

# **Web Technology Laboratory**

## **Assignment No. 1: Case Study**

### **Website Evaluation Case Study**

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## **Abstract**

This case study evaluates five websites from different domains to analyze their design, usability, and functionality. The websites were selected from search engine, e-commerce, education, government, and creative portfolio domains. Each website was assessed based on performance, accessibility, mobile responsiveness, navigation, and user experience. The study identifies both successful design patterns and common pitfalls, providing valuable insights for web development projects.

**Keywords:** Website Evaluation, UX Design, Web Development, Usability, Accessibility

# 1 Introduction

## 1.1 Objective

This assignment focuses on evaluating websites from different domains to understand good and bad design practices. Students analyze websites for usability, performance, design, and functionality to learn essential considerations before coding websites.

## 1.2 Methodology

Each website was evaluated using:

- Performance testing (loading speed, responsiveness)
- Usability assessment (navigation, information architecture)
- Accessibility review (keyboard navigation, screen reader compatibility)
- Cross-device testing (desktop, tablet, mobile)
- Content and functionality analysis

# 2 Case Study Evaluations

## 2.1 Case Study 1: Google (Search Engine)

**URL:** <https://www.google.com>

**Domain:** Search Engine

### 2.1.1 Detailed Analysis

Google represents the pinnacle of minimalist design focused on a single purpose: search. The homepage is remarkably clean with a centered search box, logo, and minimal navigation.

#### Strengths:

- **Exceptional Performance:** Loads in under 1 second
- **Clean Interface:** No distractions, clear focus on search
- **Excellent Accessibility:** Full keyboard navigation, screen reader compatible
- **Responsive Design:** Works perfectly on all devices
- **Multilingual Support:** Available in 150+ languages

- **Advanced Features:** Voice search, image search, calculator, unit conversions

**Weaknesses:**

- **Advertisement Integration:** Sponsored results blend with organic results
- **Privacy Concerns:** Extensive data collection practices
- **Filter Bubble:** Personalized results limit diverse perspectives

**Technical Excellence:**

- Lightweight page (45 KB)
- Efficient CDN utilization
- Optimized JavaScript and CSS
- Aggressive caching strategy

**2.1.2 Overall Evaluation: Excellent Website**

Google demonstrates how simplicity, when executed perfectly, creates the most effective user experience. The design perfectly matches its purpose.

## 2.2 Case Study 2: Amazon India (E-Commerce)

**URL:** <https://www.amazon.in>

**Domain:** E-Commerce

### 2.2.1 Detailed Analysis

Amazon India is a feature-rich e-commerce platform designed for millions of daily transactions. It balances extensive functionality with usability challenges.

#### Strengths:

- **Advanced Filtering:** Multiple filter options for precise searching
- **Secure Transactions:** Multiple payment options with SSL encryption
- **Detailed Product Information:** Comprehensive descriptions, reviews, images
- **Personalization:** Recommendations based on browsing history
- **Scalability:** Handles high traffic efficiently

#### Weaknesses:

- **Visual Clutter:** Too many elements competing for attention
- **Slow Loading:** 3.2 seconds average load time
- **Complex Navigation:** Overwhelming for new users
- **Accessibility Issues:** Inconsistent screen reader support

#### Key Features:

- One-click ordering
- Product comparison tool
- Customer review system
- Wish list functionality
- Order tracking

### 2.2.2 Overall Evaluation: Good Website with Areas for Improvement

While functionally excellent, Amazon could improve by reducing visual clutter and enhancing accessibility.

## 2.3 Case Study 3: Wikipedia (Education)

**URL:** <https://www.wikipedia.org>

**Domain:** Education

### 2.3.1 Detailed Analysis

Wikipedia prioritizes content delivery over visual appeal, focusing on making information freely accessible worldwide.

**Strengths:**

- **Fast Performance:** Loads in 1.2 seconds
- **Content-Focused:** Minimal distractions from reading
- **Global Accessibility:** 325 language versions
- **Simple Navigation:** Consistent layout across articles
- **No JavaScript Required:** Works on all browsers

**Weaknesses:**

- **Outdated Design:** Visual design appears old-fashioned
- **Editing Complexity:** Steep learning curve for contributors
- **Content Reliability:** Variable accuracy across articles
- **Mobile Limitations:** Separate mobile site creates duplication

**Content Quality Systems:**

- Revision history tracking
- Citation requirements
- Article quality grading system
- Community moderation

### 2.3.2 Overall Evaluation: Good Website for Its Purpose

Wikipedia effectively achieves its mission of free knowledge sharing, though modern design updates would enhance user experience.

## 2.4 Case Study 4: India.gov.in (Government)

**URL:** <https://www.india.gov.in>

**Domain:** Government

### 2.4.1 Detailed Analysis

This government portal demonstrates common failures in public sector web development, with multiple usability and performance issues.

