

WCAG Compliance Improvements and Accessibility Best Practices

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INTERNAL



Understanding Users with **Visual Disabilities**

Who are our users?

👁 Globally, at least **2.2 billion people** have a near or distance vision impairment.

The World Health Organization (WHO) identifies **4% of the global population are visually impaired**, 4% as having low vision and 0.6% as being blind.

🧠 Vision loss can affect people of all ages; however, **most people with vision impairment and blindness are over 50 years — the average JHIRA user is 54 years.**

The disabled population overlaps with the aging, consequently overlapping with our users.

How do they use screen readers?

According to a WebAIM survey of 1,198 respondents, an average of

14% of users use a screen reader to navigate the web.

🔊 **71%** of screen reader users surveyed rely **exclusively on screen reader audio.**

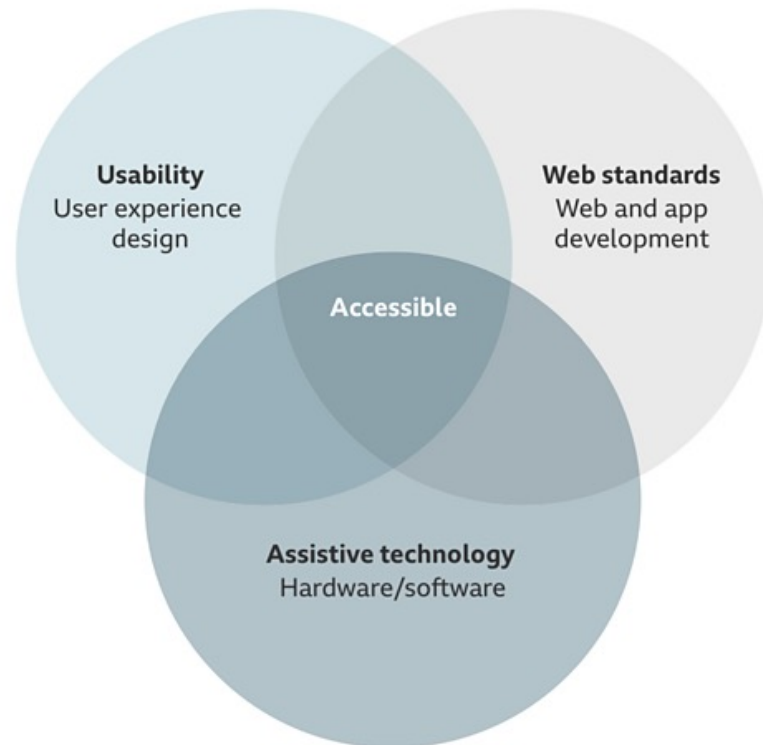
👁️ **88%** of screen reader users use it due to a disability, and 76% of those are **blind.**

Note: All my personal testing has only been done on Voiceover on the Chrome browser. We'll want to ensure that pages are accessible with popular screen readers like NVDA and [JAWS](#) and browsers like Firefox.

Accessibility Criteria:

Web Content Accessibility Guidelines (WCAG)

Establishes criteria for creating accessible digital content, ensuring usability and **equitable experiences** for people of all abilities.



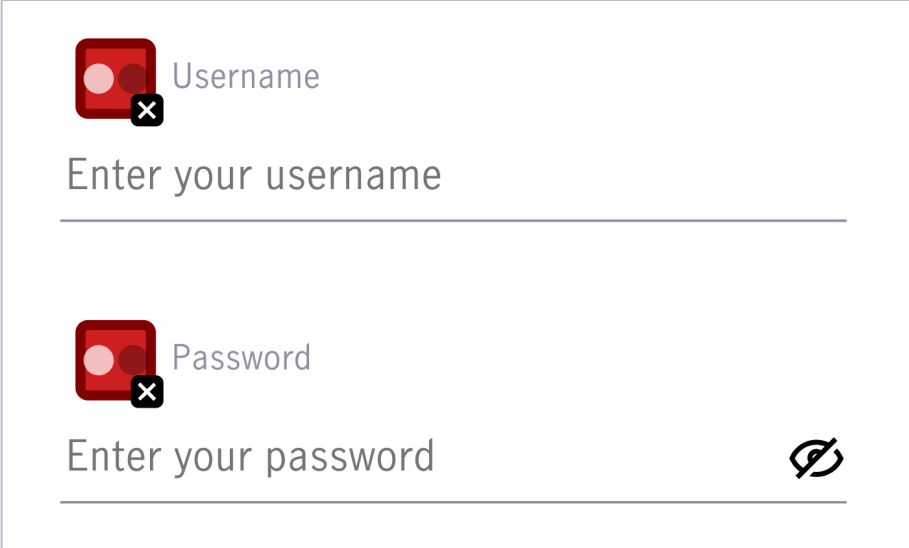
And of course, complying will help us avoid [lawsuits!](#)

Accessibility Audit: Quick Hits

Log In Page

Insufficient Contrast

- **Why it matters:** Adequate contrast of text is necessary for all users, especially users with low vision.
- **How to improve:** The visual presentation of text should have a **contrast ratio** of at least **4.5:1**. Enhanced: **7:1**
 - **Suggestion:** Use **Light 3 Navy** for “Username” and “Password” instead of Light 4 Navy. (3 is darker)
 - Try it yourself: [Contrast checker](#)



A screenshot of a login form with two input fields. The first field is labeled 'Username' and the second is labeled 'Password'. Both labels are in a light gray color, making them difficult to read against the white background. Each label has a red square icon with a white 'x' next to it, indicating a contrast issue. The input fields are simple lines with placeholder text 'Enter your username' and 'Enter your password'. A small icon of a crossed-out eye is visible at the end of the password field.

Insufficient Contrast — Redesign

Original

Username
Enter your username

Password
Enter your password

Light 4 Navy (#8E90A2)



Contrast Ratio
3.15:1

Normal Text

WCAG AA: **Fail**
WCAG AAA: **Fail**

Redesign

Username
Enter your username

Password
Enter your password

Light 3 Navy (#5E6073)



Contrast Ratio
13.95:1

Normal Text

WCAG AA: **Pass**
WCAG AAA: **Pass**

Color Accessibility Guide on Brand Hub


Colour accessibility

Colour accessibility is key in ensuring that digital content can be *perceived by all* audiences. It is achieved when sufficient contrast is applied between colours – making text or a graphic *distinguishable* from its background.


Different contrast ratios are required depending on usage (3:1 or 4.5:1).

These ratios are recommended by the internationally recognized Web Content Accessibility Guidelines (WCAG) version 2.1, when complying at level AA. This is also compliant with Accessibility for Ontarians with Disabilities Act (AODA), applicable in Ontario, Canada.

*Note that the colour Dark Grey in our Visual System is labelled Light 5 Navy in CDS; the two guides use different labels, but the colour values are exactly the same.

 Non compliant colours require a specific execution. For design support, please reach out to Brand@manulife.com.

 **Non compliant colours**

 **Compliant in RGB**
but not CMYK

Text

These rules apply to both colour text and White text over colour background.

- Large-text application: Text **equal to or larger** than 14 pt bold or 18 pt regular requires a **3:1 contrast ratio**.
- Small-text application: Text **less than** 14 pt bold or 18 pt regular requires a **4.5:1 contrast ratio**.

