UniArchives: Ideation Docs

by the *tarotclub*

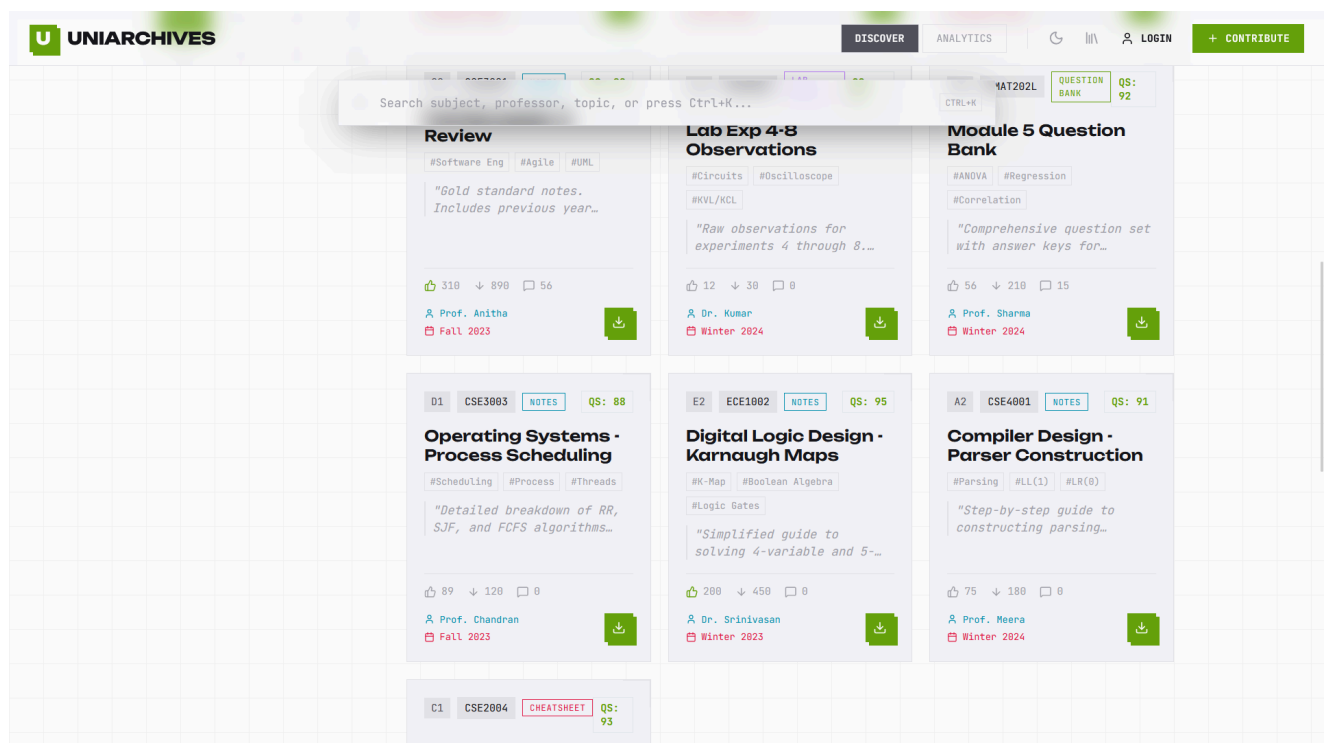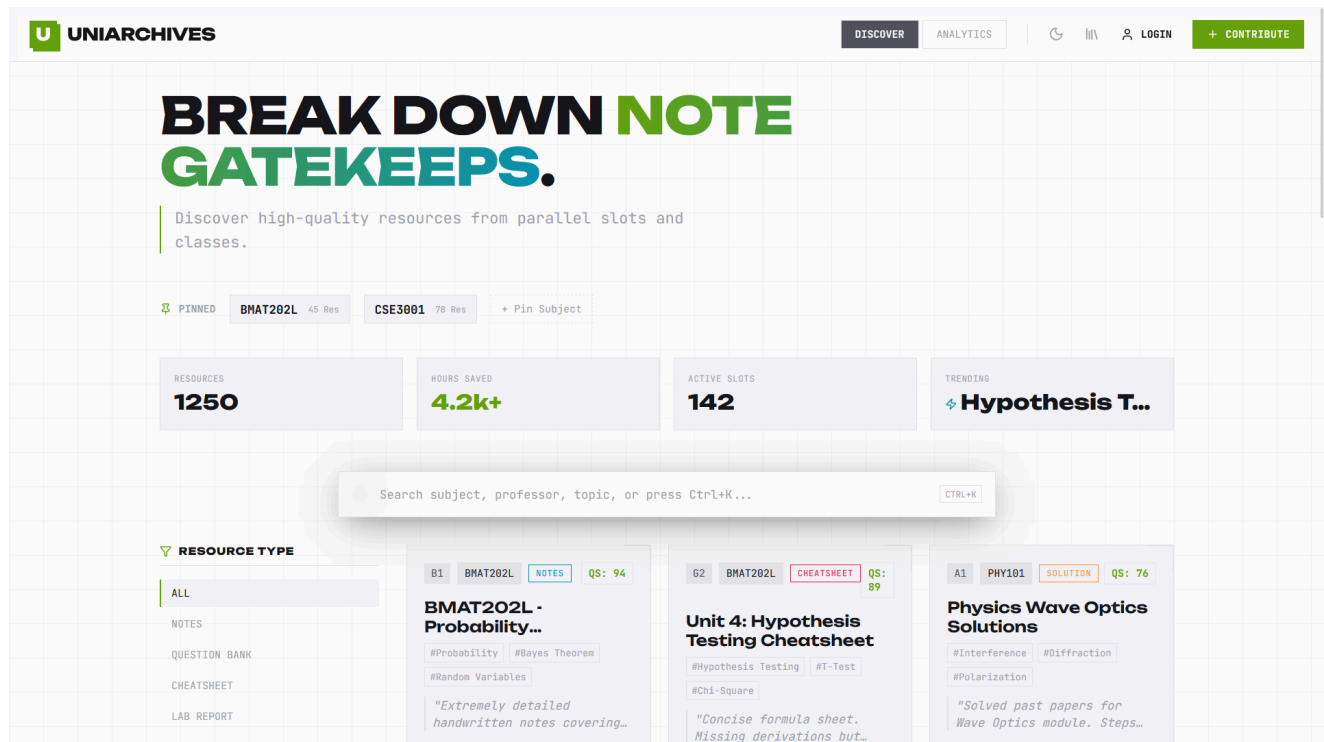Tagline: GitHub for college resources + Reddit's upvote system + Slot-based discovery

