

SAPUI5 Accessibility in Action

Building inclusive Fiori Apps



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Agenda



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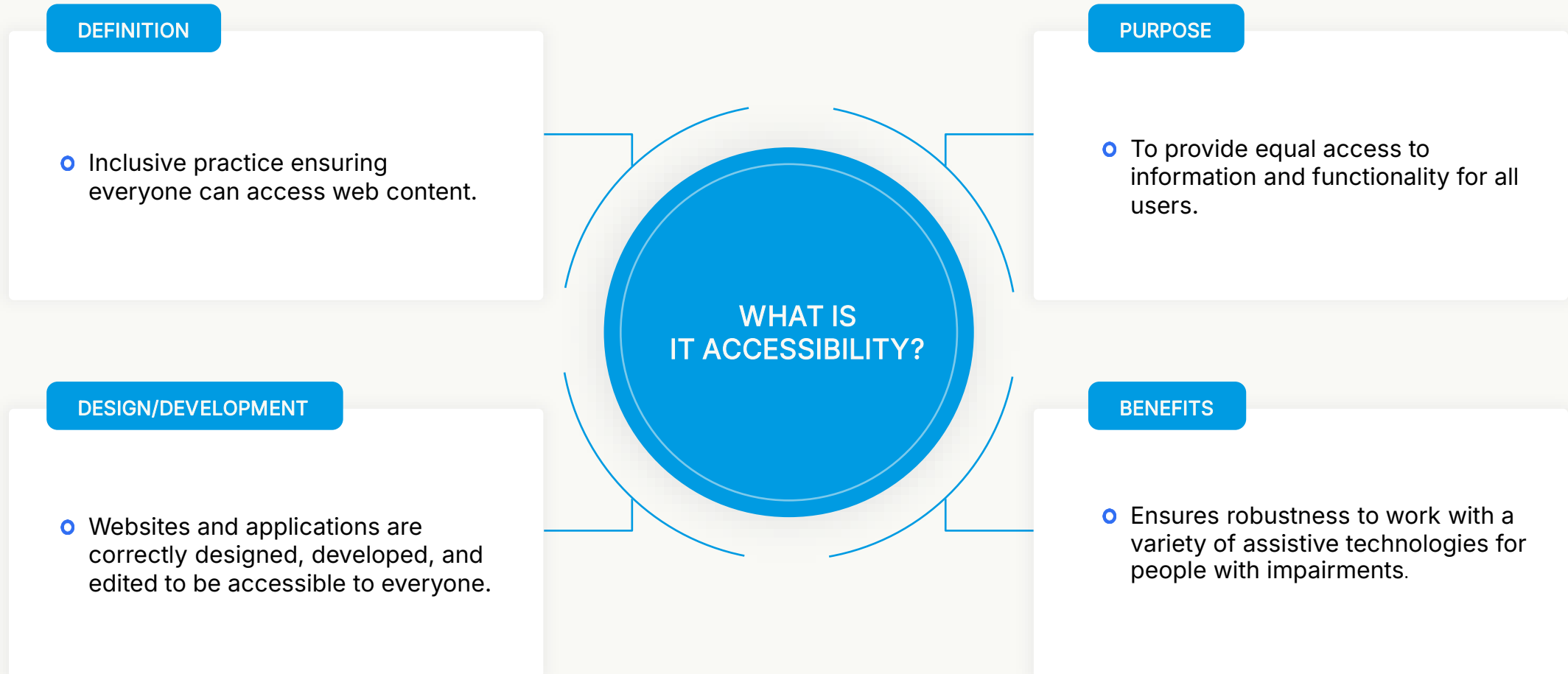
Hands-on: Let's code !



