

Katlego

Mashego

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Human Computer  
Interaction POE

PT3(Final)

## Description of the website.

- For my website, I have designed and built a past paper script reviewer. The platform allows high-achieving students to submit their high-scoring exam and assignment scripts to assist others. Contributors could add descriptions and tips to their posts. I structured the site by faculty and course, and included a 'Chathub' feature which is the main interaction system can connect and request help on specific topics. The site also featured an archive of high-mark papers with comment breakdowns. To support struggling students, I implemented a system where they could post their own scripts for personalized, free assistance from the community and for encouragement I have implemented a reward system to get users more involved in the system. Finally, I integrated a chatbot assistant to serve as a shortcut for summarizing topics and navigating the system.

## Usability Goals of the MethodHub

- To ensure the websites effectiveness, I have designed and implemented a fully functional Search Hub. This feature was created to correctly direct students to their specific faculty or course page.

I also integrated a tip tag system, allowing users to find relevant study tips and methods through intuitive hashtags like #ProgExam.

Finally, I built an accurate filtering system. This filter allows students to verify and narrow down results, ensuring they only find valid and topically relevant scripts.

As seen here in this screenshot I have selected the applied math section showing relevant topics to what the user wants showing the systems effectiveness in narrowing down search results making users satisfied with the results.

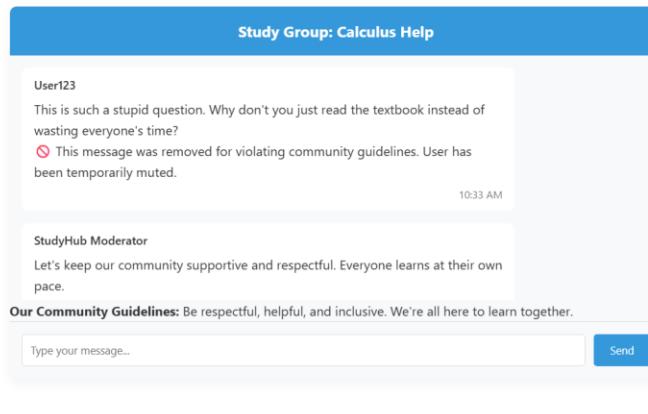
The screenshot shows the StudyHub application interface. At the top, there is a navigation bar with links for Home, Resources, Chat Hub, and Rewards. On the right side of the nav bar are buttons for Login, Sign Up, and a user profile icon labeled 'katz'. Below the nav bar, the title 'University Module Resources' is displayed. A search bar contains the query 'algorithms', and a 'Search' button is to its right. Below the search bar, a row of category filters includes 'All Modules', 'LLB Law', 'BSc Sciences', 'Engineering', 'Applied Math' (which is highlighted in blue), and 'Business'. The main content area displays three resource cards. The first card is titled 'Differential Equations Guide' and is categorized under 'Applied Mathematics'. It has 245 downloads. The second card is titled 'Numerical Methods Algorithms' and also falls under 'Applied Mathematics' with 132 downloads. The third card is titled 'My Calculus Journey - Overcoming Challenges' and is categorized under 'First Year Math' with 89 downloads. Each card includes a small profile picture of the contributor, their name, their status (e.g., 'Top Contributor' or 'Verified Contributor'), a brief description of the resource, and a rating section with stars and percentages. A 'View Resource' button is at the bottom of each card.

Seen Later the application can filter for specific topics such as algorithms to make the application as convenient and as effective for different users:

The screenshot shows the StudyHub website interface. At the top, there is a navigation bar with links for Home, Resources, Chat Hub, and Rewards. On the right side of the top bar are buttons for Login, Sign Up, and a user profile icon labeled 'katz'. Below the top bar, the page title 'University Module Resources' is displayed. A search bar contains the text 'algorithms', and a blue 'Search' button is to its right. Below the search bar is a horizontal menu with categories: All Modules, LLB Law, BSc Sciences, Engineering, Applied Math (which is highlighted in blue), and Business. The main content area features a card for a resource titled 'Numerical Methods Algorithms' by Robert Green. The card includes a small profile picture of Robert Green, the title 'Numerical Methods Algorithms', the category 'Applied Mathematics', the download count 'Downloads: 132', and a brief description: 'Implementation of key numerical methods with code examples in Python.' Below the description, it says 'Verified Contributor'. The card also shows a rating of '4.5' and '89%' (likely upvotes or popularity). A blue 'View Resource' button is at the bottom of the card.