For more details, refer to [Typography: Usage rules](#) on page 27.

Icons

- Functional icons:** Icons that serve a specific and imperative purpose for the viewer require a **3:1 contrast ratio**.
- Icons that have no specific informative value are **exempt entirely** from colour contrast rules.

For more details, refer to [Icons: Usage rules](#) on page 44.

Charts and graphs

- Colours in charts and graphs need to meet a minimum of a **3:1 contrast ratio**.
- For more details, refer to [Colour Hierarchy for Charts](#) on page 48.

Contrast ratio	Dark 3 Green	Dark 2 Green	Dark 1 Green	Green	Light 1 Green	Light 2 Green	Light 3 Green	Light 4 Green	Dark 3 Blue	Dark 2 Blue	Dark 1 Blue	Blue	Light 1 Blue	Light 2 Blue	Light 3 Blue	Light 4 Blue	Dark 3 Coral	Dark 2 Coral	Dark 1 Coral	Coral	Light 1 Coral	Light 2 Coral	Light 3 Coral	Light 4 Coral	Dark Navy	Light 1 Dark Navy	Light 2 Dark Navy	Light 3 Dark Navy	Light 4 Dark Navy
3:1																													
4.5:1																													

Contrast ratio	Dark Grey*	Grey	Light Grey	Dark 3 Violet	Dark 2 Violet	Dark 1 Violet	Violet	Light 1 Violet	Light 2 Violet	Light 3 Violet	Light 4 Violet	Dark 3 Gold	Dark 2 Gold	Dark 1 Gold	Gold	Light 1 Gold	Light 2 Gold	Light 3 Gold	Light 4 Gold	Dark 3 Turquoise	Dark 2 Turquoise	Dark 1 Turquoise	Turquoise	Light 1 Turquoise	Light 2 Turquoise	Light 3 Turquoise	Light 4 Turquoise
3:1																											
4.5:1																											

Welcome Page

Logo has no Accessible Alt Text

- **Why it matters:** When navigating to a button, descriptive text must be presented to screen reader users to indicate the function of the button.
- **How to improve:** A link text should explain what information the screen reader users will get by clicking on that link.
 - Suggestion: aria-label="John Hancock company" [Source](#)
 - Problem recording:

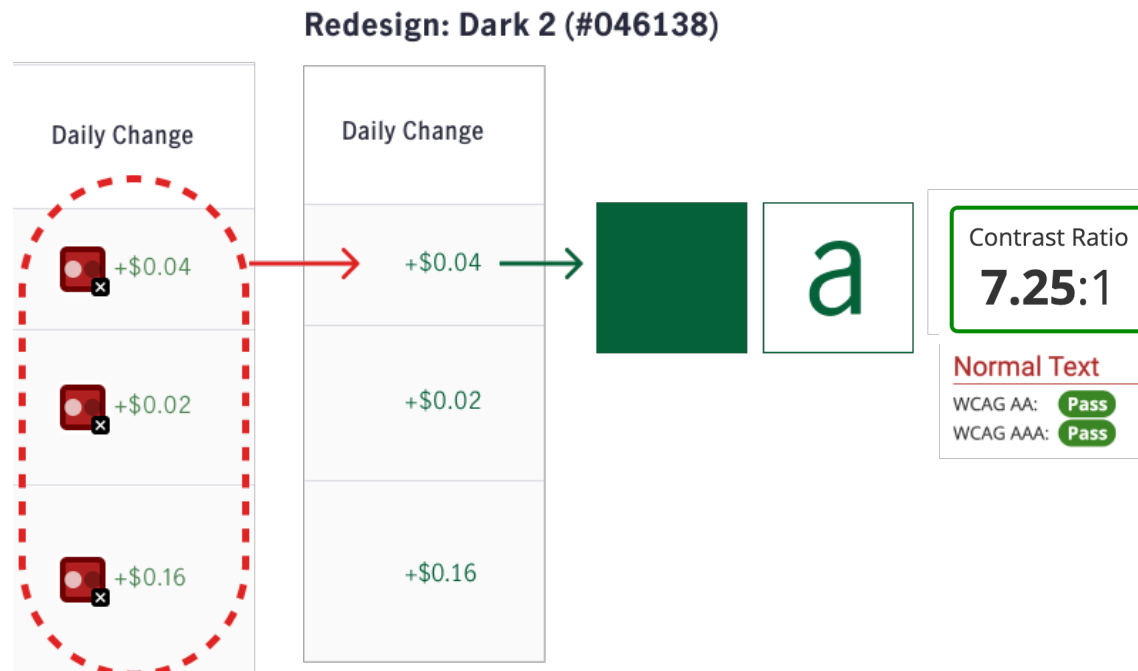


We invite you to join our feedback hub!

Please join us and share your honest opinions on our products and

Insufficient Contrast

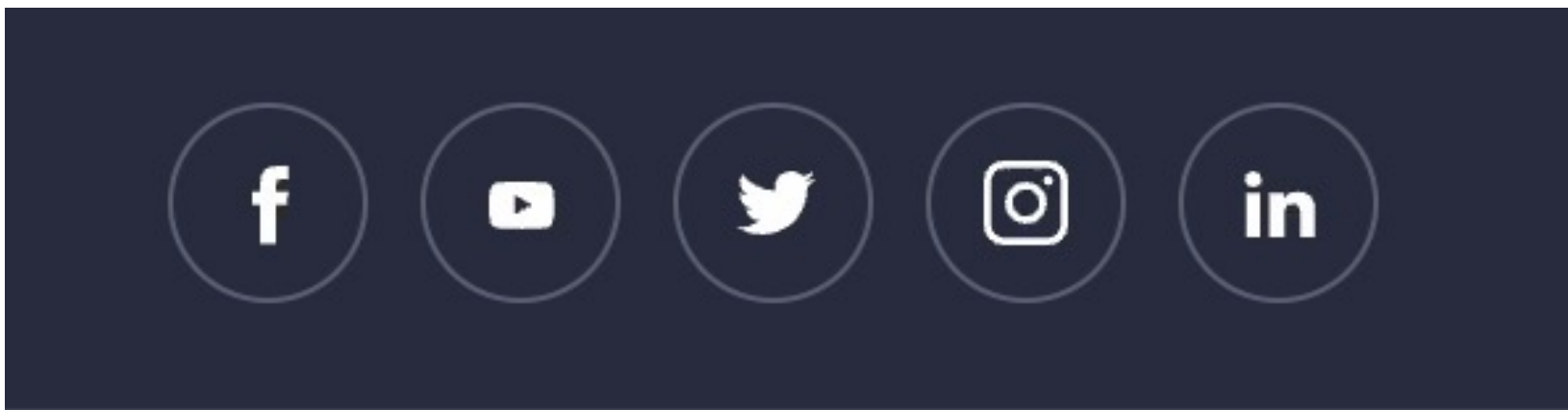
- **Why it matters:** Adequate contrast of text is necessary for all users, especially users with low vision.
- **How to improve:** A **contrast ratio** of at least **4.5:1**. Enhanced: **7:1**. Use **Dark 2** (#046138) for positive daily changes.



Social Media Icons have no Accessible Text

- **Why it matters:** Lack of descriptive text means screen reader users have no idea what these linked images and buttons lead to.
- **How to improve:** A link text that conveys the John Hancock social media page it is leading to (e.g. “John Hancock facebook”).