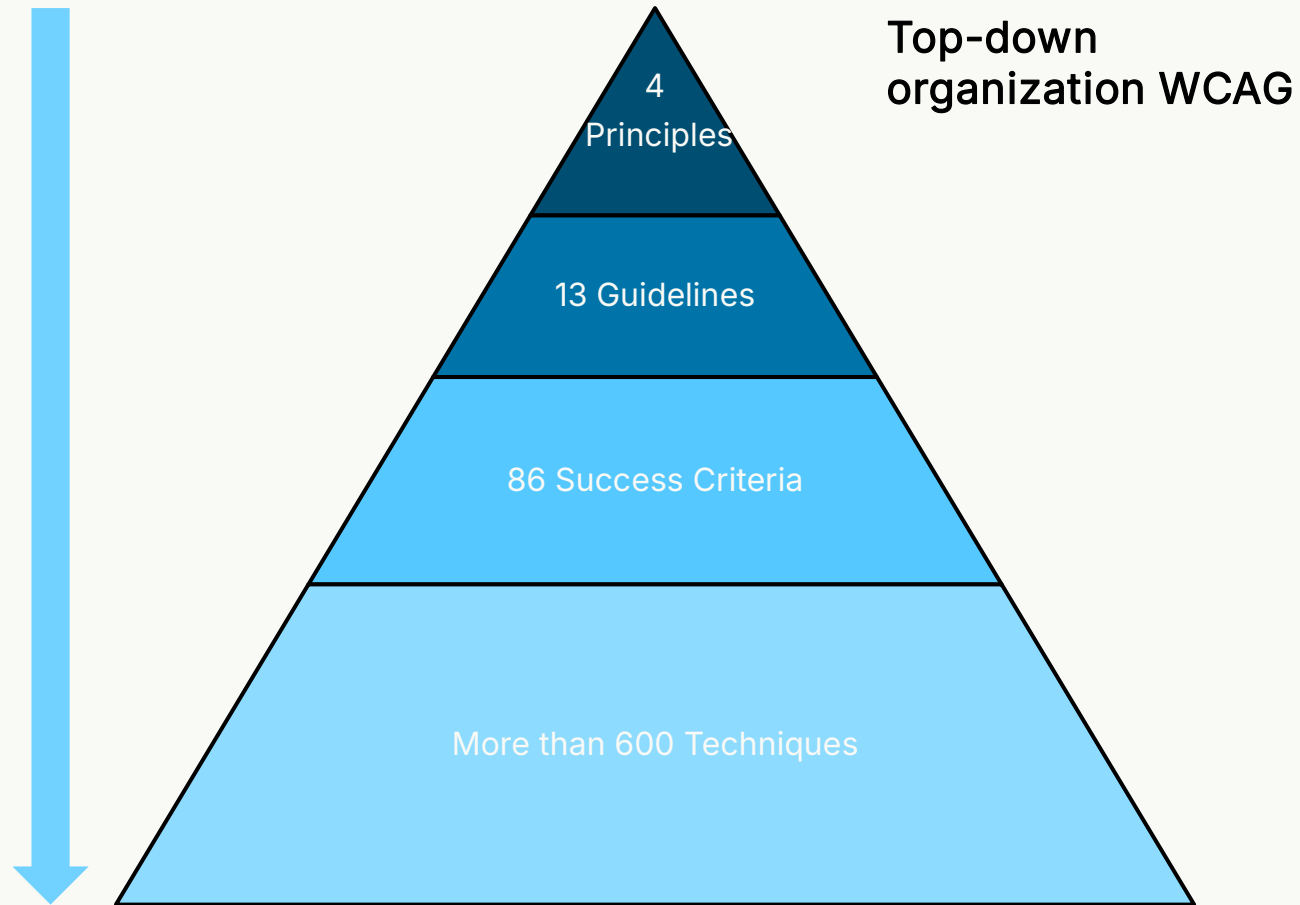
INTRODUCTION TO IT ACCESSIBILITY

1

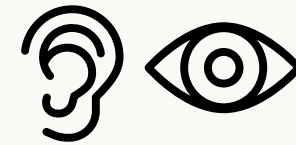
IT ACCESSIBILITY



INTERNATIONAL WEB ACCESSIBILITY GUIDELINES - WCAG



WCAG 4 Principles



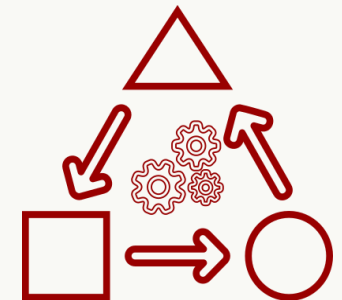
Perceivable



Operable



Understandable

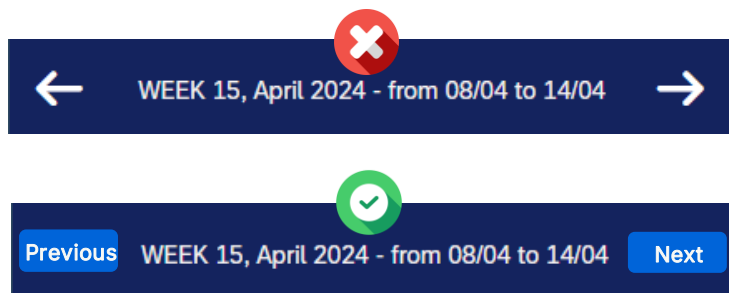


Robust

LEVEL OF COMPLIANCE WITH WCAG

LEVEL SIMPLE A

- Is the minimum level of conformance.
- Example: Guideline 1.1 Text Alternatives.



