

Presentation by Laksh and Dishan

Mother Divine Public School

Problem Statement

Students today are overwhelmed with vast amounts of study material — textbooks, PDFs, class notes, and online resources. Manually reading, summarizing, and creating revision tools like flashcards or quizzes is not only time-consuming but also mentally exhausting. This outdated method of learning often results in students skipping proper revision, missing key points, or feeling unmotivated. In an age of intelligent technology, there's a clear gap in tools that automatically assist in efficient learning and retention.

Key Issues Faced by Students:

- Reading and summarizing long texts takes a lot of time
- Lack of automated revision tools like flashcards and quizzes
- Manual preparation leads to inconsistent understanding
- Revision often happens last minute, causing stress
- Traditional methods are not personalized or interactive

What is **Study**Genius?

StudyGenius is an AI-powered desktop application designed to make studying smarter and faster. It helps students by automatically transforming raw text — such as notes, articles, or PDFs — into structured, interactive learning tools like summaries, flashcards, and quizzes. Powered by advanced Natural Language Processing (NLP) algorithms, StudyGenius saves time, boosts understanding, and makes revision more engaging. It's like having a personal tutor that reads, analyzes, and prepares study material for you — instantly.

Key Highlights:

- Converts PDFs and TXT files into summaries, flashcards, and quizzes
- Uses Al algorithms to understand and process text
- Offers multiple summarization techniques based on content type
- Creates interactive learning materials automatically
- Designed for students of all levels to learn more in less time

Core Functionalities

Smart Text Extraction

Extracts clean, readable content from PDF and TXT files

AI-Powered Summarization

Uses 5 advanced algorithms (TextRank, LSA, etc.) to generate summaries

Flashcard Generation

Creates Q&A pairs, keyword definitions, and fill-in-the-blank flashcards

Interactive Quizzes

Auto-generates multiple-choice, true/false, and blank-fill questions

Study Analytics

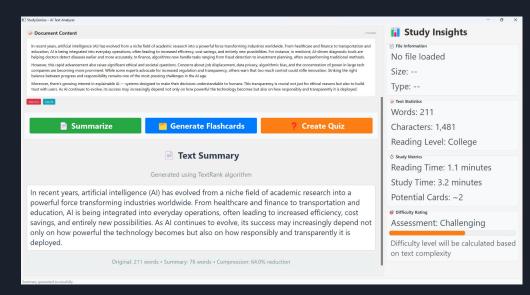
Shows reading difficulty, word count, and time needed to study

