Accessibility
Made Easy

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UI5con ON AIR

Agenda

Accessibility @SAP

Accessibility features in UI5

Accessibility guidelines for application developers
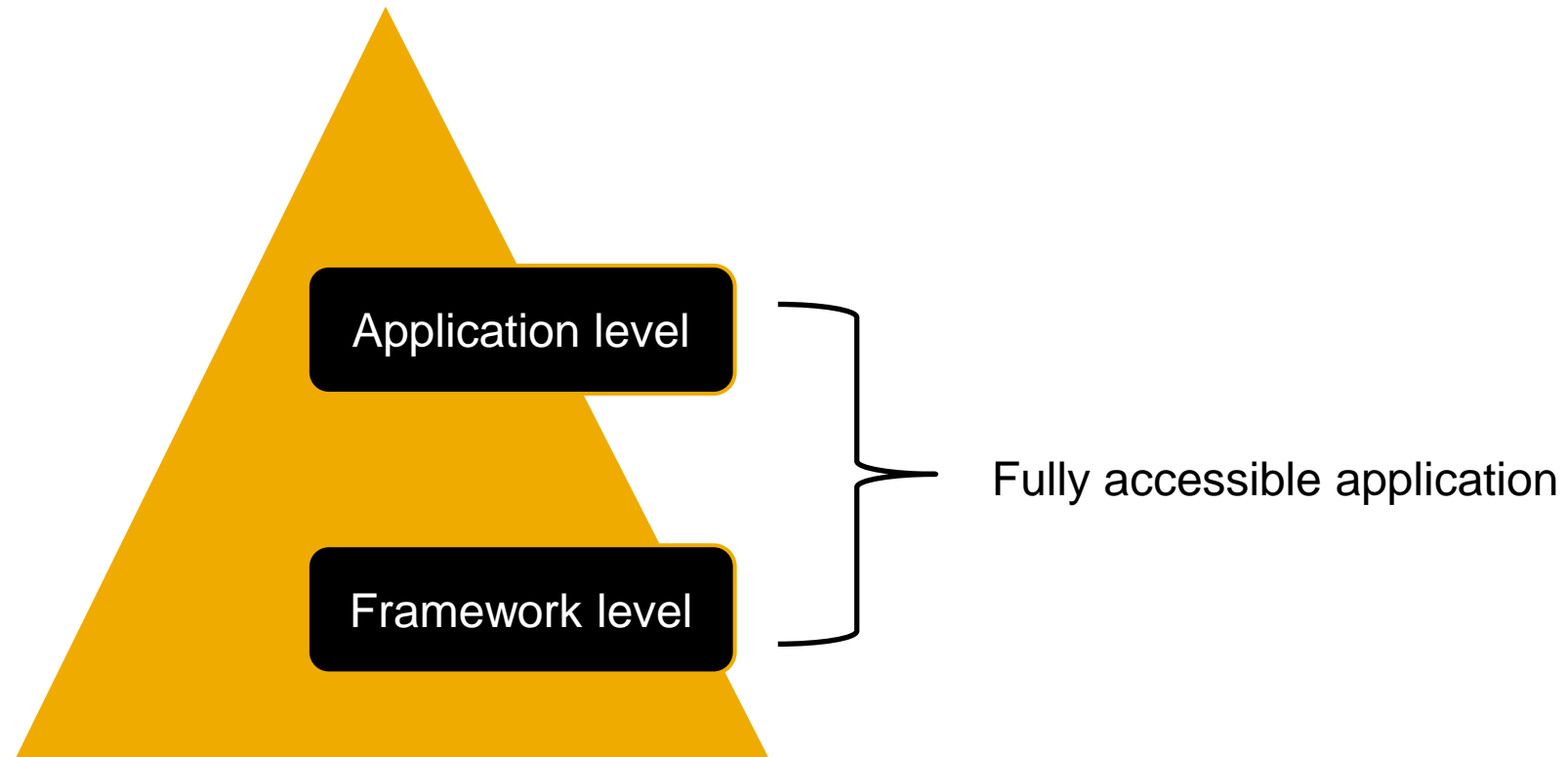
Takeaways