- =====
- To ensure a safe and productive environment, I implemented a real-time content moderation filter to automatically remove harmful comments from the chat and discussion hubs. This was designed to maintain a civil space where every learner can reliably find the assistance they are looking for, whether through peer-to-peer interaction or the integrated chatbot assistant.
  
  - Below is an example of how the application filters bad language used in the open chat hub to ensure the chat environment remains user friendly and users feel welcome regardless of the academic questions they may ask:

## Chat Hub - Connect with Peers



The screenshot shows a chat interface for a "Study Group: Calculus Help". A message from "User123" is displayed, stating: "This is such a stupid question. Why don't you just read the textbook instead of wasting everyone's time? 🚫 This message was removed for violating community guidelines. User has been temporarily muted." Below it, a message from "StudyHub Moderator" reads: "Let's keep our community supportive and respectful. Everyone learns at their own pace." At the bottom, there is a text input field with placeholder text "Type your message..." and a blue "Send" button.

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- **Is the web application efficient?:** This was implemented by ensuring the application performs its functions to the fullest extent while being easy for users to adopt. This was achieved by implementing easy-to-use shortcuts that minimize navigation, alongside a precise search function that delivers accurate results. Furthermore, I included an interactive guide for first-time users to clearly demonstrate each function, ensuring the guide itself was straightforward and easy to follow.

- For example in the application in my hero section I have included a short demonstration of instructions on how the application functions for new users to get used to the application quickly, and for quick navigation the navbar is simple and clear to users on what purpose each link serves, I have also updated the website to include a help section with descriptions on how the website functions if users are still confused :

### How StudyHub Works



#### Study Resources

Access notes, scripts, and study guides from students at all levels.



#### Chat Hub

Connect with peers, ask questions, and get real-time help with difficult concepts.



#### Reward System

Earn points and badges for contributing resources and helping other students.



#### Inclusive Community

All students welcome - share your struggles  
and encourage others to learn

- Is the application safe to use?:

This was addressed by implementing multiple layers of protection to ensure users can use the application without negative consequences. This was achieved by implementing username-based profiles and providing an option to automatically blur personal names on submitted scripts, ensuring user anonymity. Furthermore, I integrated clear, mandatory policy agreements stating that all content is for referential use only and outlining the legal dangers of plagiarism. Lastly, I implemented confirmation dialogs for critical actions like script deletion to prevent accidental data loss.

- An example of the applications safety measures can be seen where I have assigned a username such as Katz for myself to make it difficult to track down my real name and for user awareness of the dangers of plagiarism i have added warning tags to make users aware of

## plagiarism:

The screenshot shows a web page from StudyHub. At the top, there's a navigation bar with links for Home, Resources, Chat Hub, and Rewards, along with Login, Sign Up, and a user profile icon for 'katz'. Below the navigation, there's a 'Back to Resources' link. A yellow warning icon with an exclamation mark is followed by the heading 'Academic Integrity Notice'. The text states: 'This resource is for reference and study purposes only. Please use these materials responsibly and maintain academic integrity in your work.' It then lists four bullet points: 'DO NOT copy content directly', 'DO use these materials to understand concepts and improve your learning', 'DO cite properly if you reference ideas from these resources', and 'DO create your own work based on your understanding'. A note below says: 'Remember: Your university has strict policies against plagiarism. Always submit original work that represents your own understanding and effort.' Underneath this, there's a section titled 'Contract Law - Complete Case Analysis'. It includes a thumbnail for 'LLB Year 2 - Contract Law', a download count of 'Downloads: 187', and a user profile for 'Emma Johnson' (Top Contributor). A note at the bottom of this section reads: 'Study Aid Only: This case analysis is for understanding legal principles. Do not copy this content for your essays or assignments.'

## Desirable aspects of a user experience

StudyHub was designed from the ground up to be an engaging and rewarding ecosystem. I have built a vibrant and interactive environment to boost student growth and collaboration. The experience has been designed to be satisfying, motivating users not only to find helpful strategies but also to contribute their own knowledge and engage socially within a community of peers.

To make academic study more enjoyable, I have integrated features that promote active discussions and the discovery of new study methods. By supporting creative expression and knowledge sharing, the application makes learning exciting. Ultimately, the platform transforms the often solitary pursuit of high achievement into a pleasurable and socially connected journey, ensuring the process of mastering a subject is as emotionally fulfilling as the outcome.