Problem recording:



Articles have Redundant Alternative Text


- **Why it matters:** The alternative text describing the article cover images are the same as the article titles, forcing screen reader users to **hear it twice**.

Problem recording:

view transaction history

Control-Option-Space.


Ideas + insights



Weekly market recap

Stay up to date with the latest market-moving news, investment returns, and economic data.


4 min read



How does inflation affect investments?

After decades of low and declining inflation, rising prices are once again having an effect on everything from household budgets to public policy. We look at the causes of inflation today and historically and how it affects investments.

6 min read



Retiring into a challenging economy

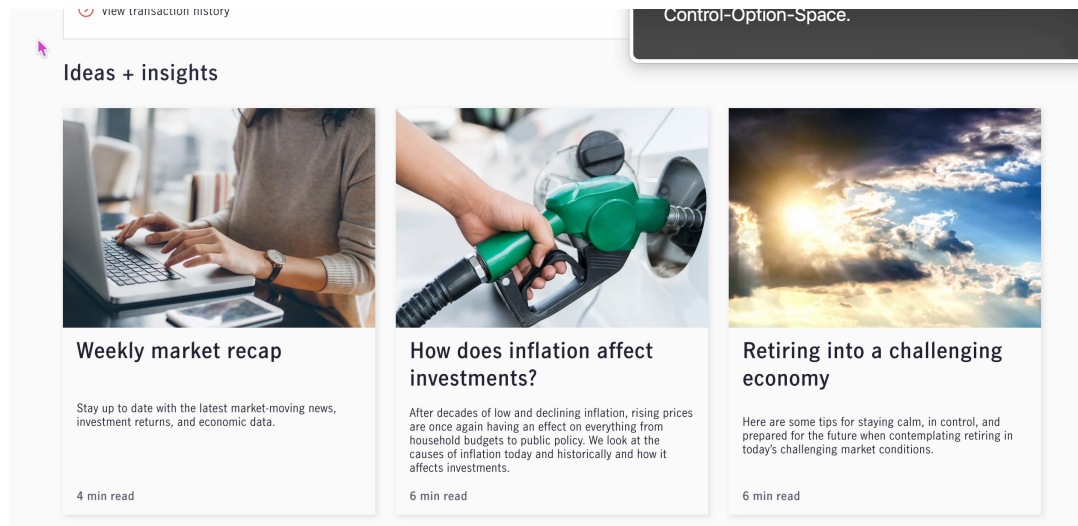
Here are some tips for staying calm, in control, and prepared for the future when contemplating retiring in today's challenging market conditions.

6 min read

Articles have Redundant Alternative Text

- **How to improve:** Contain both the image and the text caption within one link. The, give the image an alt="" to avoid redundancy. [Source](#)

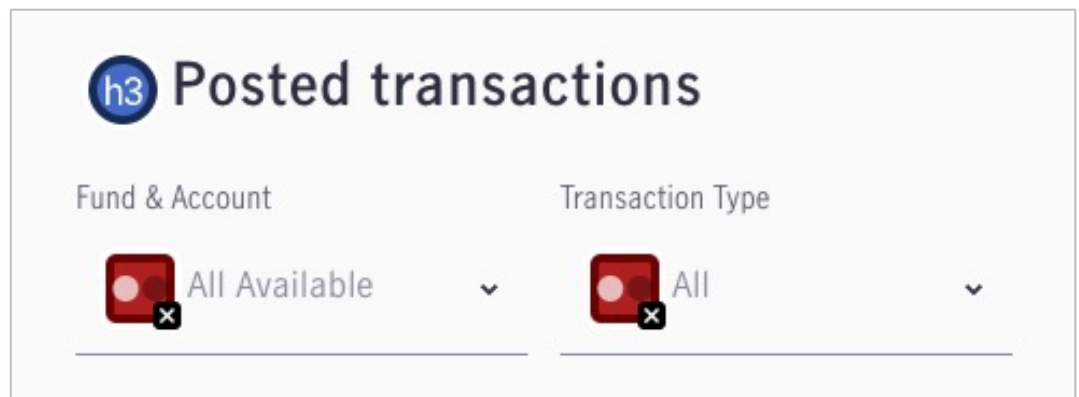
Suggestion: A screen reader can read, "Link, Weekly market recap". These linked images can only be given an empty alternative text if it is **wrapped with the text caption** in a link!



Transaction History

Insufficient Contrast

- **Why it matters:** Adequate contrast of text is necessary for all users, especially users with low vision.
- **How to improve:** The visual presentation of text should have a **contrast ratio** of at least **4.5:1**. Enhanced: **7:1**.
 - **Suggestion:** Use **Light 4 Navy** (#8E90A2) for “Username” and “Password” instead of Light 3 Navy (#5E6073).
 - Try it yourself: [Contrast checker](#)



Insufficient Contrast — Redesign

Original

Posted transactions

Fund & Account Transaction Type

All Available All

Light 4 Navy (#8E90A2)



Contrast Ratio
3.15:1

Normal Text

WCAG AA: **Fail**
WCAG AAA: **Fail**

Redesign

Posted transactions

Fund & Account Transaction Type

All Available All

Light 3 Navy (#5E6073)



Contrast Ratio
13.95:1

Normal Text

WCAG AA: **Pass**
WCAG AAA: **Pass**

Page Numbers and Arrows have no Accessible Text

- **Why it matters:** Arrow buttons are empty and have no value attribute, so screen reader users have no idea the purpose of these buttons.
- **How to improve:** A link text should explain what information the screen reader users will get by clicking on that link.
 - **Suggestion:** Tag these buttons as “Page 1” “Previous Page”, “Next Page”.
 - **Recording of Issue:**



Personal Profile

Fields have Redundant Text

- **Why it matters:** The text describing profile fields are redundant, forcing screen reader users to **hear it twice**.
 - **Suggestion:** Remove placeholders, or make screen reader say it once.
 - **Problem recording:**