Problem

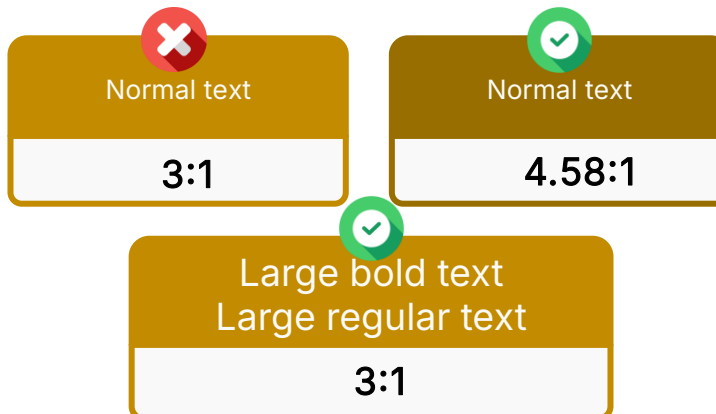
- Shapes don't help screen readers identifying the meaning.
- Some shapes can be difficult to distinguish.

Alternatives

- Words can be identified by screen readers.
- Simple words support the meaning of the shape, for example "Previous" or "CANCEL" would have different meanings.

LEVEL DOUBLE A (AA)

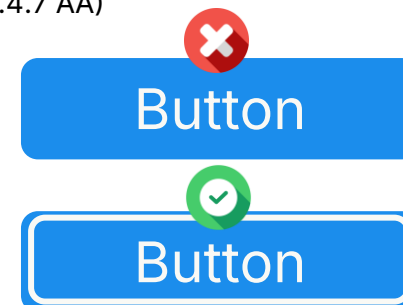
- Is generally the level that most sites are aiming to meet. It can often be a level that is a legal requirement.
- Example: Guideline 1.4.3 Contrast (Minimum)



- The main success criterion is as follows:
 - The visual presentation of text and images of text has a contrast ratio of at least 4.5:1, except for the following:
 - Large Text: Large-scale text and images of large-scale text have a contrast ratio of at least 3:1.

LEVEL TRIPLE A (AAA)

- Is the strictest level and can introduce significant design challenges given the nature of the success criteria. It is considered the gold standard level of accessibility.
- Example: Guideline 2.4.13 **Focus Appearance** instead of just **Focus visible** (2.4.7 AA)



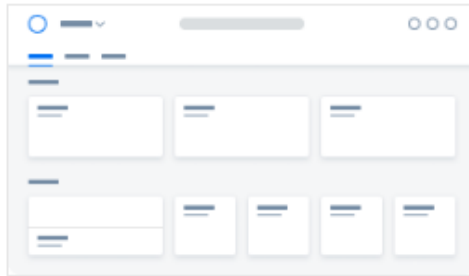
- Users should be able to see where the keyboard focus is as they navigate around a web page. The WCAG 2.2 Success Criterion adds some specifics as to how contrasted the focus element should be.
- People navigating with a keyboard need to know which element has the current focus, so they don't lose their way on the web page.