Accessibility @SAP

"**Accessibility refers to the** **design** **of products, devices, services, or environments** **for all people,** **including and especially for those** **who experience disabilities**"

All users can operate software:

- Without loss of **meaningful content**

- Without loss of **fucntionality**

- Without loss off **efficiency**

- By using **assistive technologies**

Accessiblity in UI5

Accessibility **features** in UI5

Built in features

Visualization
- Minimum contrast
- Focus visualization design
- Layout adaptation for different devices
- Support for browser zoom

Keyboard
- Navigation and control interaction
- Tab order of controls

Messaging
- MessagingpPatterns (busy, errors, notifications)

Minimum contast

SAP Fiori default theme (SAP Quartz Light) fulfills the requirements for minimum color contrast of Web Content Accessibility Guidelines WCAG 2.1

UI5 provided themes:

- **Quartz Light**

- **Hight Contrast Black**
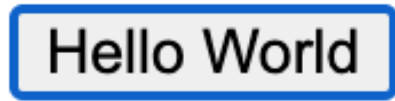
- **Hight Contrast White**

- **Quartz Dark**

✕ **Don't do this**

CONTRAST RATIO

✓ **Do this**

CONTRAST RATIO

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UI5 themes

Native HTML   High Contrast Black   High Contrast White
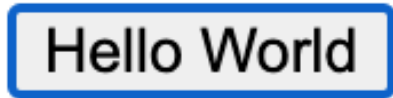
Focus visualization design

Focus visualization is very important for user efficiency.

The focus must be realized in a way, that it is immediately perceivable by an end-user.
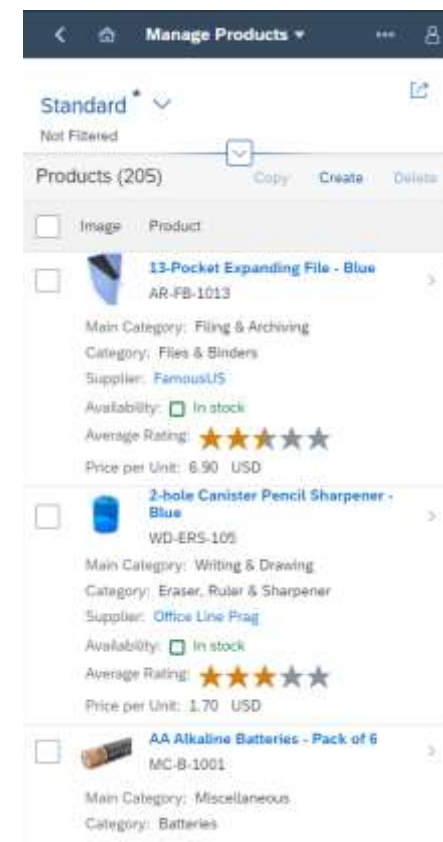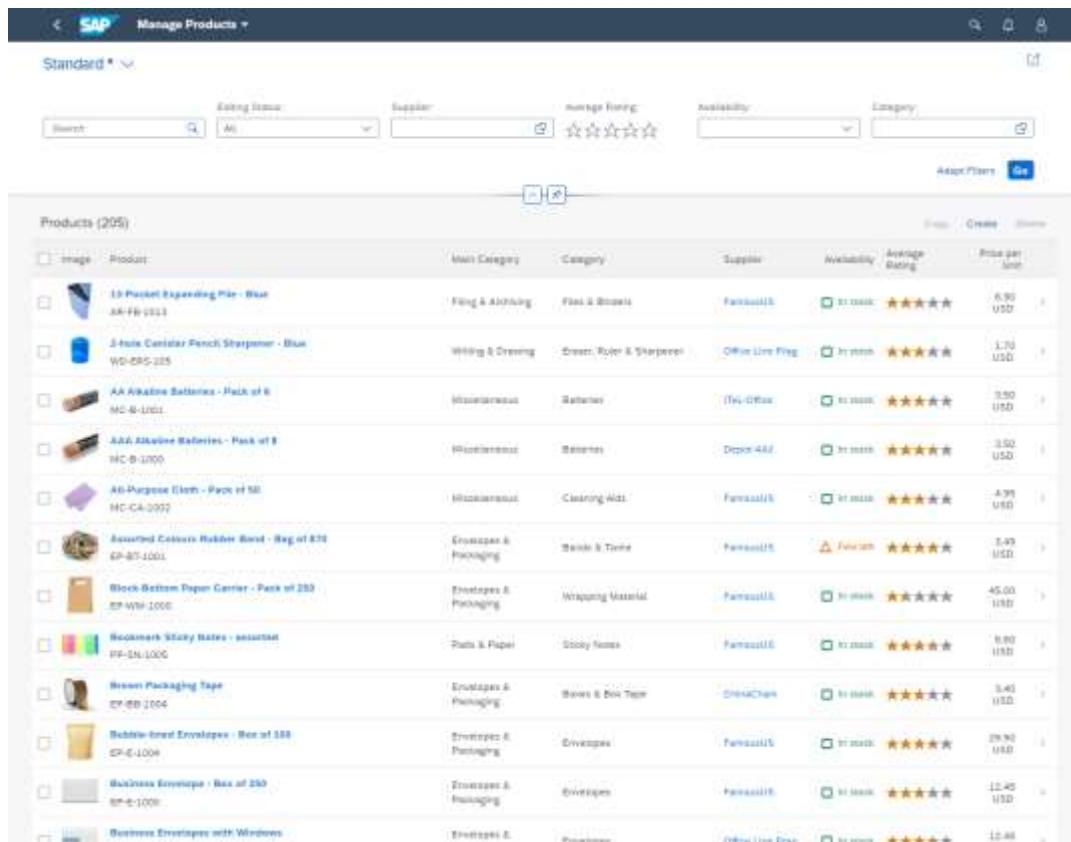