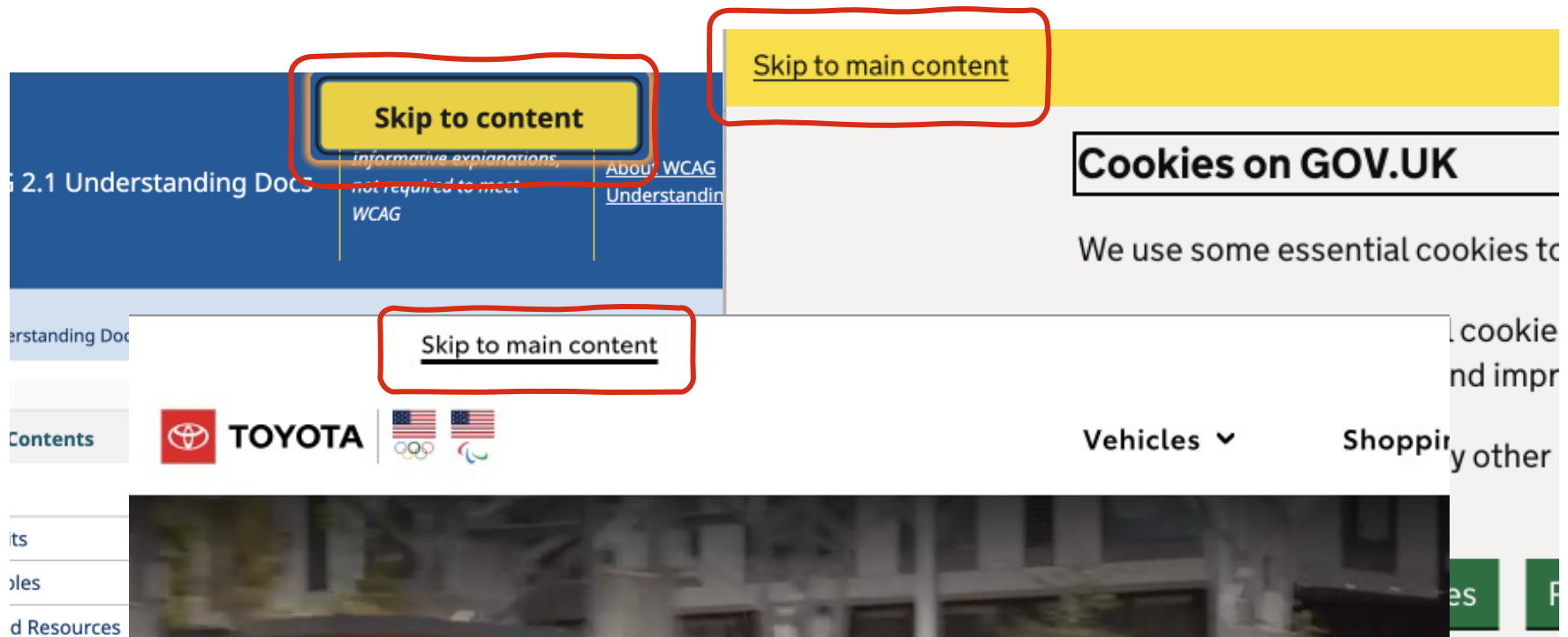
Email address	Phone number
<div>Confirm email address</div> <div>⚠ This field is required</div>	<div>Phone number</div> <div>⚠ This field is required</div>
Confirm email address	Secondary phone number
<div>Confirm email address</div>	<div>Secondary phone number</div>
<p>If you would like to update the phone number you use to receive your security code during sign-in, update your sign-in preferences here.</p>	
<div>Save</div>	<div>Cancel</div>

Optimizing Navigation for Screen Reader Users

Best Practice 1: **Accessibility Skip Links**

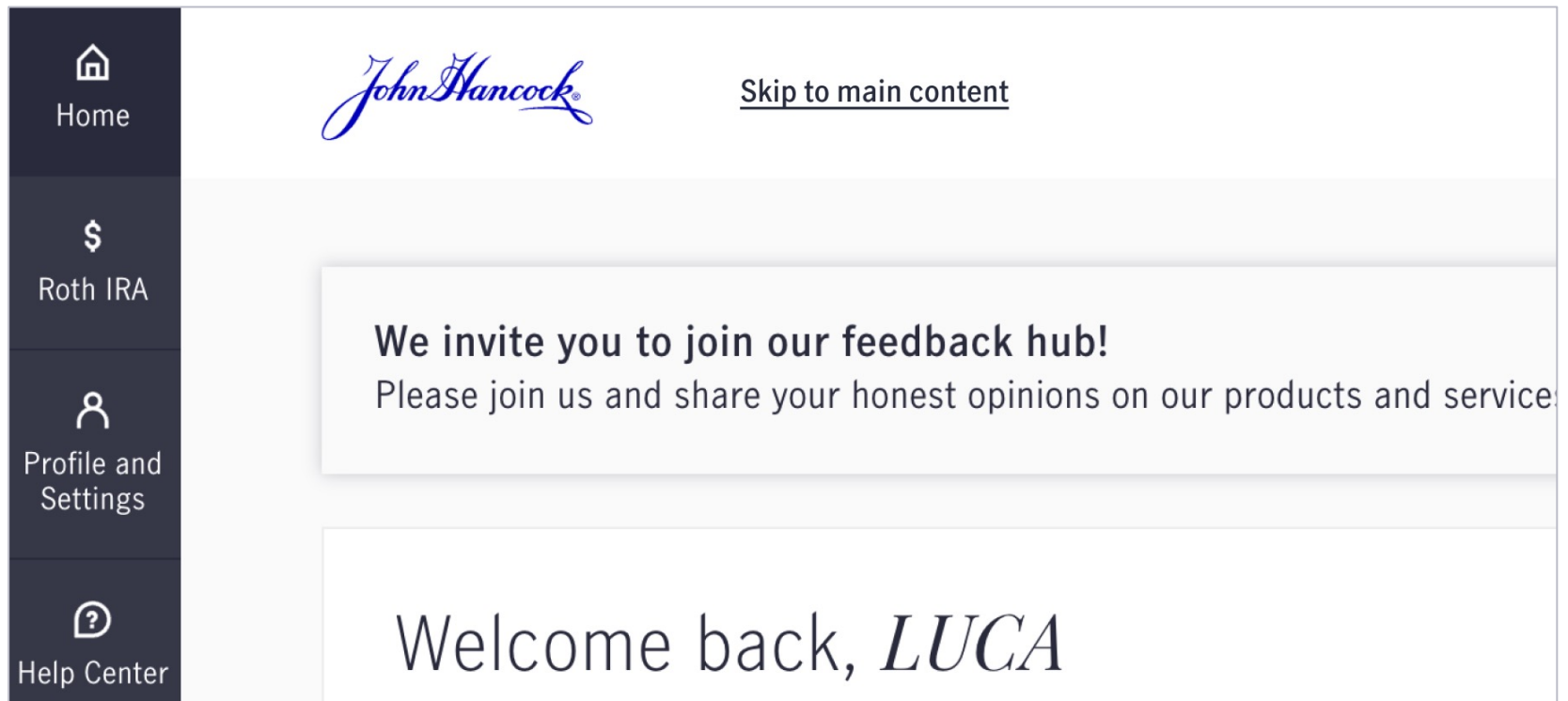
“Skip to Main Content” Link for Navigation

- **Why it matters:** Pages often contain repetitive navigation in their headers, which can be annoying to navigate with assistive technology.
- **How to improve:** Add a **skip link** to let users bypass this content.



“Skip to Main Content” Link for Navigation — Design

- **Suggestion:** On each page, place a “Skip to main content” link that will trigger when a user presses tab.



Try it Yourself!