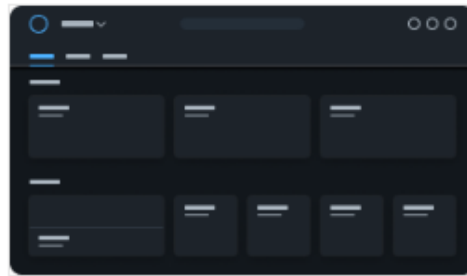
ACCESSIBILITY IN FIORI CONTEXT

FIORI THEMES COMPLIANCE 1/2

SAP Fiori Themes



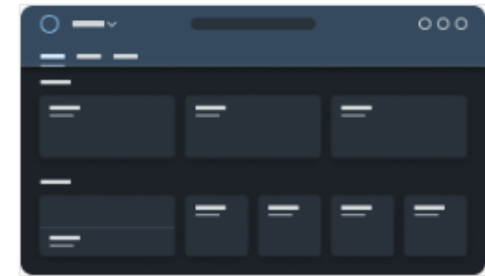
Morning Horizon



Evening Horizon

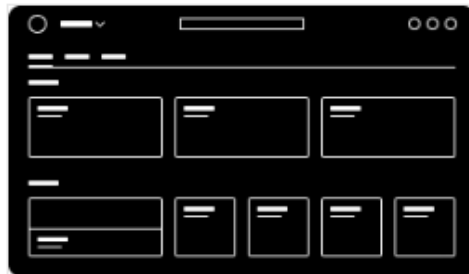


Quartz Light

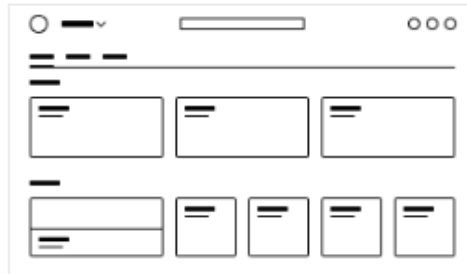


Quartz Dark

SAP Fiori High Contrast Themes



High-Contrast Black theme



High-Contrast White theme

FIORI THEMES COMPLIANCE 2/2

COMPLIANCE WCAG						
FIORI THEME NAME	WCAG 2.0 AA	WCAG 2.0 AAA	WCAG 2.1 AA	WCAG 2.1 AAA	WCAG 2.2 AA	WCAG 2.2 AAA
Horizon (Morning / Evening)	✓	✓	✓	✓	✓	✗
Horizon High Contrast (Black / White)	✓	✓	✓	✓	✓	✓
Quartz (Light / Dark)	✓	✓	✓	✗	✗	✗
Quartz High Contrast (Black / White)	✓	✓	✓	✓	✗	✗
Belize	✓	✗	✗	✗	✗	✗
Belize High Contrast (Black / White)	✓	✓	✗	✗	✗	✗



