistance

- Provide input assistance such as proper labels or instructions for user input



11. Input Assistance

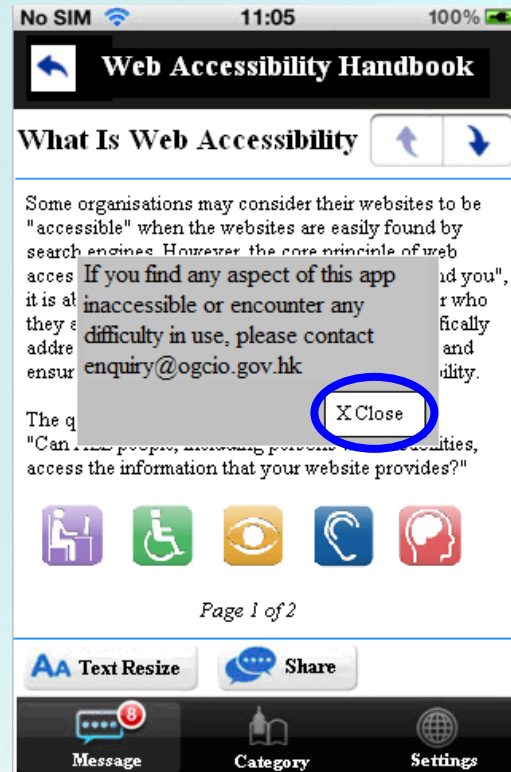
Testing: Visual Review, Manual Testing with Screen Reader



Source : <http://www.gov.hk/en/about/govdirectory/mobilesites.htm>

12. Popovers

- Provide means to close a popover screen.



12. Popover

Testing: Visual Review, Manual Testing with Screen Reader



Source : <http://www.gov.hk/en/about/govdirectory/mobilesites.htm>

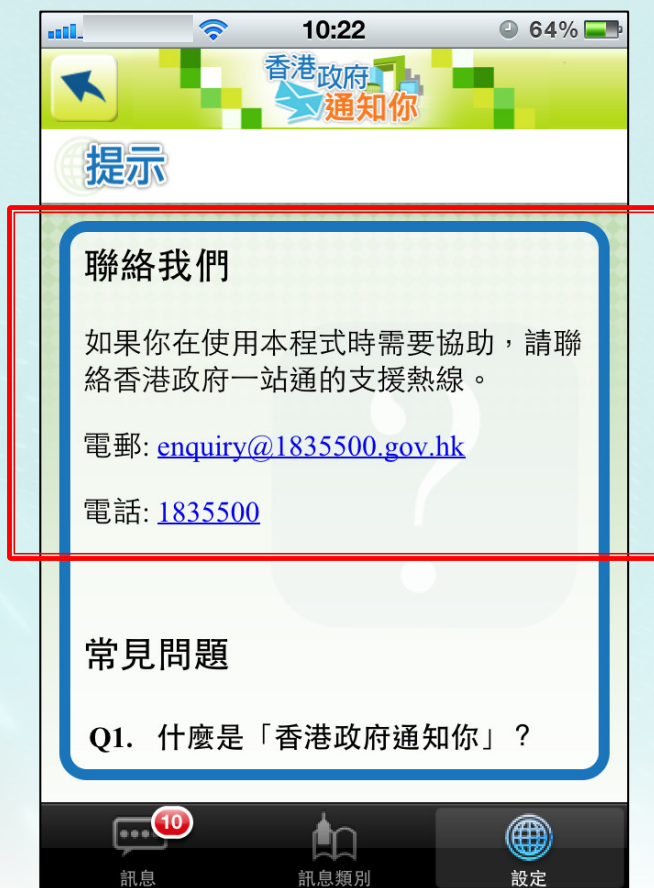
13. Accessibility Statement

- Provide contact points or email feedback as well as an accessibility statement



13. Accessibility Statement

Testing: Visual Review



Source :