1. Open the website webaim.org
2. Press the **tab** key
3. Press **enter** to follow the link.

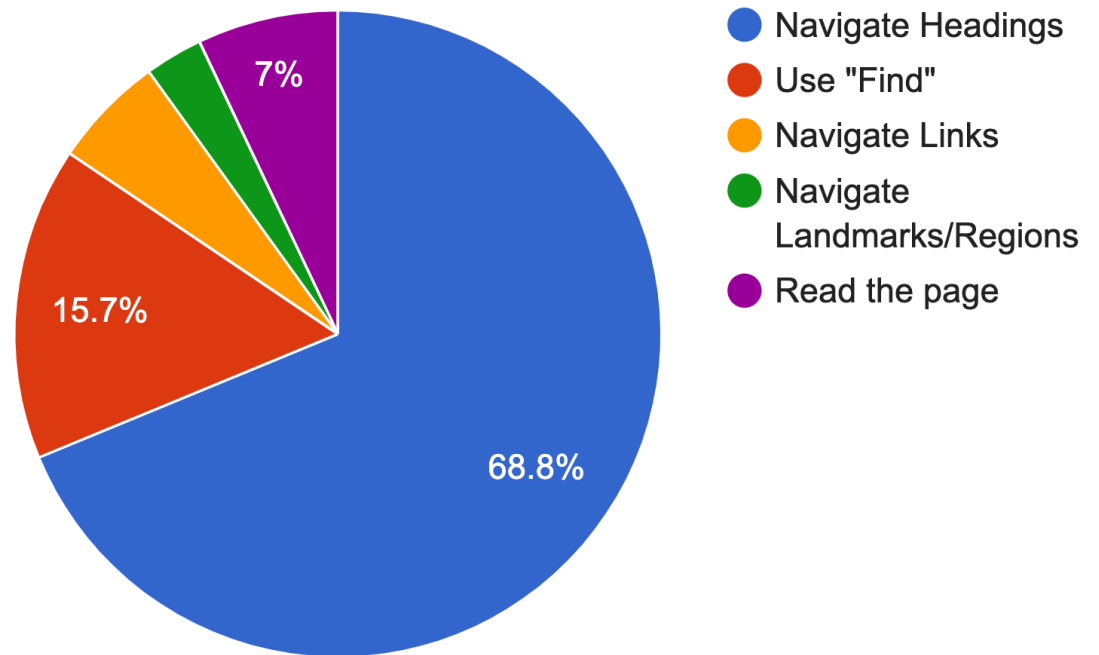


The screenshot shows the top of The New York Times website. At the top left, there are links for 'SECTIONS', 'SEARCH', and 'SKIP TO CONTENT'. The 'SKIP TO CONTENT' link is highlighted with a blue rectangular box. To the right of these links are buttons for 'SUBSCRIBE NOW', 'LOG IN', and a settings gear icon. Below the navigation bar, the main header features the newspaper's name 'The New York Times' in a large, black, serif font. Underneath the name, it displays the date 'Wednesday, September 14, 2016', a link to 'Today's Paper', a video icon, the current temperature '70°F', and the stock market index 'CAC 40 +0.06% ↑'. A horizontal menu below the header lists various sections: World, U.S., Politics, N.Y., Business, Opinion, Tech, Science, Health, Sports, Arts, Style, Food, Travel, Magazine, T Magazine, Real Estate, and ALL. The main content area is divided into three columns. The left column features a large headline 'Russian Pact Widens Rift Between Kerry and Pentagon' with a corresponding image of a ship. The middle column has an 'EDITORIAL' section titled 'Not Yet Talking About the Poor' with a sub-headline 'Neither Hillary Clinton nor Donald'. The right column is titled 'The Opinion Pages' and features a section 'Op-Docs: I'm Not From Here' by Maite Alberdi and Giedrė Žickytė, with a sub-headline 'An elderly woman' and a small portrait photo.

Best Practice 2: **Ordering Headings**

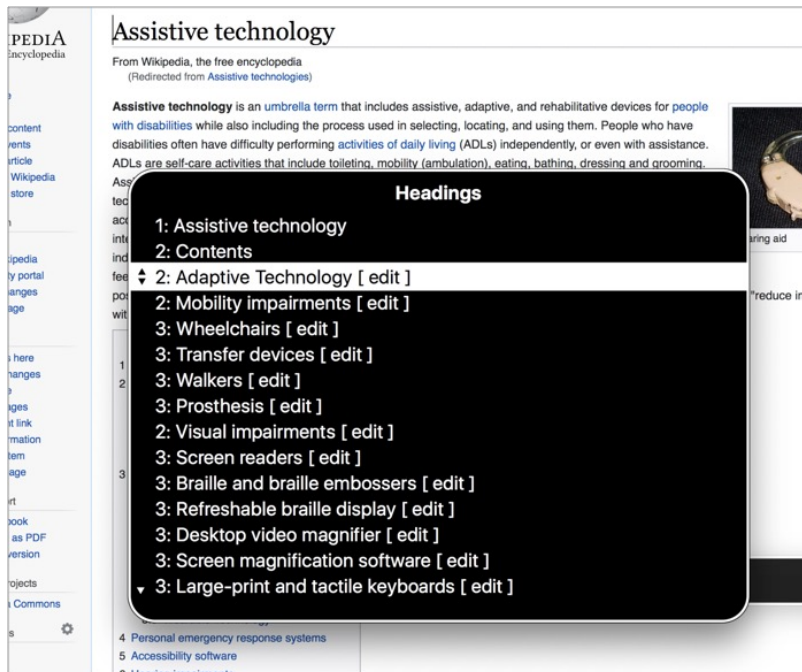
User Behavior

The majority of screen reader users say **skimming for headings** is the first thing they do when they open a Web page.



Ordering Headings for Navigation

- **Why it matters:** Screen reader users skip through headings to (1) form a mental picture of the structure of the page and (2) for quicker navigation.
- **How to improve:** Use headings **chronologically** (from the top down) to prevent user thinking if they missed an important, intermediate section.



Ordering Headings for Navigation (Transaction History Page)

- **Issue:** “Transaction history” is labeled as h2, and “Pending transactions” is labeled as h4. **Skipping h3 leaves screen reader users confused** if they are missing out on information.
 - **Suggestion:** Whichever header level we choose to label headlines with, ensure they are in **chronological order from the top down**.

John Hancock

Home

Profile and Settings

Help Center

Sign out

Transaction history

Pending transactions

Pending transactions may be cancelled up until the close of the NYSE (generally 4:00 PM ET) on the same business day. If your trade was placed after the close of the NYSE, you may cancel it before the close of the NYSE on the following business day. Trades in a processing status may no longer be cancelled. For more information about pending transactions, please contact a customer service representative at [800-225-5291](tel:800-225-5291).

Date	Fund	Transaction	Amount
There are currently no pending transactions in this account.			