3

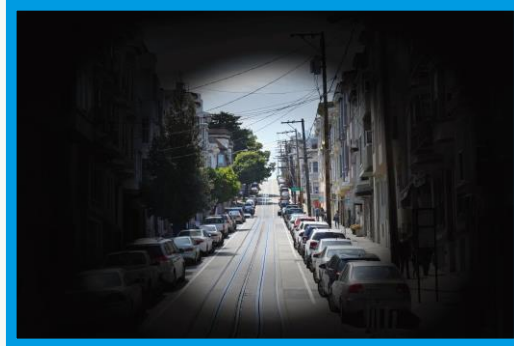
IMPAIRMENTS ADDRESSED IN FIORI

VISUAL IMPAIRMENTS CASE

Visual Acuity



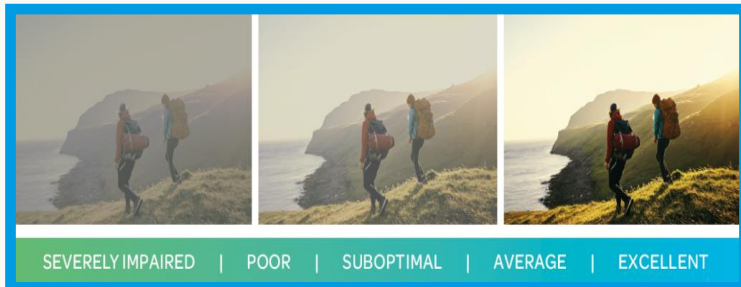
Field of vision



Light Sensitivity



Contrast sensitivity



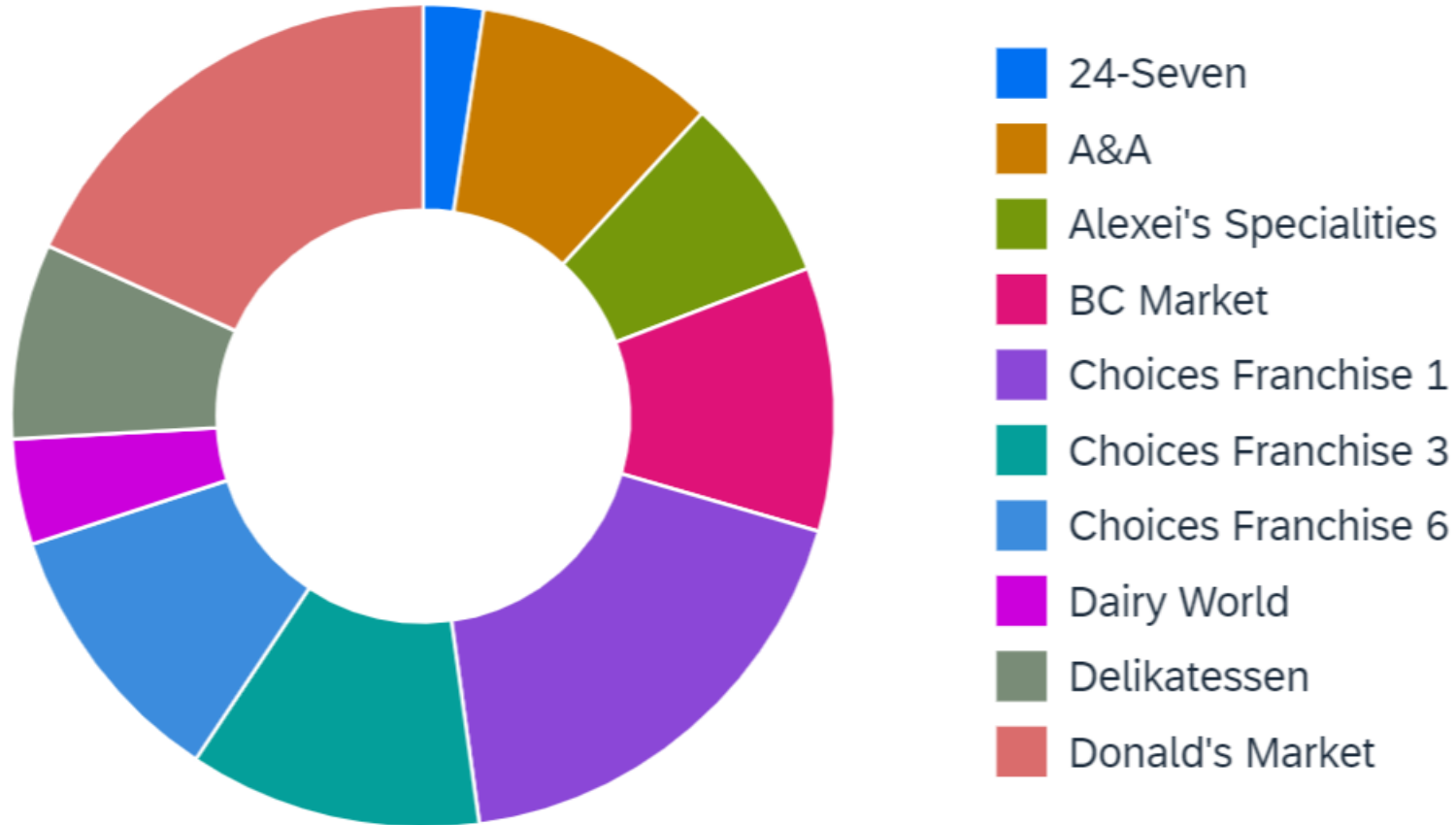
5 Categories of visual impairments

Color blindness



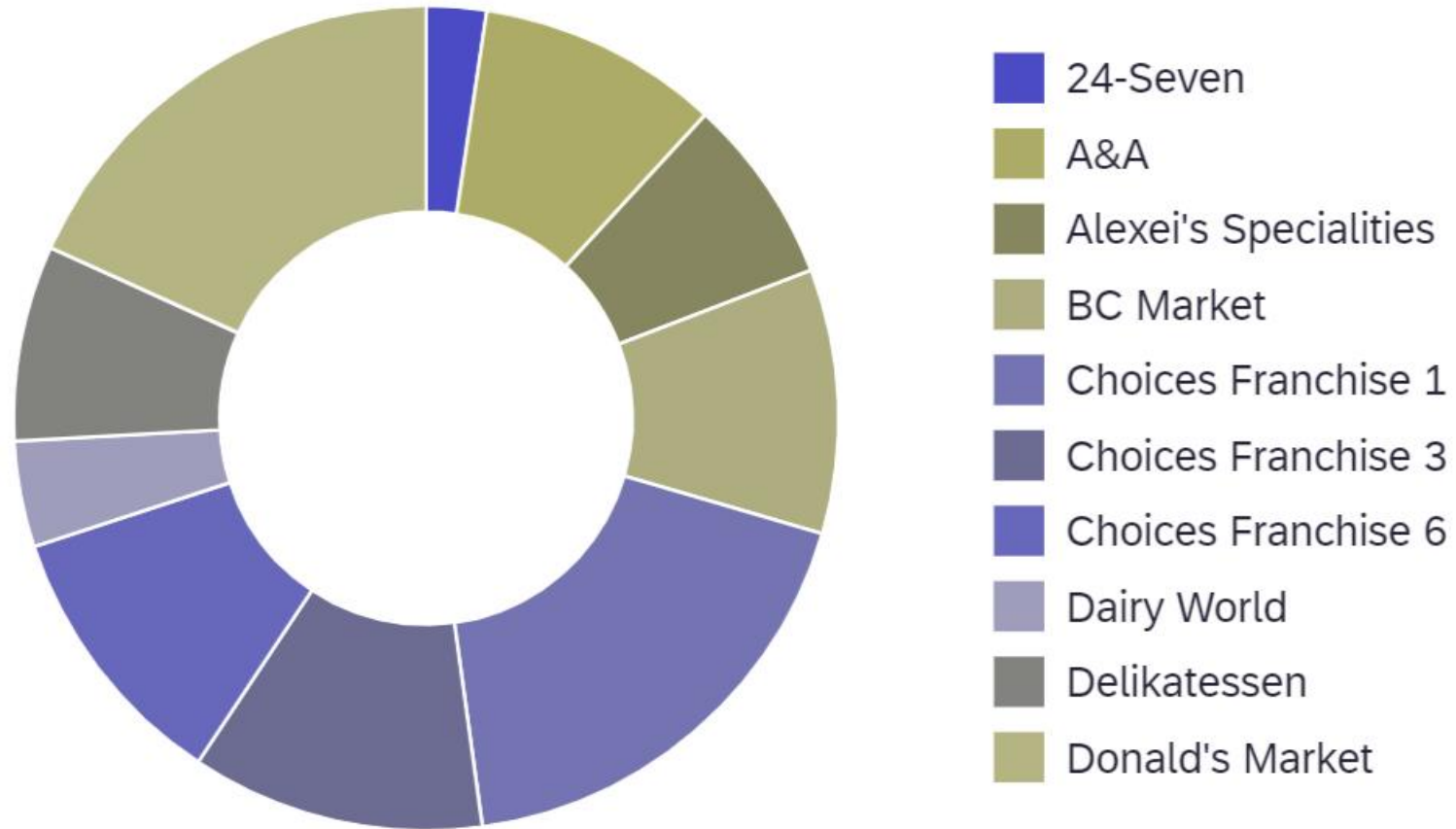
FOCUS ON COLOR BLINDNESS

NORMAL VISION



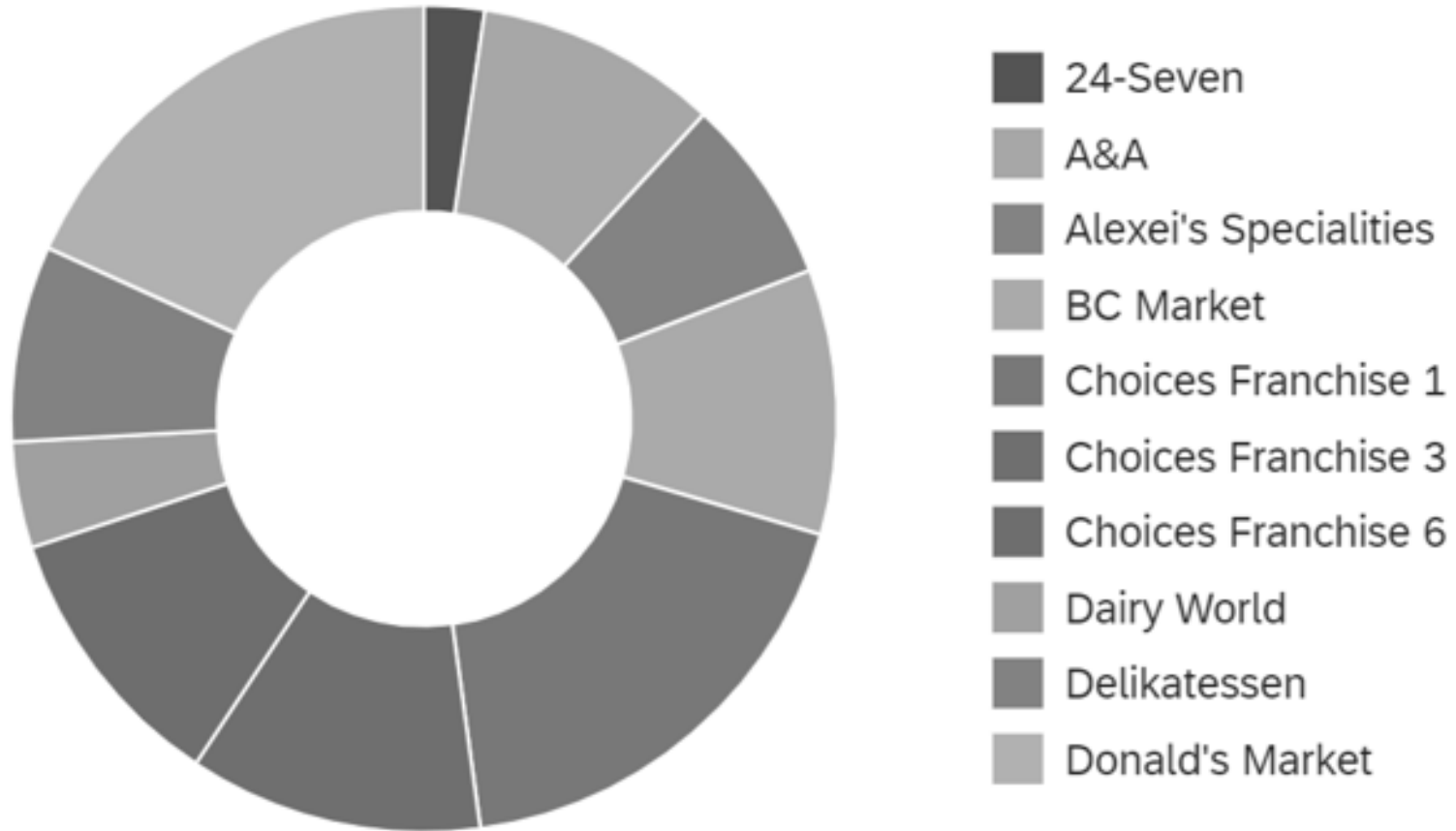
FOCUS ON COLOR BLINDNESS

PROTANOPIA

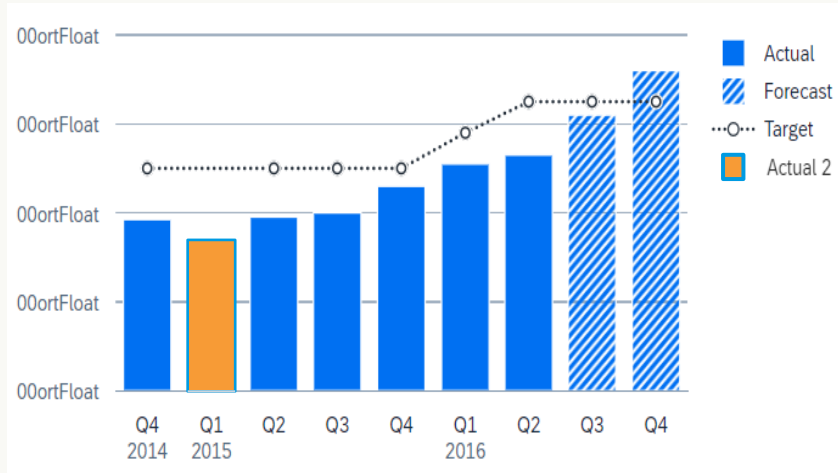


FOCUS ON COLOR BLINDNESS

ACHROMATOPSIA



ALTERNATIVE



We can use this type of chart, with different kinds of charts (Line, StackedBar, hatched bar, empty bar) to help users distinguish between the different indicators.

```
var vizProperties = {  
    ...  
    seriesStyle: {  
        "rules": [{  
            "dataContext": {  
                "Actual2": "*"  
            },  