Native HTML

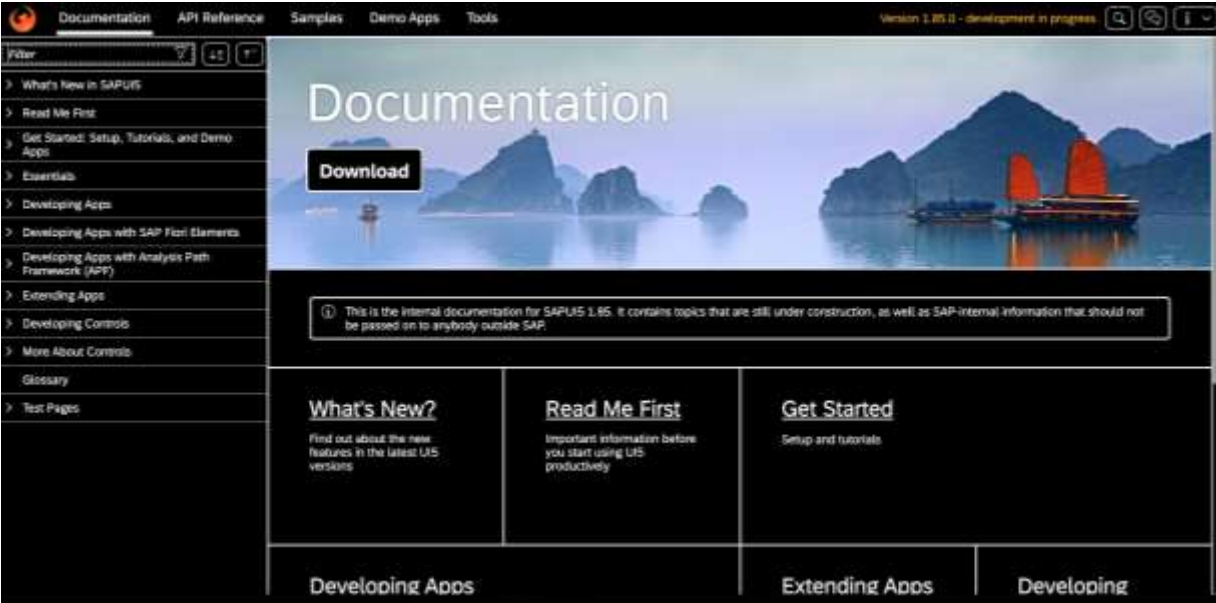High Contrast Black

High Contrast White

Layout adaptation for different devices

The user interface has to adapt to the display orientation, such as portrait or landscape, without restriction of content or function, if specific orientation is not essential.