Posted transactions

Download

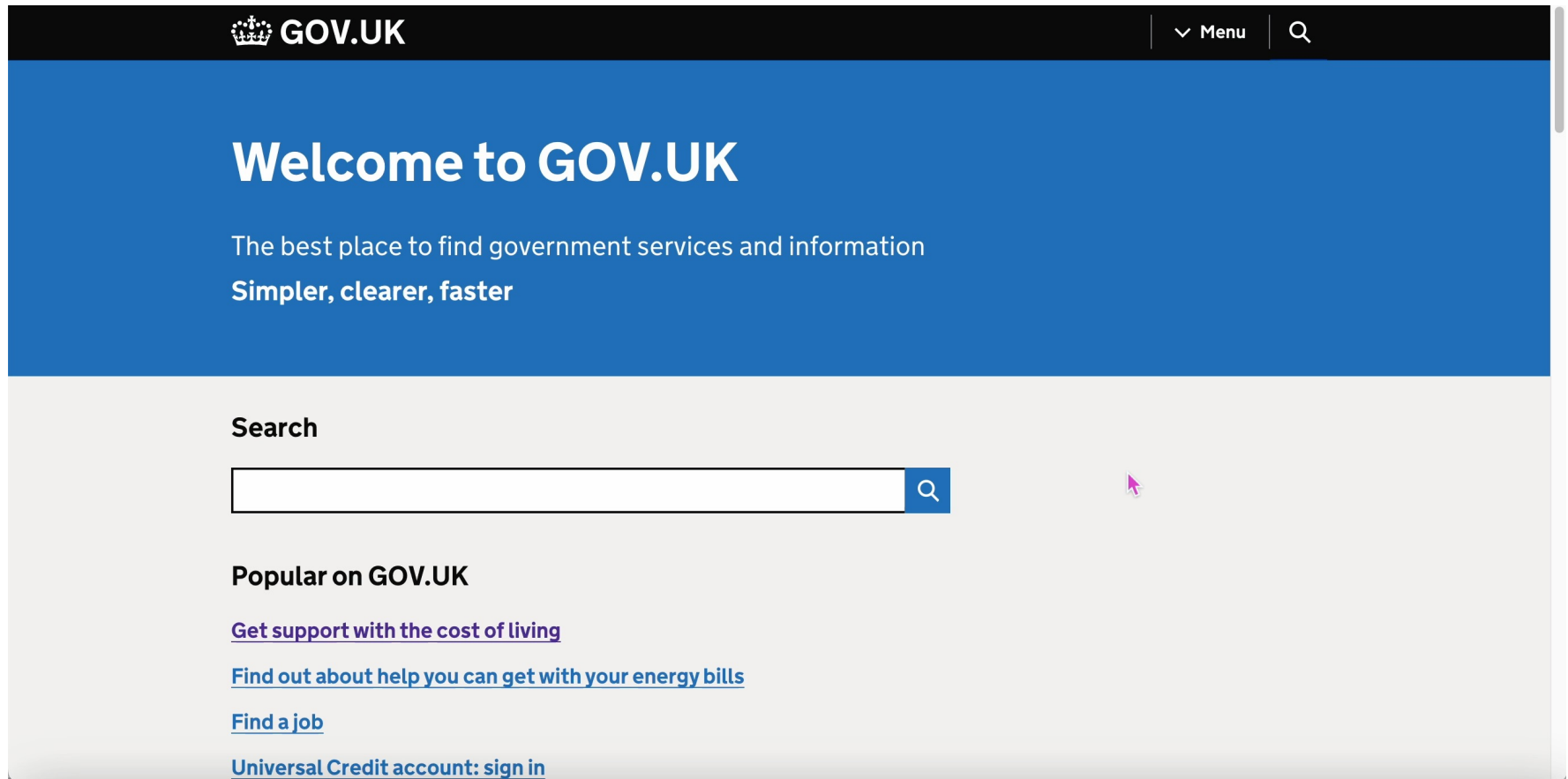
Fund & Account: All Available

Transaction Type: All

All Available 1 year 6 months 3 months

Date	Fund	Transaction	Shares	NAV	Amount
------	------	-------------	--------	-----	--------

Ordering Headings for Navigation (Example Recording)



The screenshot shows the GOV.UK homepage. At the top is a black navigation bar with the GOV.UK logo on the left, a 'Menu' dropdown on the right, and a search icon. Below this is a large blue banner with the text 'Welcome to GOV.UK' and 'The best place to find government services and information. Simpler, clearer, faster'. Under the banner is a search section with the label 'Search' and a search bar. Below the search bar is a section titled 'Popular on GOV.UK' with four links: 'Get support with the cost of living', 'Find out about help you can get with your energy bills', 'Find a job', and 'Universal Credit account: sign in'.

GOV.UK

Menu

Welcome to GOV.UK

The best place to find government services and information
Simpler, clearer, faster

Search

Popular on GOV.UK

[Get support with the cost of living](#)


[Find out about help you can get with your energy bills](#)


[Find a job](#)

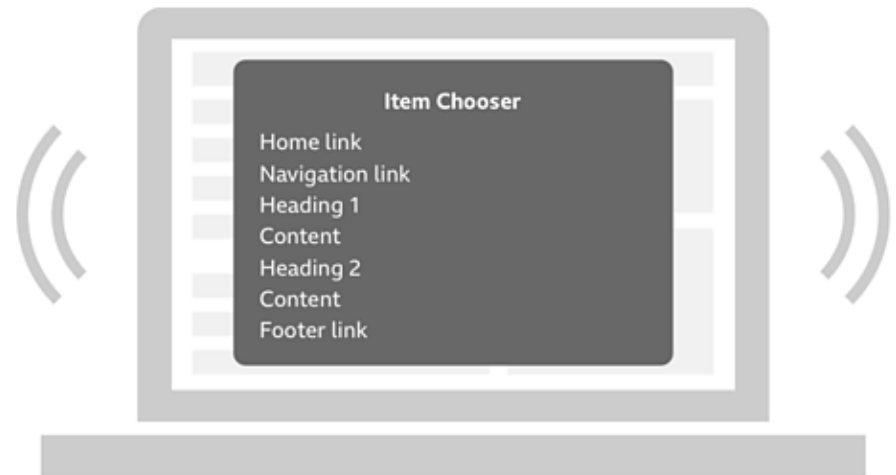
[Universal Credit account: sign in](#)

Best Practice 3: **Structuring Semantically**

Structuring Semantically

 **Sighted users** depend on **visual hierarchy** to understand the structure of a page.

 **Non-sighted users** depend on **semantic hierarchy** to form a **mental image** of the structure of the page.



Labeling Headings Semantically (Account Overview Page)

- **How to improve:** “Account overview” and “Roth IRA” refer to the same content, so they don’t need to be two separate and redundant headings to skip through. **Consider grouping them so the screen reader says “Account overview, Roth IRA”.**

The screenshot shows the John Hancock Account Overview page. A vertical sidebar on the left contains links: Home, Roth IRA, Profile and Settings, and Help Center. The main content area has a header with the John Hancock logo and a 'Sign out' button. Below the header, the page is divided into two main sections: 'Account value' and 'Positions'. The 'Account value' section shows the current value as of July 31, 2023, as \$99,965.25. The 'Positions' section is a table with columns: Fund Name, NAV, Daily Change, Shares, and Current Balance. It lists two funds: Equity Div 2 Test Fund A and Daily Div Test 2 Fund A. Annotations in the image highlight the heading structure: 'Account overview' is labeled as <h2>, 'Roth IRA' is labeled as <h5>, and both are highlighted with a pink box and a note: 'Should not be its own heading: semantically, this is an extension of “Account overview”'. The 'Account value' and 'Positions' headings are both labeled as <h3>.

Home

John Hancock

Sign out

Roth IRA

Profile and Settings

Help Center

Account overview <h2>

Roth IRA <h5> ← Should not be its own heading: semantically, this is an extension of “Account overview”

Account value <h3>

Positions <h3>

Current value
As of July 31, 2023

\$99,965.25

Fund Name	NAV ⓘ	Daily Change	Shares	Current Balance
Equity Div 2 Test Fund A JHTF 31 Acct #: 9007170 View Fund Info	\$62.48	+\$0.04	31.444	\$1,964.62
Daily Div Test 2 Fund A JALGX 635 Acct #: 9005480 View Fund Info	\$13.38	+\$0.02	2,240.521	\$29,978.17

Best Practice 4: **Discernible Links**

Pages have Indiscernible Links

- **Why it matters:** When users skip through links using their screen reader and it reads out gibberish, that prevents a them from understanding the link's purpose.