User-Friendly GUI

Clean interface built with PyQt5 for easy navigation and use

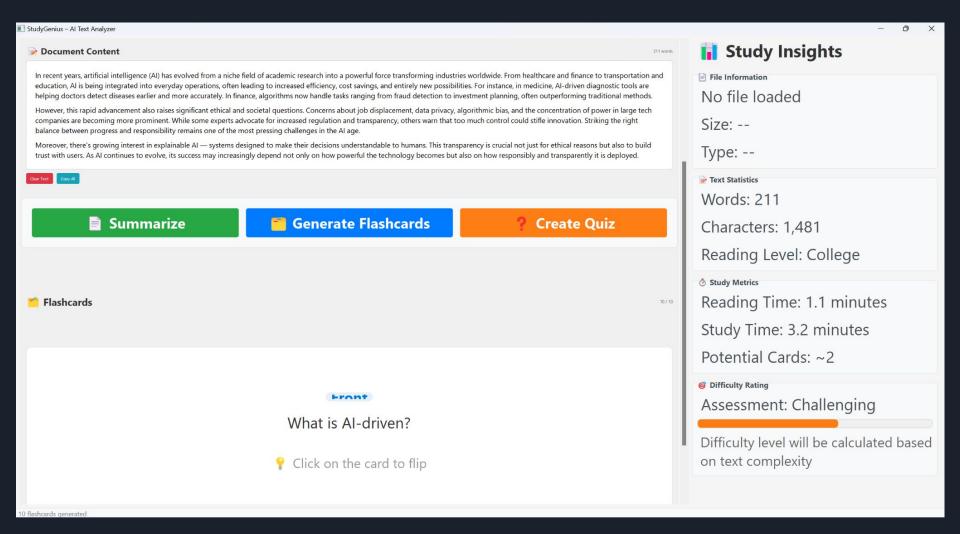
Summarization

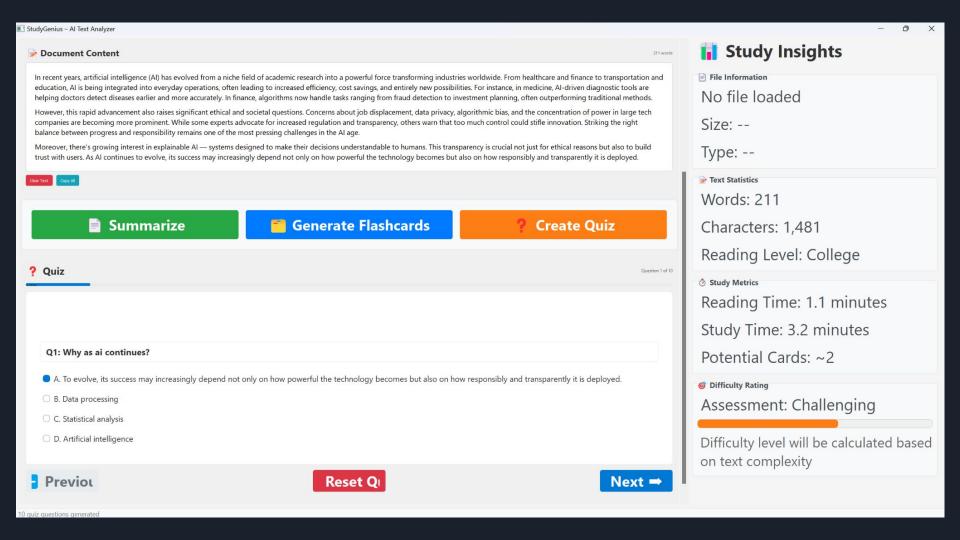
StudyGenius allows you to upload any document — like a textbook chapter or class notes — and automatically gives you a short, easy-to-read summary. This helps students revise faster without reading the full text. You can even control how short or long the summary should be, based on your preference.



Flashcard & Quiz

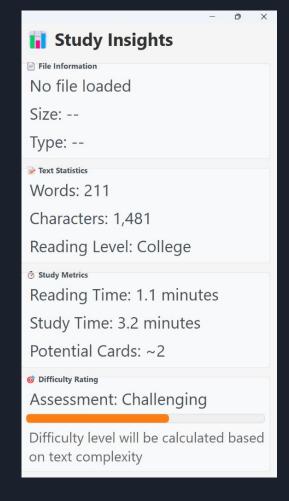
StudyGenius doesn't just summarize — it also turns your study material into interactive flashcards and quizzes. This makes revision more engaging and helps you test your knowledge instantly. You don't have to write questions by hand — the app does it all for you automatically.





Analytics

StudyGenius also helps students plan their studies better by giving useful analytics. It tells you how long a document might take to read, how difficult it is, and how much content it contains. This helps in managing time and knowing what to focus on first.

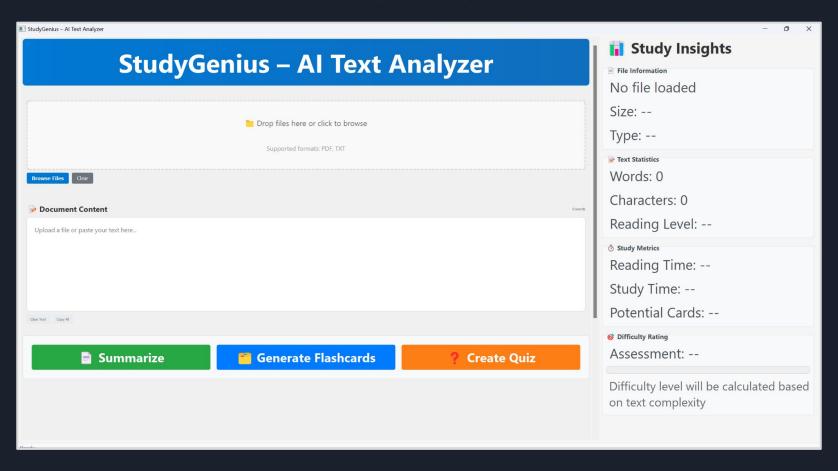


How It Works Internally?

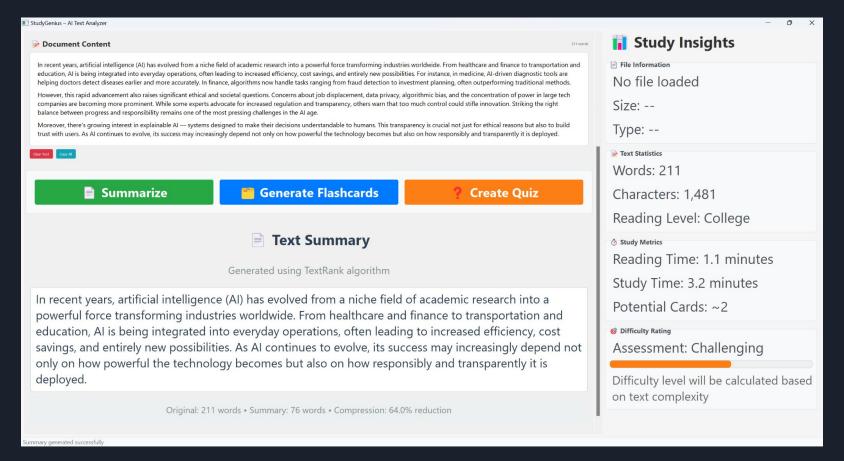
StudyGenius is built using Python and uses PyQt5 to create a clean and user-friendly desktop interface. When a document is uploaded, it goes through a text extraction module that pulls clean text from PDF or TXT files. This text is then processed using various Natural Language Processing (NLP) algorithms to generate summaries, flashcards, and quizzes. Behind the scenes, the app includes different modules — one for summarization, one for flashcard creation, and one for quiz generation — all working together like a pipeline. The system intelligently selects the best algorithm based on the content and uses libraries like NLTK, Sumy, and pdfplumber to perform tasks like keyword extraction, sentence ranking, and question creation.