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Executive Summary

UniArchives solves a fundamental problem in slot-based academic systems: students have no way to discover high-quality study materials from parallel sections of the same course. A student in G2 slot will never meet the meticulous note-taker in B1; despite taking identical lectures from the same prof. This information asymmetry wastes hundreds of student-hours every sem as people recreate resources that already exist.

> ✏️ **The idea**
>
> We're building a platform where students can upload, discover, and rate academic resources across all slots. Think of it as a living, breathing knowledge base that gets smarter each sem; every uploaded note, every question bank, every formula sheet makes the system more valuable for everyone who comes after.

A Peek

BREAK DOWN NOTE GATEKEEPS.

Discover high-quality resources from parallel slots and classes.

📌 PINNED   BMAT202L 45 Res   CSE3001 78 Res   + Pin Subject

RESOURCES
1250

HOURS SAVED
4.2k+

ACTIVE SLOTS
142

TRENDING
⚡ **Hypothesis T...**

🔍 Search subject, professor, topic, or press Ctrl+K...   CTRL+K

▼ RESOURCE TYPE

ALL
NOTES
QUESTION BANK
CHEATSHEET
LAB REPORT

B1   BMAT202L   NOTES   QS: 94
BMAT202L - Probability...
#Probability   #Bayes Theorem
#Random Variables
"Extremely detailed handwritten notes covering..."

G2   BMAT202L   CHEATSHEET   QS: 89
Unit 4: Hypothesis Testing Cheatsheet
#Hypothesis Testing   #T-Test
#Chi-Square
"Concise formula sheet. Missing derivations but..."

A1   PHY101   SOLUTION   QS: 76
Physics Wave Optics Solutions
#Interference   #Diffraction
#Polarization
"Solved past papers for Wave Optics module. Steps..."