<http://www.gov.hk/en/about/govdirectory/mobilesites.htm>



Mobile Application Accessibility Handbook



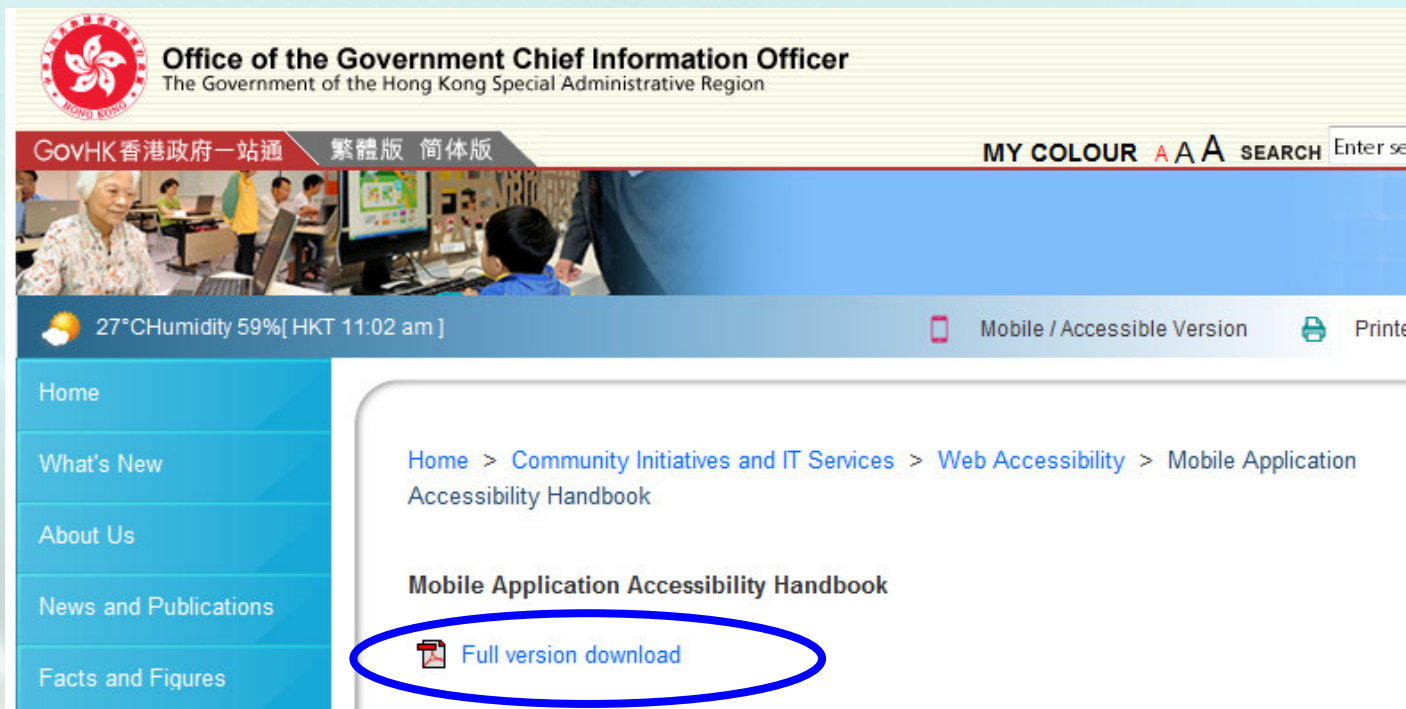
Mobile Application Accessibility Handbook



- Designed for mobile application owners and developers
- Based on the W3C Web Content Accessibility Guidelines 2.0 (WCAG 2.0) and collected feedbacks from the local disability groups
- Basic concept and best practices in making accessible mobile applications
- Best Practice Checklist for Developers
- Resources reference


Mobile Application Accessibility Handbook

Please download the handbook from OGCIO website
<http://www.webforall.gov.hk/en/maahandbook>



The screenshot shows the website header with the OGCIO logo and name. Below the header, there are navigation links for 'GovHK 香港政府一站通', '繁體版', and '简体版'. A search bar is also visible. The main content area displays the breadcrumb trail: Home > Community Initiatives and IT Services > Web Accessibility > Mobile Application Accessibility Handbook. Underneath, the title 'Mobile Application Accessibility Handbook' is followed by a blue link 'Full version download' with a document icon, which is circled in blue. A sidebar on the left contains links for Home, What's New, About Us, News and Publications, and Facts and Figures. The top of the page shows the weather and time: 27°C Humidity 59% [HKT 11:02 am].