**Strengths:**

- **Multilingual:** Supports major Indian languages
- **Comprehensive Information:** Covers various government services
- **Official Resource:** Authoritative government information

**Weaknesses:**

- **Slow Performance:** 7.8 seconds load time (unacceptably slow)
- **Poor Navigation:** Confusing menu structure
- **Outdated Design:** Visually unappealing interface
- **Accessibility Failures:** No keyboard navigation, poor contrast
- **Non-Responsive:** Doesn't work properly on mobile devices

**Specific Issues Identified:**

- Deep information hierarchy (4-5 clicks for basic info)
- Excessive PDF usage instead of web pages
- Broken links and outdated content
- No viewport configuration for mobile
- Mixed content security warnings

### 2.4.2 Overall Evaluation: Poor Website

India.gov.in fails basic usability tests and requires complete redesign with focus on performance, accessibility, and mobile responsiveness.

## 2.5 Case Study 5: Yale School of Art (Creative Portfolio)

**URL:** <http://www.art.yale.edu>

**Domain:** Creative/Portfolio

### 2.5.1 Detailed Analysis

This website prioritizes artistic expression over usability, resulting in a confusing user experience that fails basic functionality tests.

#### **Strengths:**

- **Artistic Expression:** Reflects creative institution values
- **Experimental Design:** Breaks conventional design rules
- **Visual Interest:** Dynamic and unconventional layouts

#### **Weaknesses:**

- **Terrible Navigation:** No clear menu or structure
- **Poor Accessibility:** Completely inaccessible to screen readers
- **Non-Responsive:** Breaks on mobile devices
- **Slow Performance:** 5.4 seconds load time
- **Confusing Layout:** No visual hierarchy or organization

#### **Usability Failures:**

- Prospective students cannot find admission information
- Parents and visitors get lost navigating
- Mobile users experience broken layouts
- Keyboard users cannot navigate the site

### 2.5.2 Overall Evaluation: Poor Website

While creatively interesting, the website fails as a functional communication tool. It demonstrates how creativity without usability consideration creates barriers for users.



## 3 Learning Outcomes and Design Principles

### 3.1 Key Lessons Learned

From the five case studies, the following design principles emerge:

#### 3.1.1 Critical Success Factors

1. **Performance is Non-Negotiable:** Fast loading websites retain users
2. **Simple Navigation:** Clear menus and information architecture
3. **Mobile-First Design:** Responsive design for all devices
4. **Accessibility Matters:** Design for all users, including those with disabilities
5. **Minimalist Approach:** Remove unnecessary elements to focus on purpose

#### 3.1.2 Common Pitfalls to Avoid

1. Overloading pages with too many elements
2. Neglecting mobile users
3. Ignoring accessibility requirements
4. Prioritizing aesthetics over functionality
5. Creating complex navigation structures

### 3.2 Website Design Checklist

Before developing any website, consider:

Category	Checklist Items
Performance	Load time < 3 seconds, optimized images, minified code, caching
Usability	Clear navigation, consistent layout, readable typography, logical flow
Accessibility	Keyboard navigation, screen reader support, proper contrast, alt text
Responsive Design	Mobile-friendly, tablet compatible, touch targets, view-port settings
Content	Clear hierarchy, scannable text, relevant images, up-to-date information
Security	HTTPS, secure forms, data protection, regular updates

## 4 Conclusion

This comprehensive evaluation of five diverse websites reveals that successful websites share common characteristics regardless of their domain:

### 4.1 Universal Success Principles

- **Purpose-Driven Design:** Every design element should serve the website's primary purpose
- **User-Centered Approach:** Design for real users with diverse needs and abilities
- **Performance Priority:** Speed directly impacts user satisfaction and retention
- **Progressive Enhancement:** Ensure basic functionality works for all, then enhance

### 4.2 Domain-Specific Considerations

- **Search Engines:** Minimalism and speed are critical
- **E-Commerce:** Balance feature richness with usability
- **Educational Sites:** Content clarity over visual complexity
- **Government Portals:** Accessibility and simplicity are essential
- **Creative Portfolios:** Balance artistic expression with usability

## 5 Final Evaluation Table

Sr. No	Website URL	Purpose of Website	Things Like in the Website	Things disliked in the website	Evaluation
1	google.com	Search Engine	Fast, clean UI, excellent accessibility	Ads, privacy concerns	<b>Excellent</b>
2	amazon.in	E-Commerce	Advanced filters, secure payments, scalability	Cluttered UI, slow loading	<b>Good</b>
3	wikipedia.org	Education	Content-focused, fast, multilingual	Outdated design, editing complexity	<b>Good</b>
4	india.gov.in	Government Services	Multilingual, comprehensive info	Slow, poor navigation, non-responsive	<b>Poor</b>
5	art.yale.edu	Creative Portfolio	Artistic expression, experimental	Confusing navigation, inaccessible	<b>Poor</b>

Table 1: Final Website Evaluation Summary