

Design Thinking Assignment

Design for Change: Web Solutions that Make a Difference

A Project by:

- Student Name: Hitesh Gupta
- Roll Number: 202501100400162

Institution Details:

- Branch: CSE(AI\ML)
- College: Krishna Institute of Engineering & Technology

This document outlines the initial phases (Empathize, Define, and Ideate) of a Design Thinking process applied to a critical social challenge: achieving educational equity through accessible, high-quality online learning resources for low-income students.

Introduction to Design Thinking for Web Solutions

What is Design Thinking?

Design Thinking is a non-linear, iterative process used to understand users, challenge assumptions, redefine problems, and create innovative solutions. It centers on a human-centered approach, prioritizing the needs of the end-user at every stage of development.

Why It Matters in Web Design

In web design, Design Thinking ensures that solutions are not just technically functional, but truly desirable and effective for the target audience. It moves beyond aesthetics to focus on usability, accessibility, and positive user outcomes, which is critical for impactful social change projects.

This project aims to leverage the power of technology—specifically web solutions—to create a positive social impact, focusing on bridging the digital divide in education. We start with deep empathy to build a solution that matters.



Phase 1: Empathize - Understanding the User

The Challenge of Educational Access

To design an effective solution, we must first deeply understand the individuals we are trying to help. Our focus is on students facing socio-economic barriers to online education. This requires moving beyond assumptions and immersing ourselves in their reality.



User Persona: Hitesh Gupta

- **Occupation:** College student
- **Background:** Low-income family



Goals & Motivations

Hitesh is highly motivated and seeks to learn new technical or professional skills to secure better career opportunities. He actively looks for free certification courses to bolster his resume.