Web Accessibility Recognition Scheme

Mobile Application Stream

Judging Criteria

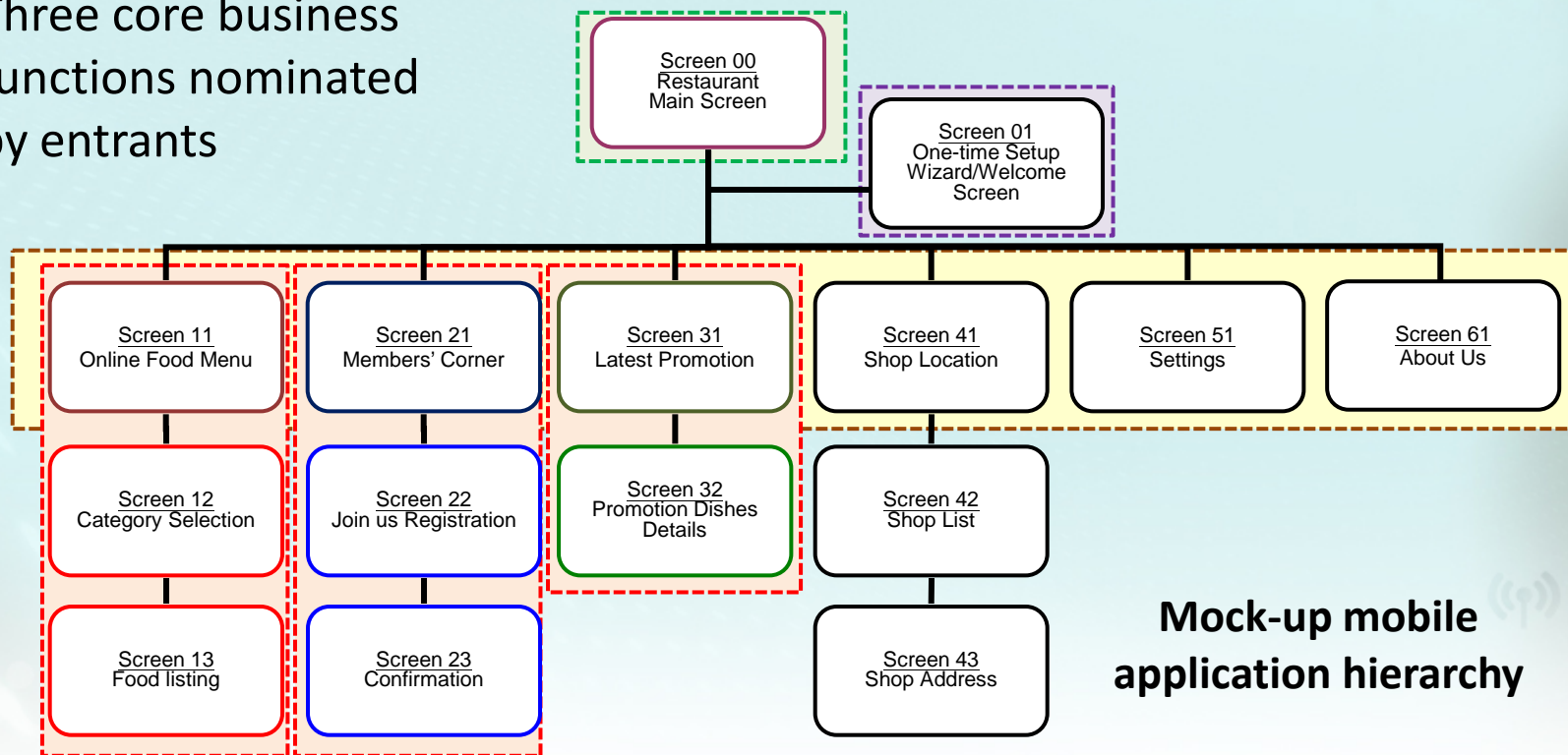
<http://www.webforall.gov.hk/en/scheme>



Judging Criteria

Assessment Area – Mobile Application Stream

1. Main screen
2. One-time Setup Wizard or Welcome / Settings / About Us screen(s)
3. All first-level screens
4. Three core business functions nominated by entrants



Mock-up mobile application hierarchy



Judging Criteria

Silver Award

No.	Criteria
1	Provide meaningful text alternative for non-text contents
2	Easy to turn off background sound or set as user-initiated only
3	Make all clickable objects large enough to be tapped #
4	Provide clear and simple headings
5	Provide consistent and simple user interface structure
6	Provide meaningful content sequence
7	Provide navigation for going backward #
8	Provide clear and informative links
9	Text resize function or text can be zoomed without loss of content
10	Compatible with screen readers

Applicable to Mobile Applications only



Judging Criteria

Gold Award

No.	Criteria
1	Provide sufficient colour contrast
2	Provide sufficient time for users to read the content and operate the function
3	Provide captions or sign language for 30% of pre-recorded videos published in the recent 2 years
4	Provide alternative means for notification #
5	Provide input assistance such as proper labels or instructions for user input
6	Provide error prevention for transactions
7	Provide means to close popovers
8	Provide contact points or “email feedback” feature

Applicable to Mobile Applications only





Thank you!