- The visual design of StudyHub was carefully crafted to be professionally trustworthy yet vibrantly appealing to a youth audience, ensuring engagement without compromising on clarity. A refined color scheme of deep navy and clean white was implemented to build a credible academic foundation, accented with energetic teal and accessible orange in buttons and icons to create a dynamic and motivating environment.

To ensure a clear and modern layout, I designed the interface using a consistent card-based system. Each module, from script previews to chat hubs, is housed within its own distinct card with soft shadows and rounded edges, separating information and providing a structured, uncluttered experience that is intuitive to navigate.

This professional yet approachable design actively encourages all users whether they are high-achievers, newcomers, or those seeking assistance to confidently contribute and seek the academic help they need, reinforcing the platform's identity as a premier and supportive academic community :

The screenshot shows the homepage of StudyHub. At the top, there is a navigation bar with links for Home, Resources, Chat Hub, and Rewards. On the right side of the nav bar are buttons for Login, Sign Up, and a user profile icon labeled 'katz'. The main header features the text 'Excel in Your Studies with StudyHub' in large, bold, white font. Below the header, a subtext reads 'Access study resources, connect with top students, and get personalized advice to overcome academic challenges.' A blue 'Get Started Today' button is positioned below this text. The bottom section has a light blue background with the heading 'Everyone Has Something to Share!' in bold. A descriptive paragraph follows, stating 'Whether you're a top student or just starting out, your perspective matters. Share your notes, ask questions, and help others while building your academic reputation. Every contribution helps our community grow stronger.' A green 'Share Your Knowledge' button is located at the bottom of this section.

**Earn Rewards for Contributing****Top Contributor**

Reach the highest tier by consistently providing high-quality resources and helpful responses.

**Point System**

Earn points for every resource you share and every question you answer correctly.

**Redeem Rewards**

Exchange your points for gift cards, study materials, or even tuition discounts.

**Badges & Recognition**

Show off your achievements with special badges on your profile.

**Everyone Can Contribute!**

You don't need to be a top student to share valuable insights. Even sharing your struggles and how you overcame them can help others.

**Start Contributing Today**

Search for modules, topics, or keywords...

Search

All Modules

LLB Law

BSc Sciences

Engineering

Applied Math

Business

**Contract Law - Complete Case Analysis**

LLB Year 2

Downloads: 187

 Emma Johnson  
Top Contributor

Detailed analysis of key contract law cases with summaries and application examples.

★ 4.9 🔥 97%

**View Resource****Criminal Law Revision Notes**

LLB Year 1

Downloads: 234

 David Wilson  
Top Contributor

Comprehensive revision notes covering all key criminal law principles and cases.

★ 4.8 🔥 95%

**View Resource****Organic Chemistry Mechanisms**

BSc Chemistry

Downloads: 198

 Sarah Miller  
Top Contributor

Detailed flowchart of all major organic chemistry reactions with mechanisms.

★ 4.9 🔥 96%

**View Resource****Genetics Problem Solutions**

BSc Biology

Downloads: 167

 Priya Thompson  
Verified Contributor**Structural Analysis Formulas**

Civil Engineering

Downloads: 176

 Michael Jones  
Top Contributor**Circuit Theory Problem Set**

Electrical Engineering

Downloads: 154

 Amanda Lee  
Verified Contributor**Design Principles**

- Thinking about different aspects of design: I was guided through the development process using core principles of visibility, feedback, and constraints to create an intuitive user experience.

For visibility and feedback, the interface was designed to provide clear, immediate responses to user actions. This was implemented through a system of visual cues, such as displaying a confirmation notification with a checkmark icon upon the successful submission of a script.

Regarding constraints, I implemented structured input requirements to ensure data quality and integrity. This includes enforcing a required file format for all script uploads and making it mandatory for users to select a faculty/course category and add descriptive tags before submission. These constraints guide user behavior to ensure all content is properly categorized and verifiable.

- Do's and Don'ts of design: this principle focuses on the decisions of rules which must be considered when designing. A fundamental "Do" I implemented was maintaining strict visual consistency across the entire application by developing a reusable component library that enforced a uniform theme of colors, typography, and spacing. Furthermore, a key design priority was to proactively prevent user error; to this end, I integrated protective feedback mechanisms, such as a modal dialog that triggers with the warning, "You have unsaved changes. Are you sure you want to leave?" whenever a user attempts to navigate away from an incomplete form, thereby safeguarding their work.

