**Understanding the Four Principles (POUR)**

**Case Study: Accessible Redesign of a University Admissions Portal**

**Background:**  
A major public university undertook a redesign of its online admissions portal to make it accessible to all prospective students, including those with disabilities. The old system had several barriers for users with visual, motor, and cognitive impairments. The redesign was guided by the Web Content Accessibility Guidelines (WCAG) 2.1 and followed the four POUR principles: Perceivable, Operable, Understandable, and Robust.

**1. Perceivable – Making Content Visible and Audible**

**Challenge:**  
The original portal included images without alternative text, videos without captions, and important indicators shown only with color.

**Solution:**

* Provided alternative (alt) text for all images.
* Added captions and transcripts to all videos.
* Used both text and icons (not just color) to show important information, such as required fields.

**Use Case:**  
A visually impaired student using a screen reader can now understand the structure and content of the form because all images and videos are described with appropriate alternatives. Required fields are also clearly marked in ways that do not depend on color.

**2. Operable – Ensuring Functionality via Keyboard and Input Methods**

**Challenge:**  
Interactive features like menus and date pickers could only be used with a mouse, which created issues for users who rely on keyboards or assistive devices.

**Solution:**

* Enabled full keyboard navigation for all features.
* Implemented skip links and maintained a logical tabbing order.
* Extended time limits on forms or allowed adjustments.

**Use Case:**  
A user with motor impairments using only a keyboard or a mouth-stick can navigate through the form, select dates, and submit the application without needing a mouse.

**3. Understandable – Creating Readable and Predictable Interfaces**

**Challenge:**  
Inconsistent labels, unclear instructions, and complex language made it difficult for users to complete tasks.

**Solution:**

* Used consistent and descriptive labels for buttons and form elements.
* Added clear error messages with guidance for correction.
* Maintained consistent layout and navigation across the portal.

**Use Case:**  
A student with a cognitive disability can follow the instructions and error messages more easily, ensuring that they can complete the application form with fewer mistakes and less frustration.

**4. Robust – Supporting Assistive Technology Across Platforms**

**Challenge:**  
The previous portal used outdated HTML and had poor compatibility with screen readers and mobile devices.

**Solution:**

* Used semantic HTML5 elements such as header, nav, main, and footer.
* Added ARIA (Accessible Rich Internet Applications) attributes to dynamic content like tabs and accordions.
* Tested the site with multiple assistive technologies and on different browsers and devices.

**Use Case:**  
A student using a screen reader on a mobile device can understand and interact with dynamic content like collapsible panels because the portal communicates changes using ARIA roles and is structured for assistive technologies.

**Summary Table – POUR Principles Applied**

| **Principle** | **Challenge Addressed** | **Implemented Solution** | **Benefiting Users** |
| --- | --- | --- | --- |
| Perceivable | Missing alt text, no captions, color-only cues | Added alt text, captions, and color-independent cues | Users with visual or auditory impairments |
| Operable | Mouse-only interaction | Enabled keyboard navigation and extended time | Users with motor disabilities |
| Understandable | Inconsistent labels, unclear feedback | Improved clarity, error messages, and layout | Users with cognitive disabilities |
| Robust | Incompatible with assistive tech | Used semantic HTML and ARIA roles | Users with screen readers and mobile devices |

**Outcomes**

* Accessibility score improved from 54 percent to 94 percent after redesign.
* Application completion rates increased by 30 percent among users with disabilities.
* Feedback from students emphasized improved clarity and ease of use.