🔍 Search subject, professor, topic, or press Ctrl+K...   CTRL+K

Review
#Software Eng   #Agile   #UML
"Gold standard notes. Includes previous year..."
👍 310   👎 890   💬 56
👤 Prof. Anitha
📅 Fall 2023

Lab Exp 4-8 Observations
#Circuits   #Oscilloscope
#KVL/KCL
"Raw observations for experiments 4 through 8..."
👍 12   👎 30   💬 0
👤 Dr. Kumar
📅 Winter 2024

BMAT202L   QUESTION BANK   QS: 92
Module 5 Question Bank
#ANOVA   #Regression
#Correlation
"Comprehensive question set with answer keys for..."
👍 56   👎 210   💬 15
👤 Prof. Sharma
📅 Winter 2024

D1   CSE3003   NOTES   QS: 88
Operating Systems - Process Scheduling
#Scheduling   #Process   #Threads
"Detailed breakdown of RR, SJF, and FCFS algorithms..."
👍 89   👎 120   💬 0
👤 Prof. Chandran
📅 Fall 2023

E2   ECE1002   NOTES   QS: 95
Digital Logic Design - Karnaugh Maps
#K-Map   #Boolean Algebra
#Logic Gates
"Simplified guide to solving 4-variable and 5-..."
👍 200   👎 450   💬 0
👤 Dr. Srinivasan
📅 Winter 2023

A2   CSE4001   NOTES   QS: 91
Compiler Design - Parser Construction
#Parsing   #LL(1)   #LR(0)
"Step-by-step guide to constructing parsing..."
👍 75   👎 180   💬 0
👤 Prof. Meera
📅 Winter 2024

C1   CSE2004   CHEATSHEET   QS: 93

Why This Matters:

Walk into any library during exam week. You'll see students frantically making notes from scratch, asking friends for "that one good formula sheet," or spending hours searching through disorganized WhatsApp groups. Meanwhile, three slots away, someone has already created exactly what they need.

The core issues:

- **Information Silos:** Slots create natural boundaries. A B1 student and G2 student taking the same course will likely never interact. Different class timings mean zero social overlap, so knowledge sharing doesn't happen organically.
- **WhatsApp Chaos:** Group chats are slot-specific and chronologically organized. Finding that PDF someone shared three weeks ago means scrolling through hundreds of messages. There's no quality control, no organization by topic, and resources disappear when people leave groups.
- **Wasted Effort:** Every sem, hundreds of students create similar resources independently. Someone makes handwritten notes for Chp 4. Someone else types them up. A third person creates a question bank. None of them know the others exist. It's parallel work with zero collaboration.
- **Quality Uncertainty:** When you do find resources, you have no idea if they're any good. Are these notes comprehensive? Did the person actually understand the material? Are there errors? You only find out after investing time to review them.
- **Discovery Gap:** Even motivated students who want to share their work don't have a good platform. Uploading to Google Drive and sharing a link in one WhatsApp group reaches maybe 60 people. UniArchives could reach 600.

> ✎ **Impact quantified**
>
> Let's be conservative. If a student spends 6 hours making notes for one course, and there are 8 parallel slots with 60 students each; that's 2,880 hours of duplicated effort per course per sem. Multiply by 6 courses and you're looking at **over 17,000 student-hours wasted** on redundant work. This isn't a minor inconvenience; it's a massive inefficiency in how knowledge flows through a uni.

The Solution: What We're Building

UniArchives is a structured marketplace for academic resources with three core functions: organized discovery, quality signals, and cross-slot visibility.

Core User Experience

- **For Contributors:** You've just finished making excellent notes for BMAT202L Unit 3. Instead of letting them sit in your notebook, you:
  1. Take photos or upload your PDF.
  2. Tag it: Course (BMAT202L), Slot (B1), Topics (Hypothesis Testing), Type (Handwritten Notes).
  3. Add context: "Covers Prof. Sharma's lectures from Week 5-6, includes derivations."
  4. **Publish.**
     Your notes are now discoverable by 500+ students across all slots. As people use them and upvote, you earn reputation points.
- **For Searchers:** CAT-1 is in five days. You need resources for Unit 3. You:
  1. Search: "BMAT202L Unit 3".
  2. Filter: Show me notes from B1, B2, G2 slots (same prof as your section).
  3. Sort by: Quality rating.
  4. Preview: See the first page, check ratings and comments.
  5. **Download:** Three highly-rated resources in 60 seconds.