A critical "Don't" that guided the design process was a strict avoidance of overwhelming users with an intimidating or complex interface. To achieve this, I deliberately moved away from a developer-centric approach that relies on command-line syntax or technical prompts. Instead, the interface was built around intuitive, discoverable actions where every function is clearly

represented with descriptive labels and universally recognizable icons, ensuring the platform's capabilities are immediately understandable to all students, regardless of their technical proficiency.

**What and What Not to Provide at the Interface:** As the interface is the user's primary point of interaction, the script viewing screen was designed to present all relevant information clearly, including the script's course, the marks achieved, and the uploader's reputational score to establish reliability. I also focused on the clarity of UI elements by using explicit labeling on buttons and text fields, providing hints such as "Type your question" and "Make a new post" to guide user actions.

Conversely, I carefully considered what to exclude from the immediate interface to prevent clutter. Advanced settings and configuration options were consolidated into a dedicated settings section. Furthermore, the landing page was intentionally designed not to display every post at once; instead, it was limited to showcase the best-rated and most relevant content, with the full archive accessible through specific category filters.

- The application follows the same theme through out of a blue and white tone which is calm and not overwhelming , and if the user is to scroll through the app they will come across a variety of posts made by different users to show all academic topics, lastly to fulfill the needs of design principles the application provides gestures and hints on how to submit and messages in a success page of how the post will be displayed, these are some of the examples of design principles in the application:

engineering

Search

All Modules

LLB Law

BSc Sciences

Engineering

Applied Math

Business

**Contract Law - Complete Case Analysis**

LLB Year 2

Downloads: 187

 Emma Johnson  
Top Contributor

Detailed analysis of key contract law cases with summaries and application examples.

★ 4.9

97%

[View Resource](#)**Criminal Law Revision Notes**

LLB Year 1

Downloads: 234

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[View Resource](#)**Organic Chemistry Mechanisms**

BSc Chemistry

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Downloads: 176

 Michael Jones  
Top Contributor**Circuit Theory Problem Set**

Electrical Engineering

Downloads: 154

 Amanda Lee  
Verified Contributor

// submission form integrity check : this is a dialog example in the below screenshot describing to the user that they acknowledge the work provided and the guidelines.

**Share Your Knowledge**

x

*Help others find your resource by adding relevant keywords***Academic Integrity Agreement**

By submitting this resource, I confirm that:

- This is my original work or I have proper permission to share it
- I understand StudyHub promotes academic integrity
- I will not submit plagiarized content
- My resource follows university guidelines



I agree to the terms above and understand the academic integrity policy

[Cancel](#)[Submit Resource](#)

notes, ask questions, and help others while building your academic reputation. Every contribution helps our community grow stronger.

// Success view of post: this screenshot shows the successful post message dialog for when a user successfully makes a submission post

**StudyHub**

**Share Your Knowledge** ×



**Thank You for Sharing!**

Your resource "kjhg" has been successfully submitted and is now under review. Our team will verify the content quality and academic integrity before publishing.

**What happens next?**

[Share Another Resource](#) [Return to Browsing](#)

**How StudyHub Works**

Interaction Types

- Conversing – The primary interaction type implemented in the application is conversing, which facilitates a dialog exchange between users and the platform. This was central to two key features: enabling real-time, peer-to-peer discussion within the Chathub and providing on-demand assistance through the integrated chatbot assistant.

- Study Hubs chat hub is the main form of peer to peer interaction in the application in this system which plays a major role in the websites functionality I have implemented a chat system where learners can share their thoughts and ask for assistance , I have also integrated a chat filter which will ban and filter out rude or inappropriate messages :

The screenshot shows the StudyHub Chat Hub interface. At the top, there's a navigation bar with 'StudyHub' logo, 'Home', 'Resources', 'Chat Hub', 'Rewards', 'Login', 'Sign Up', and a user profile icon for 'katz'. Below the navigation is a header 'Chat Hub - Connect with Peers' and a specific group header 'Study Group: Calculus Help'. The main area displays a message thread between 'Alex Johnson' and 'You'. Alex Johnson asks if anyone solved problem 15 from the homework and is stuck on the integration part. You respond with a suggestion to use substitution, letting  $u = x^2 + 1$ . The interface includes a text input field at the bottom labeled 'Type your message...' and a 'Send' button. A note at the bottom states 'Our Community Guidelines: Be respectful, helpful, and inclusive. We're all here to learn together.'