Support for browser zoom

Users can adjust the font size themselves using the browser zoom. The responsive layout adapts to these manual adjustments automatically.

100 % Zoom

200 % Zoom

Navigation and control interaction

The UI elements in UI5 provide keyboard handling in order to improve accessibility and speed up work.

Example

F4 / Alt + Down / Alt + Up	Opens / closes a drop-down menu	You can open the options and elements available in a drop-down menu, if the UI element in question provides this type of information.

Tab order of controls

Logically related UI elements have to receive keyboard and reading focus in an order that preserves semantics and usability.

Tabbing follows the reading order, in western cultures from left to right and top to bottom

Messaging patterns

In SAP Fiori, a message system is implemented. It ensures that system messages appear at predefined locations with a consistent design.

The application has to allow the user to review, correct, or cancel input.

In case of input errors, the location of the error has to be indicated, a description of the error has to be provided and suggestions for correcting the error have to be provided.

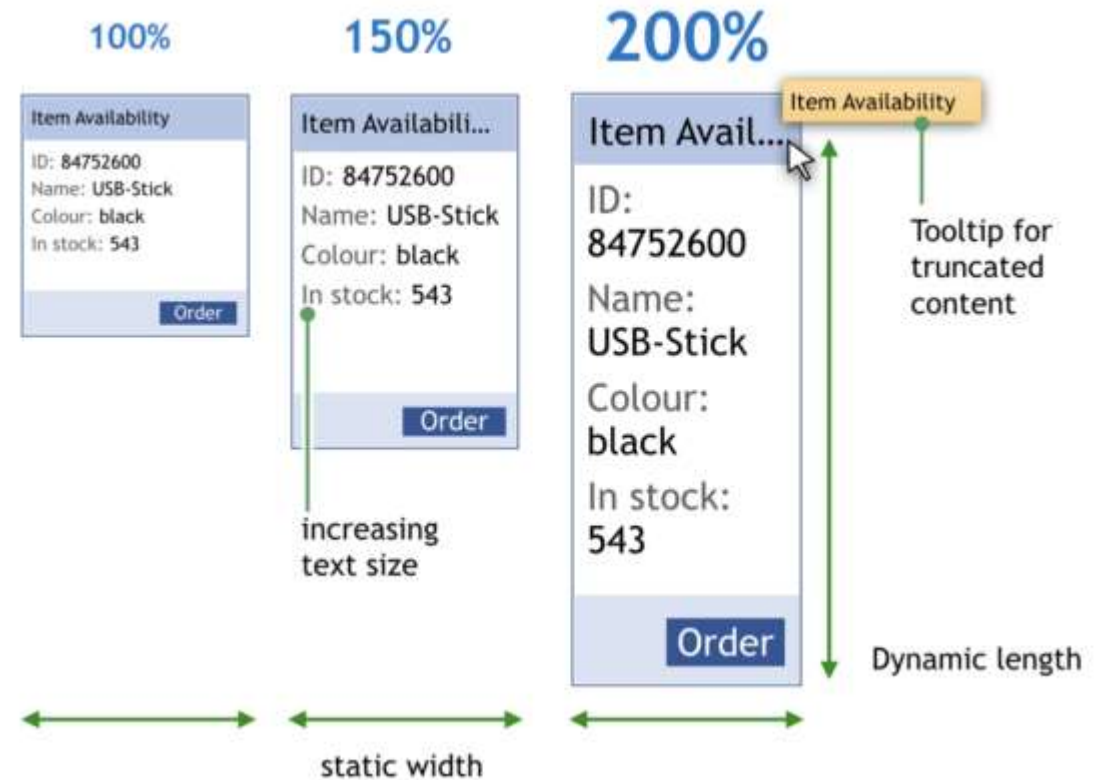# Accessibility guidelines for application developers

General rules and guidelines

- Don't interfere with existing accessibility features.