The Three Pillars

1. Structured Organization

Every resource is tagged across multiple dimensions:

- **Course Code:** BMAT202L, BCSE101L, MECE2002.

- **Slot Identifier:** B1, B2, D1, F2, G1, G2 (for discovering parallel sections).
- **Topics:** Granular breakdown; not just "Unit 3" but "Hypothesis Testing, t-tests, Chi-Square."
- **Resource Type:** Notes, Question Banks, Formula Sheets, Lab Reports, Assignment Solutions (past sem only).
- **Sem/Year:** 2024-25 Winter, 2023-24 Fall.
- **Prof:** (Optional) For courses where different profs have different styles.

2. Quality Signals

- **Upvote/Downvote System:** Reddit-style community voting. Resources with 47 upvotes and 2 downvotes are probably solid.
- **Peer Reviews:** Text comments like "This saved my CAT-1" or "Missing derivations for theorem 4.2."
- **Completeness Tags:** Contributors self-report (and community verifies) what percentage of syllabus is covered.
- **Verified Contributors:** Students who consistently upload quality material get badges; their future uploads start with higher trust.
- **Usage Stats:** "Downloaded by 127 students, 89% found it helpful."

3. Cross-Slot Discovery

This is the breakthrough feature. Traditional sharing is slot-bound. UniArchives shows you resources from all parallel sections.

> 👍 **Tip**
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> **Visual interface shows:** "Your slot (G2) has 12 resources for this course. But B1 has 23 resources with higher average ratings. Want to see what they have?"

Features

Feature	Description
Syllabus Heatmap	A grid showing where the ecosystem is strong (Green) and where it needs contributions (Red) per topic/type.
Slot Comparison	Bar charts showing total resources and average quality per slot; creating healthy competition.
Exam Trending	Tracks which mats are being downloaded most as CATs approach and what topics students are focusing on.
Gamification	Reputation Points, badges like "Founding Contributor," and leaderboards to incentivize altruism.

Implementation

Architecture Overview:

- **Frontend**: React + Tailwind CSS; Chart.js for heatmaps; PDF.js for in-browser previews.
- **Backend**: Node.js + Express; MongoDB for flexible tagging and metadata.
- **Storage**: Firebase Storage / AWS S3 for the actual files.
- **Auth**: JWT for secure student logins.

> 💬 Quote
>
> **Database Logic**: A simple, queryable, and scalable schema. For example, a search query can instantly find "all notes for BMAT202L, topics include 'probability', uploaded in 2024-25 Winter, from slots B1 or G2, sorted by upvotes descending."

AI Integration Scope

We're pragmatic about AI; it's a tool, not magic.

1. **Assisted Tagging:** Run OCR on PDFs/images to suggest course codes and topics automatically.
2. **Quality Pre-Check:** Before publishing, run basic checks to see if an image is blurry or illegible and flag it for the user.
3. **Duplicate Detection:** Compare content similarity (>80%) to prevent database bloat and encourage original contributions.
4. **Smart Recommendations:** Collaborative filtering; "Students who viewed this also found these helpful."

▓ Phase 1: MVP (Hackathon Build)

Goal: Demonstrate core value proposition. Show that cross-slot discovery works.

- User auth (email signup).
- Upload resources with manual tagging.
- Browse/search by course code, slot, topic.
- Upvote/downvote system.
- Simple profile showing reputation.

Challenges & Mitigation

- **Cold Start Problem:** Pre-seed with 50 high-quality resources; incentivize first 100 uploaders with unique badges.
- **Quality Control:** Community moderation via voting and reporting; AI pre-checks for obvious issues.
- **Engagement:** Email reminders during exam weeks and weekly digests showing new resources for your specific courses.

To Conclude

UniArchives transforms how students share and discover academic resources. By breaking down slot-based silos, implementing quality signals, and creating visual tools for resource discovery, we make collaborative learning effortless.

The technical implementation is realistic and achievable. The problem is real and painful. The solution is elegant and scalable. **Most importantly: this is something we'd use ourselves. And if we need it, 10,000 other undergrads probably do too.**