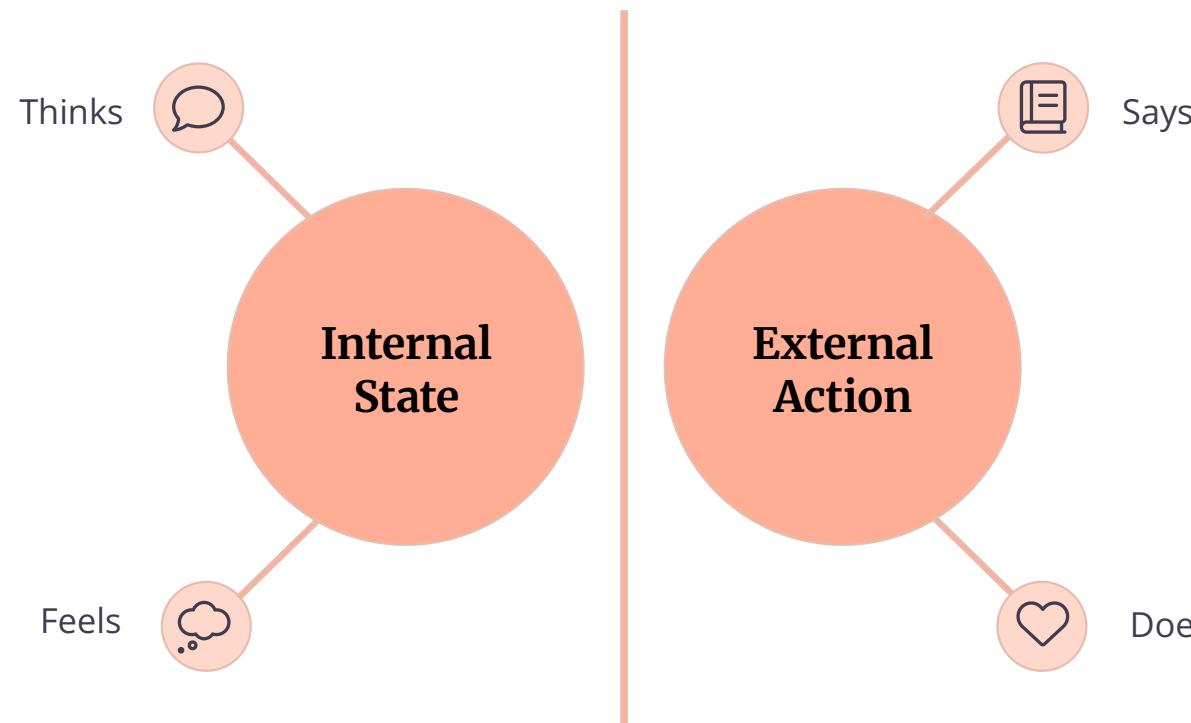


Key Pain Points

Hitesh struggles with the high cost of quality resources (paid subscriptions), unreliable and slow internet access, and the overwhelming, scattered nature of finding reliable free content online.

Empathy Map: Hitesh's World

The Empathy Map provides a structured view of Hitesh's experience, allowing us to capture his environment, behavior, concerns, and aspirations. This is foundational for the Define phase.



Insights from Observation (Says/Does)

- **Says:** "I can't afford the professional courses my peers are taking."
- **Does:** Searches YouTube or numerous free educational sites, often wasting hours comparing options and checking credibility.

Insights from Internal State (Thinks/Feels)

- **Thinks:** "I might fall behind my classmates if I don't get reliable learning materials soon."
- **Feels:** Frustrated by limited access, yet intensely hopeful about his future prospects if he can acquire the right skills.

Phase 3: Ideate – Generating Creative Solutions (Part 1)

Five Creative Web Features to Address Hitesh's Needs

The Ideation phase focuses on generating a high volume of diverse potential solutions based on the defined problem. Here, we outline five key features our web platform could include to support Hitesh and students like him.



Free Course Aggregator

A central system that aggregates, vets, and recommends the best free courses from multiple providers (Coursera, edX, YouTube channels) based on user goals and learning paths.



Scholarship & Internships

A curated, continuously updated section listing scholarships, grants, and entry-level internships specifically targeting low-income and first-generation students.



Community Forum

A structured discussion board for peer-to-peer learning, where students can ask questions, form study groups, and share insights about resources.



Mentorship Connect

A system matching students with volunteer professional mentors who can offer career guidance and accountability (a 'virtual big brother/sister').



Low-Bandwidth Mode

A feature allowing content (text, PDFs, compressed video) to be downloaded during brief high-speed moments for consumption later when internet is slow or unavailable.

Ideate - Generating Creative Solutions (Part 2: Crazy 8 Sketches)

Rapid Conceptualization for Homepage Design

The "Crazy 8s" technique forces rapid ideation, pushing us past conventional ideas. We quickly sketched 8 distinct concepts for the platform's user interface, focusing on different visual hierarchies and interactions.

1 Dashboard Layout (Prioritizing Progress)

Central focus on the user's current course progress and skill badges earned. Minimalist design to reduce loading time.

2 Large Course Cards (Visual Browsing)

Visually rich cards featuring course ratings, time commitment, and a clear "Free" label. Easy filtering by skill category.

3 Mentor Chat Widget (Immediate Help)

A persistent, collapsible widget for quick access to the mentorship connection, fostering a sense of immediate support.

4 Gamified Leaderboard (Motivation)

Publicly display non-sensitive achievements (e.g., hours studied, courses completed) to drive motivation through friendly competition.

5 Advanced Search Filter Interface (Precision)

Allows filtering by required bandwidth, content format (video/text), certification availability, and specific skill tags, crucial for Hitesh's pain point.

6 Community Forum Interface (Engagement)

A prominent, clean layout showing trending topics and recently asked questions, making peer help highly visible.