- Avoid changing the HTML.

- Check the focus persistence.

- Initial focus position.

- Provide meaningful tooltips for icons, icon buttons and where otherwise appropriate.

- Use accessible landmarks in order to identify sections of a page. This helps assistive technology users orient themselves to a page and navigate easily to various sections of a page. Landmark API's are available for Page, Dynamic Page and Object Page controls.

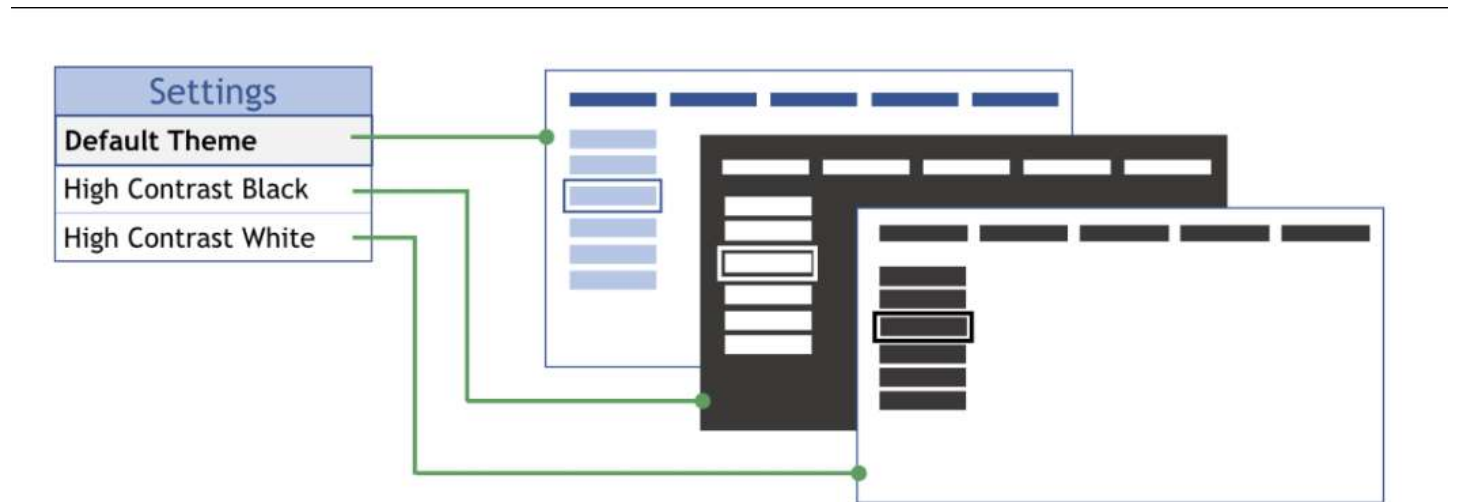UI5con ON AIR

Text sizes and fonts

As an application developer, you should always consider the fact that the application could be zoomed to 200%, and everything should still be visible.

Colors and theming

The different colors shown on the UI need to have a good contrast to each other, in order to be easily distinguishable.

- Provide the user with an option to switch themes.

- Avoid writing custom CSS.

- Check color contrast for new themes.

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Keyboard handling

Keyboard handling enables users to access every UI element of the application with the keyboard and is therefore tightly connected to accessibility.

General recommendations

- **Accessibility of UI elements**
  Make sure that all available features of the application can be accessed by using only the keyboard.