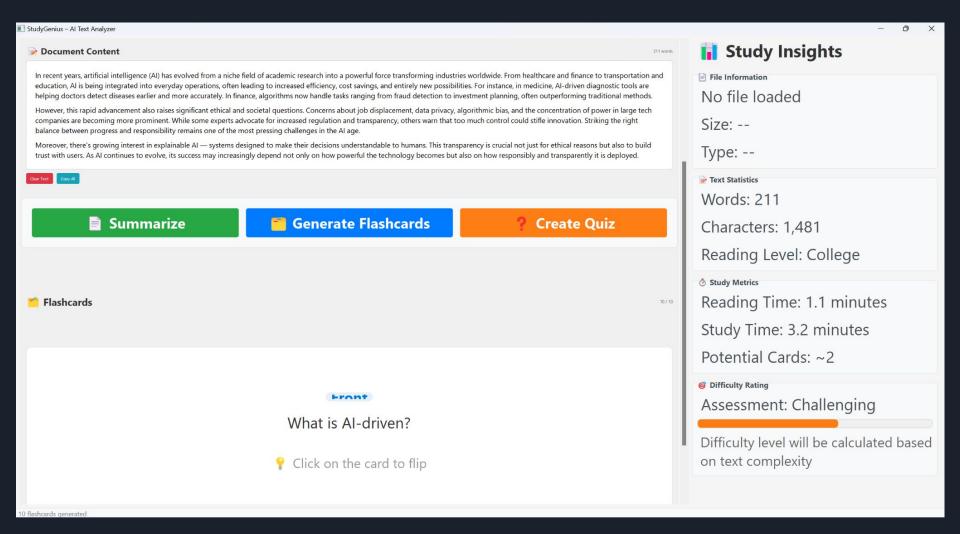
Screenshots

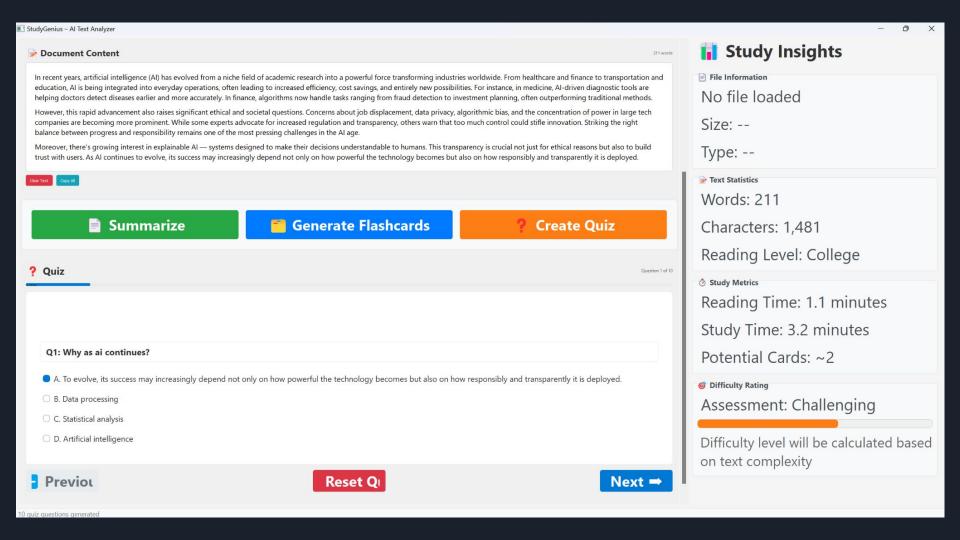
Dashboard



Summary







Conclusion

StudyGenius is more than just a tool — it's a complete Al-powered study assistant that helps students save time, revise better, and learn smarter. By combining text summarization, flashcard generation, quiz creation, and study analytics into one application, it transforms how students interact with their study material. Whether it's preparing for exams or revising last-minute, StudyGenius makes the process faster, easier, and more effective. Our mission is simple: to turn information into understanding — instantly.

Thank You!

Presentation by Laksh and Dishan

Mother Divine Public School