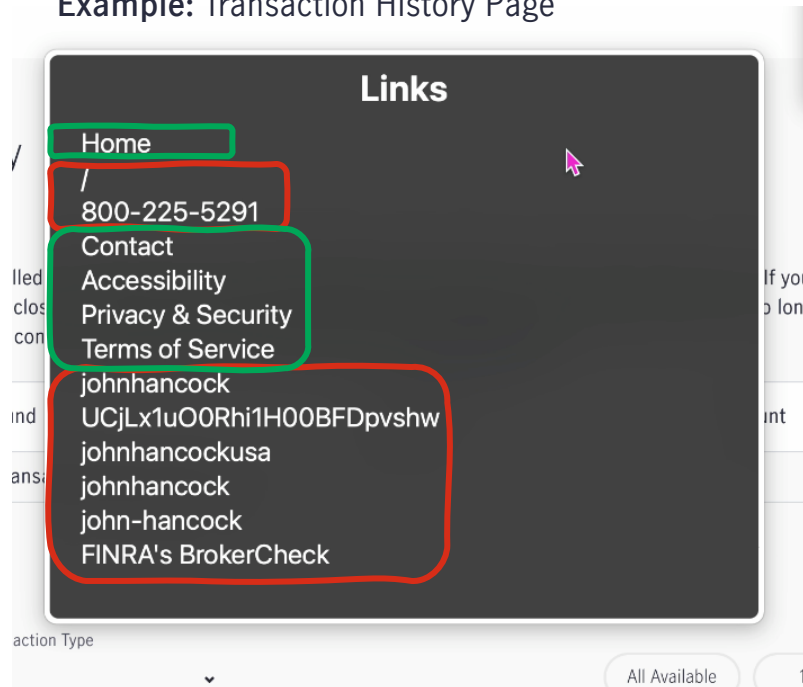
Problem recording:

The screenshot shows the John Hancock user interface. A dark sidebar on the left contains links for Home, Profile and Settings, and Help Center. The main content area is titled 'Transaction history' and includes a 'Sign out' button in the top right. A prominent error message box states: 'You are currently on a button. To click this button, press Control-Option-Space.' Below this, the 'Pending transactions' section contains a paragraph about cancellation policies and a table with columns: Date, Fund, Transaction, and Amount. The table body shows the message: 'There are currently no pending transactions in this account.' The 'Posted transactions' section features filters for 'Fund & Account' (set to 'All Available') and 'Transaction Type' (set to 'All'). It also includes time range filters: 'All Available', '1 year', '6 months' (selected), and '3 months'. A 'Download' link is present. At the bottom, a table header is visible with columns: Date, Fund, Transaction, Shares, NAV, and Amount.

Pages have Indiscernible Links

- **How to improve:** Each link should have a unique and descriptive name that allows assistive technology users to determine the destination, function, or purpose of links.
- **Suggestion:** The link title will often be the title of the page it leads to.