7 Resource Verification Badge (Trust Building)

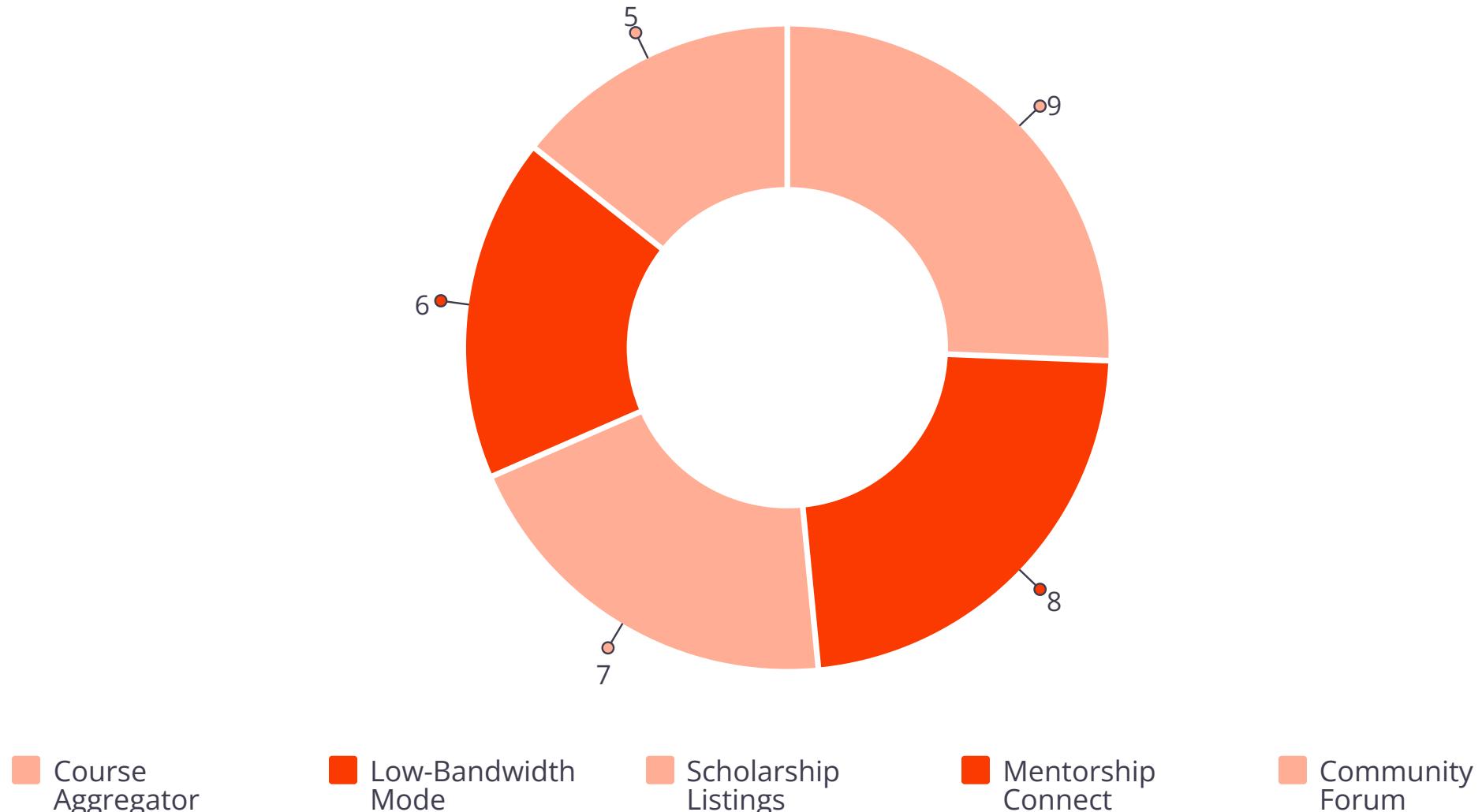
A visual design element (e.g., a "Verified by Community & Experts" badge) placed next to high-quality external resources.

8 Offline Download Manager (Accessibility)

A dedicated tab or page for managing content downloads, showing file size and estimated download time on slow connections.