            "properties": {  
                "dataPoint": {  
                    "pattern": "noFill"  
                }  
            }  
        }  
    ],  
    dataPointStyle: {  
        "rules": [{  
            "dataContext": {  
                "Actual": "*"  
            },  
            "properties": {  
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                "displayName": "Actual",  
                "dataName": {  
                    "Actual": "Actual"  
                }  
            }  
        }  
    ],  
    {  
        "dataContext": {  
            "Actual": "*"  
        },  
        "properties": {  
            "color": "sapUiChartPaletteQualitativeHue1",  
            "pattern": "diagonalLightStripe"  
        }  
    },  
    {  
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            "Target": "*"  
        },  
        "properties": {  
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            "lineColor": "sapUiChartZeroAxisColor",  
            "lineType": "dot",  
            "pattern": "noFill"  
        }  
    },  
    {  
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        "dataName": {  
            "Actual": "Forecast"  
        }  
    },  
    {  
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            "Target": "*"  
        },  
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            "lineColor": "sapUiChartZeroAxisColor",  
            "lineType": "dot",  
            "pattern": "noFill"  
        }  
    },  
    {  
        "displayName": "Target",  
        "dataName": {  
            "Target": "Target"  
        }  
    }  
    ...  
}
```

VizFrame is a viz control that manages an initialization of a visualization layout, feeding, customization and interactions.