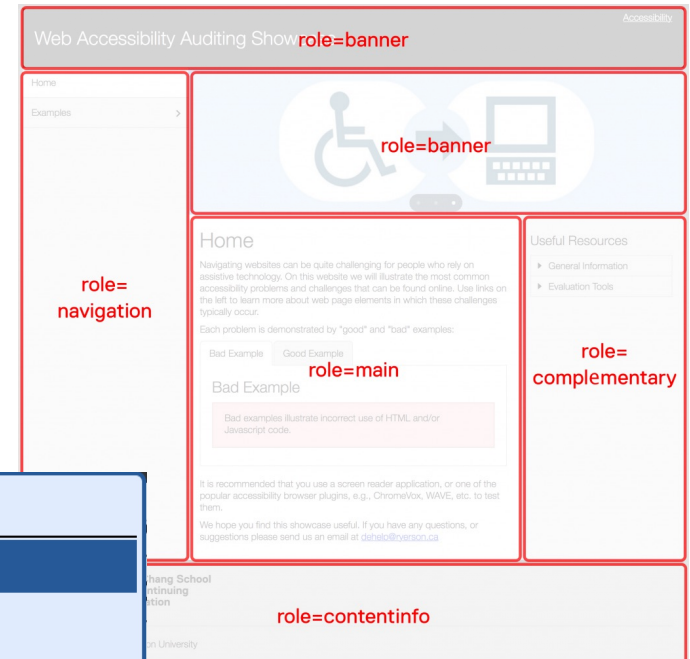
Example: Transaction History Page



Best Practice 5: **Landmarking**

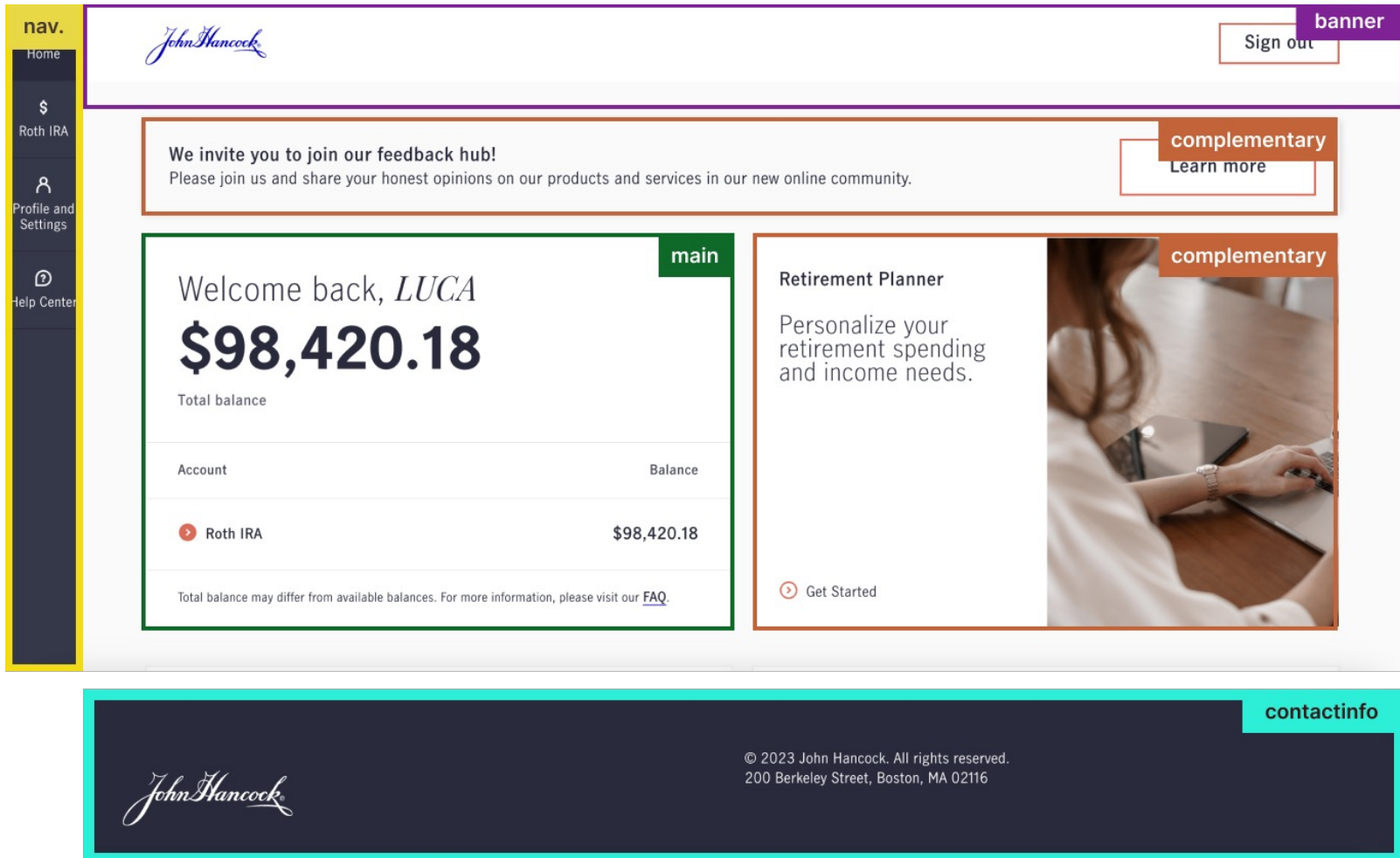
Using Landmarks for Navigation

- **Why it matters:** Landmarks make content easy to skip through by screen readers and keyboard users, and helps user understand programmatic structure of a page.
- **How to improve:** Mark sections with landmarks roles such as banner, navigation, main, region, and complementary.
 - [Landmarks Example](#)



Landmark Regions	
<u>M</u> ain	
<u>N</u> avigation	
<u>C</u> omplementary: Landmarks	
<u>C</u> omplementary: Related Docum...	
Headings	
<u>1</u>) <u>G</u> eneral Principles	

Suggested Landmarks for Welcome Page



Suggested Landmarks for Account Overview Page

nav.

\$
Roth IRA

Profile and Settings

Help Center

Sign

banner

Account overview

Roth IRA

main

Account value

region

Current value
As of July 31, 2023

\$99,965.25

Positions

region

Fund Name	NAV ⓘ	Daily Change	Shares	Current Balance
Equity Div 2 Test Fund A JHTF 31 Acct #: 9007170 View Fund Info	\$62.48	+\$0.04	31.444	\$1,964.62
Daily Div Test 2 Fund A JALGX 635 Acct #: 9005480 View Fund Info	\$13.38	+\$0.02	2,240.521	\$29,978.17
Multimanager 2055 Lifetime Portfolio A TESTE 1029 Acct #: 9007206 View Fund Info	\$35.84	+\$0.16	415.307	\$14,884.60
Money Market A TSMXX 1044 Acct #: 9005479 View Fund Info	\$1.00	\$0.00	50,512.84	\$50,512.84
Daily Div Test Fund A LUXRX 1057 Acct #: 9007207 View Fund Info	\$5.80	+\$0.01	452.59	\$2,625.02

Screen Reader Demo of Landmarks for FAQs Page

The screenshot shows the John Hancock website's FAQs page. On the left is a dark sidebar with navigation links: Home, Profile and Settings, and Help Center. The main content area features the John Hancock logo, the title 'FAQs', and a 'Jump to a section' heading. Below this is a grid of six links: 'Understanding my IRA', 'Adding money to my IRA', 'Traditional IRA deductibility', 'Taking money from my IRA', 'Managing my account', and 'Contact information'. The 'Understanding my IRA' section is expanded, showing three questions with red dropdown arrows: 'What's an IRA?', 'What types of IRAs are there?', and 'What are required minimum distributions?'. A Chrome extension notification is visible in the top right corner.

Home

Profile and Settings

Help Center

John Hancock

FAQs

Jump to a section

[Understanding my IRA](#)

[Adding money to my IRA](#)

[Traditional IRA deductibility](#)

[Taking money from my IRA](#)

[Managing my account](#)

[Contact information](#)

Understanding my IRA

- ▼ What's an IRA?
- ▼ What types of IRAs are there?
- ▼ What are required minimum distributions?

× Chrome, John Hancock - Google Chrome
Voting: A Simple Decision-Making and
Technique in UX, tab, group

Holistic Screen Reader Demo Using Mac's VoiceOver

Home

Profile and Settings

Help Center

John Hancock

FAQs

Jump to a section

[Understanding my IRA](#)

[Adding money to my IRA](#)

[Traditional IRA deductibility](#)

[Taking money from my IRA](#)

[Managing my account](#)

[Contact information](#)

Understanding my IRA

- ▼ What's an IRA?
- ▼ What types of IRAs are there?
- ▼ What are required minimum distributions?

× Chrome, John Hancock - Google Chrome
Voting: A Simple Decision-Making and
Technique in UX, tab, group



Note: All my personal testing has only been done on Voiceover on the Chrome browser. We'll want to ensure that pages are accessible with popular screen readers like NVDA and [JAWS](#) and browsers like Firefox.

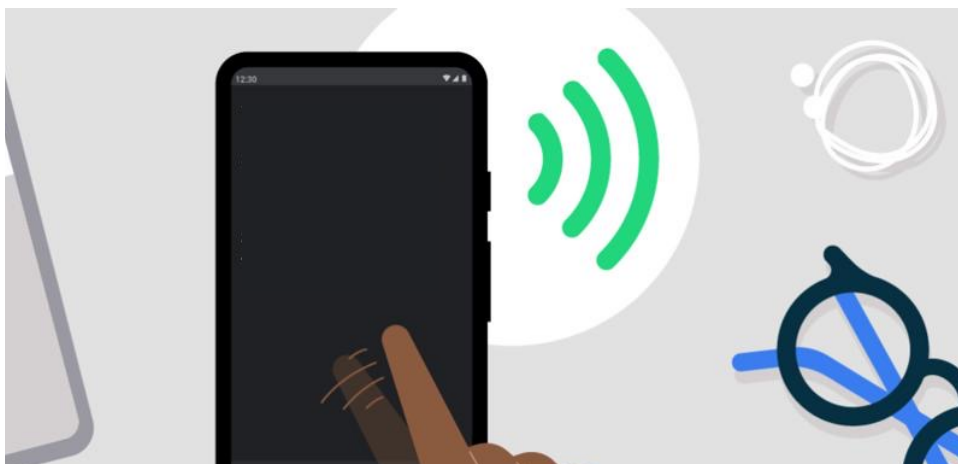
Don't forget Mobile!

According to WebAIM's 2022
survey to screen reader users,

90%

of respondents said that they've used

**screen readers with
smartphones and tablets.**



Accessibility Resources

1. [How to Meet WCAG \(Quick Reference\)](#)
2. [Brand Hub Color Accessibility](#)
3. [Skip Links](#)
4. [Robles v. Domino's Pizza, LLC](#)

Try it yourself! **Automated Accessibility Tools***

1. [Accessibility Insights](#) (Browser Extension)
2. [WAVE Web Accessibility Evaluation Tools](#) (Browser Extension)
3. [Contrast checker](#)

Outsourced Accessibility Panel

1. [Userway's Accessibility Widgets](#)

*Note: These are merely a quick, high-level starting point and should not be a replacement for a comprehensive audit. A mix of automated tools and human testing should be conducted.

Thank you!