- **Tab order and reading order**
  Always have in mind the fact that the page should have a logical reading and tab order.
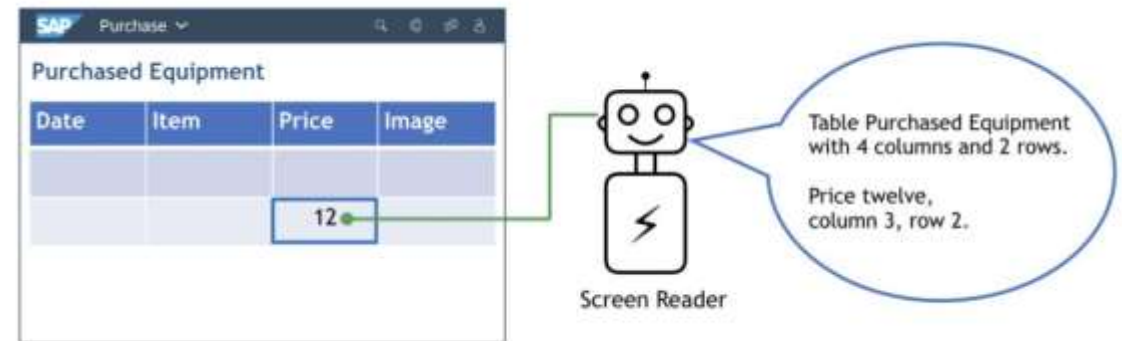

Focus navigation from banner to groups and back to banner

Screen reader support

UI5 application developers need to be aware of how the screen reader reads out the contents of the UI. Labels, headings, and descriptions help you describe the contents and visual elements of an application.
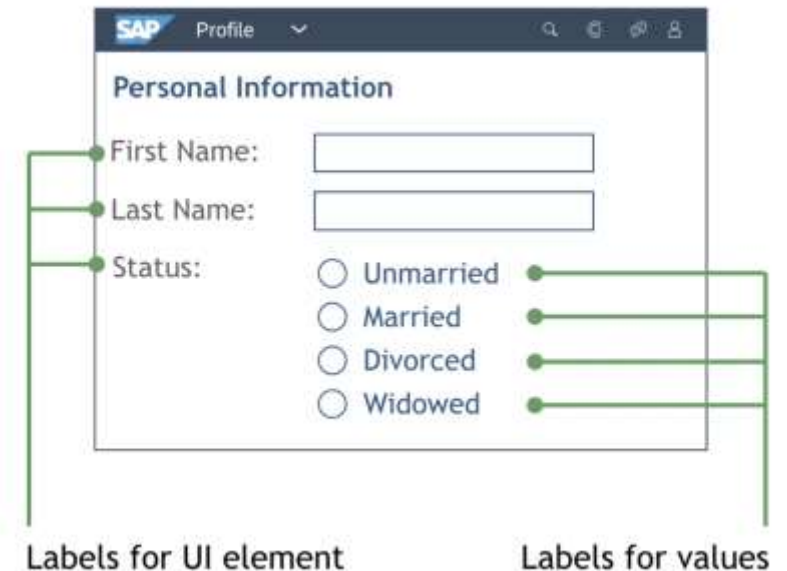
General Recommendations
- Generate valid HTML
- Provide meaningful labels
- Use Titles in headings
- Provide titles for complex components
- Use accessibility related APIs in the controls
- Provide additional information when there are changes in the screen

Labeling and tooltips

- Label all elements and element containers correctly and completely.
- Provide text alternatives for visual elements
    - Use tooltips only in rare cases. They should not be used as a replacement for a label.
    - Use the alt attribute for images.
- Describe controls and give additional information as part of the UI.
- Identify regions correctly according to their purpose.
- Provide accessible alternatives and describe how to use them (for example in the documentation of the application).

Labels for UI element   Labels for values

Takeaways

Takeaways

- Think about accessibility throughout the whole development process.

- UI5 has great built-in Accesibility features, but following the general rules and guidelines is essential for building a fully accessible application for your specific product context.

- Avoid adding custom CSS and changes in the HTML structure of UI5 controls – this may affect features like theming, keyboard handling and screen reader support.

- Keyboard navigation comes out of the box and every element can be reachable via keyboard, when using the correct layout containers.

- Before developing an application always read the documentation first.

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Thank you!

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