## Social Interactions

- StudyHub's collaborative environment extends beyond the real-time Chat Hub for interactions. I have also implemented a dedicated comment section beneath each post to facilitate in-depth discussions and peer reviews of submitted scripts. This allows users to ask clarifying questions, share additional insights, and provide constructive feedback on the material.

Furthermore, to ensure content quality and help users quickly identify the most valuable resources, I integrated a dual-purpose rating system. This system allows the community to rate posts based on both their informativeness and clarity, generating a reliable reputation score for content and contributors alike, as seen in the below screenshot which demonstrates

The review and star rating system :

**Key Case Analysis****Carlill v Carbolic Smoke Ball Co [1893]**

This landmark case established important principles.

Law Assignment Note:

Legal writing requires original analysis and proper citation. Use these case summaries to understand the law, not as content for your submissions.

Resource Reviews

4.8



Based on 127 reviews

**Add Your Review**

Your Rating



Your Review

I Found the above resource very helpful

## Emotional Interaction

- Sense of achievement - in the StudyHub web applications I have integrated the reward system for new and consistent users with messages such as “you’re now a contributor” badge or when a user receives a “helpful” comment they will feel a sense of achievement.
- Journey levels – I have also implemented a journey feature for users to keep track of their stats on the app which might be displayed through levels such as “you’ve helped 20 students”, “answered 10 questions correctly” etc. to imply a sense of achievement.

// Journey profile journal: the below screenshot demonstrates how the user journey has been implemented to keep encouraging users to stay active in the web environment and give the users a sense of accomplishment :

## Your Contributor Journey

Earn rewards and recognition as you help others learn

### Verified Contributor

#### Level 2: Verified Contributor

You've established yourself as a reliable source of knowledge

Progress to Next Tier

2 more quality resources to unlock:

3/5 Resources Shared

Rare Verified Sticker



#### New Contributor

Welcome to the community!

Share 1 resource



#### Quality Reviewer

Your first helpful review

5+ helpful votes



#### Top Contributor

Elite knowledge sharer

Share 10 resources



#### Community Legend

Ultimate achievement

50+ students helped

// Rewards system : A rewards system has also been integrated with a points system that will be used to unlock different rewards in the application, this feature has been implemented with the main purpose of encouraging users to interact and engage with the websites environment, as seen in the screenshot below :

## Next Reward Unlock

Share 2 more quality resources to earn your exclusive Verified Sticker and unlock premium features



#### Verified Sticker

Rare profile badge



#### Priority Support

Faster help responses



#### Advanced Analytics

Track your impact

## Recent Achievements



You shared "Calculus Study Guide"

2 hours ago

+10 pts



Your answer helped 3 students

1 day ago

+15 pts

## Web Content Accessibility and Guidelines(WCAG)

Web content accessibility and guidelines refers to how accessible the web application will be to different users including those with disabilities, to make

sure my application is available to a wide audience of users I have implemented the following into the system:

- for deaf users - I have implemented a subtitle function for users who attach voice notes to explain comments in their scripts or to translate the voice note for users who would struggle to understand the language being spoken.

The screenshot shows a web-based application interface for 'StudyHub'. At the top, there is a navigation bar with links for 'Home', 'Resources', 'Chat Hub', and 'Rewards'. On the right side of the nav bar are 'Login' and 'Sign Up' buttons, followed by a user profile icon labeled 'katz'. Below the navigation bar, a blue header bar displays the text 'Study Group: Calculus Help'. Underneath this, a video player window is open, showing a video titled 'Professor Davis' with a subtitle 'Quick Explanation' and a duration of '1:02'. The video content discusses integration problems and u-substitution. Below the video player, there is a text area with the heading 'Our Community Guidelines: Be respectful, helpful, and inclusive. We're all here to learn together.' At the bottom of the screen, there is a message input field with placeholder text 'Type your message...' and a 'Send' button. To the right of the message input field is a button labeled 'Click to record a voice message (max 3 minutes)' with a microphone icon.

## Reference Guidline

- Norman, D.A. (2013). *The design of everyday things*. Revised and expanded edition. New York: Basic Books.
- Nielsen, J. (1994). 10 usability heuristics for user interface design. Nielsen Norman Group. Available at: <https://www.nngroup.com/articles/ten-usability-heuristics/> (Accessed: 15 October 2024).