It has various properties and features in SAPUI5.

In this example we used four of its properties:

- **noFill pattern** : to have a bar chart with no filling
- **diagonalLightStripe pattern**: to have a bar chart with hatched filling
- **Properties lineType/lineColor** to have a line chart with different types (hatched line, point line, continuous line) and colors, if we add the pattern **noFill** the bullet points will be with no color
- **Color** If we put only color in the properties without pattern we will have a colored bar chart.

MOTOR IMPAIRMENTS: WHO IS CONCERNED?

Motor impairments are often visible disabilities :

- Having total loss of function of a body part
- Muscle weakness, stamina loss, lack of muscle control, or paralysis

2 CATEGORIES OF MOTOR IMPAIREMENT

Traumatic Injuries



Diseases and Congenital Conditions



OBJECTIVES



- ✓ Functions are available to both mouse/touchpad and keyboard users
- ✓ Ensure forms are error-tolerant. Create sufficiently large links and buttons that remain in a static position. Allow users to remap or disable single key shortcuts.
- ✓ Provide a method for skipping over long lists of links or other lengthy content
- ✓ Ensure content works in both horizontal or vertical orientation.



4

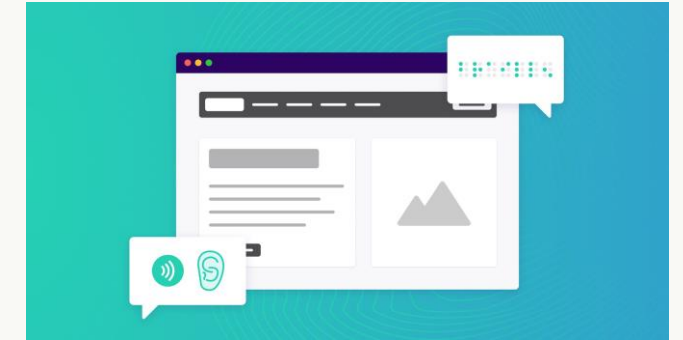
Screen Reader

Screen Reader

A screen reader is an assistive technology that is intended to help people with vision impairments.

It converts text, images and other screen elements into speech or braille. In the context of this presentation, we will focus on speech.

SAPUI5 offers Screen Read support. The implementation is based on the HTML and ARIA standards.



General Screen Reader

3 modes:

- Virtual/browser mode
- Forms/focus mode
- Application mode

3 principles:

- Keyboard access
- Interactive Elements must have role
- Elements with a role must have an accessible name

NVDA

- Open Source
- Implying a large community ready to help
- Many extensions available
- Virtual mode is called « Browse mode »





5

Hands-on: Let's Code!

GitHub Repository



https://github.com/devops-vesi/zfaca_accessibility_training

Passwords #1 Role

01. vanish

02. mosquito

03. pride

Passwords #2 Accessible Name

04. trigger

05. race

06. cruise

07. island

08. photo

09. need

10. lawsuit

11. sign

12. horror

Passwords #3 Error Management & Context Changes

13. grab

14. north

15. promote

Passwords #4 Keyboard Navigation

16. surge

17. shrimp

Passwords #5 Other Best Practices

18. cannon



Got feedback? Let's hear it!



SAPUI5 Accessibility in
Action: Building
inclusive Fiori Apps

The image shows a smartphone screen with a feedback form titled "Keynote". The form has a yellow header bar with a back arrow and a star icon. Below the header, the title "Keynote" is centered. The form contains two sections, each with a question and five radio button options. The first section asks "Overall, how satisfied were you with this session? (5=Very Satisfied)" and the second section asks "How relevant was the session content to your work? (5=Very Relevant)". Both sections have options for 5 (Very satisfied/Very Relevant), 4 (Satisfied/Relevant), 3 (Neutral), 2 (Dissatisfied/Not Relevant), and 1 (Very dissatisfied/Not Relevant).

Keynote

Feedback

Overall, how satisfied were you with this session? (5=Very Satisfied)

☐ 5 - Very satisfied

☐ 4 - Satisfied ☐ 3 - Neutral

☐ 2 - Dissatisfied

☐ 1 - Very dissatisfied

How relevant was the session content to your work? (5=Very Relevant)

☐ 5 - Very satisfied

☐ 4 - Satisfied ☐ 3 - Neutral

☐ 2 - Dissatisfied

☐ 1 - Very dissatisfied

LET'S CONNECT

“



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