Synthesis of Ideation: Prioritizing the MVP

Not all ideas can be built at once. Based on Hitesh's core needs (verified content, accessibility), we prioritize the most essential features for a Minimum Viable Product (MVP).

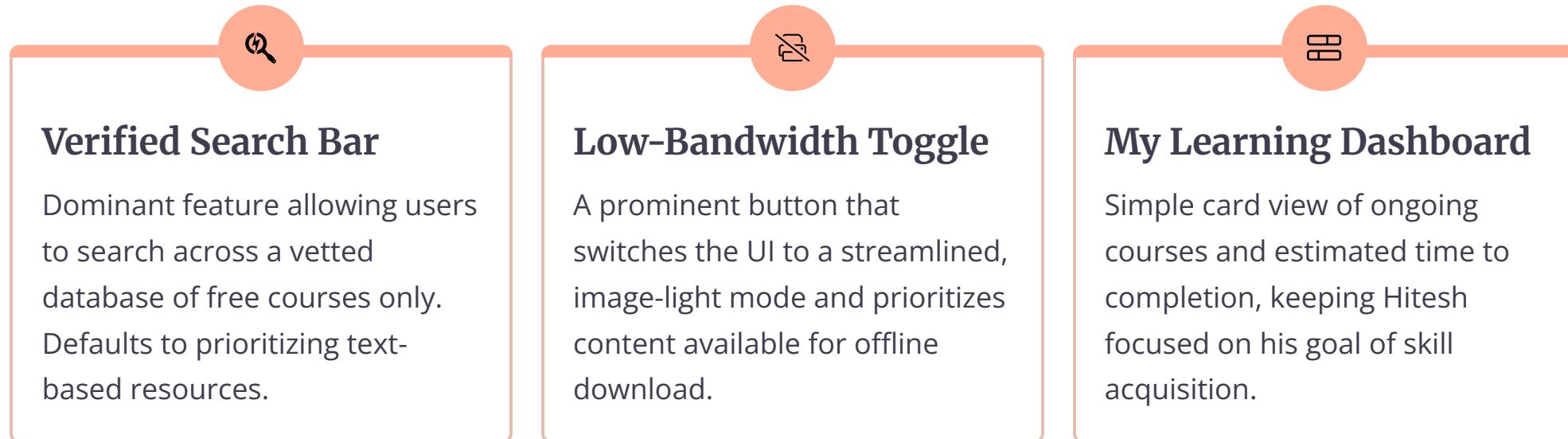


The Course Aggregator and Low-Bandwidth Mode receive the highest impact scores as they directly solve Hitesh's primary pain points of finding trustworthy content and struggling with slow internet.

Proposed Solution Sketch: MVP Homepage

Visualizing the Core Experience

Combining our defined problem with high-priority ideation results in a focused design concept. This layout emphasizes rapid access to verified, free resources, and caters to low-bandwidth environments.



The design philosophy here is "maximum value, minimum friction," ensuring the solution works seamlessly even under challenging internet conditions.

Conclusion: Empathy Leads to Impact

Applying the initial three phases of Design Thinking provided a structured and empathetic foundation for developing a socially conscious web solution.



Human-Centered Solutions

By focusing on Hitesh's experience, we designed features like the Low-Bandwidth Mode and the Verified Aggregator, which directly address real-world technological and economic constraints.



Web Design for Social Change

Technology is not neutral; its design dictates its impact. A conscious design process can intentionally break down barriers and foster educational equity rather than merely reflecting existing privilege.



Value of Process

Empathy and Ideation are essential catalysts. They transform a broad issue ("students need help") into a sharp, actionable problem statement and a set of diverse, creative features ready for Prototyping and Testing.

The next steps involve Prototyping the MVP interface and rigorously Testing it with students like Hitesh to ensure our solutions deliver true, positive change.