

Gaano kabilis pwede tumakbo ang
kotse ko sa subdivision at ano ang
penalties kapag sumobra dito?



UNIVERSITY OF THE PHILIPPINES DILIMAN
AI 299: CAPSTONE PROJECT IN AI

Enhancing Access to Government Documents: A Retrieval-Augmented Generation Framework for Quezon City Ordinances and Resolutions

Presenter: Alister Marc Domilies
Adviser: Miguel Francisco Remolona, PhD

May 30, 2025

The Problem

Executive Summary

Search Field

Document No.

Link to Scanned Document

Source: <https://quezoncity.gov.ph/public-notices/ordinance/>

22nd City Council

21st City Council

20th City Council

19th City Council

18th City Council

17th City Council

SP-3357, S-2024: ORDINANCE GRANTING ADDITIONAL FRANCHISE TO ONE (1) PETITIONER FROM BALARA FILTERS TRICYCLE OPERATORS AND DRIVERS ASSOCIATIONS, INC. (BAFTODA) TO OPERATE A MOTORIZED TRICYCLE-FOR-HIRE WITHIN THEIR DESIGNATED ZONES/ROUTES AND AUTHORIZING THEIR SPECIFIED ROUTE MEASURED CAPACITIES (RMCs) THEREBY PARTIALLY LIFTING QUEZON CITY ORDINANCE NO. SP-1479, S-2005, OTHERWISE KNOWN AS THE "ORDINANCE DECLARING MORATORIUM IN THE FRANCHISE OF PUBLIC UTILITY TRICYCLES IN QUEZON CITY AND FOR OTHER PURPOSES"

SP-3372, S-2024: AN ORDINANCE ACCREDITING THE 128 NON-GOVERNMENTAL ORGANIZATIONS, PEOPLE'S ORGANIZATIONS, AND OTHER CIVIL SOCIETY ORGANIZATIONS PURSUANT TO THE PROVISIONS OF REPUBLIC ACT NO. 7160, OTHERWISE KNOWN AS THE LOCAL GOVERNMENT CODE OF 1991, AND ITS IMPLEMENTING RULES AND REGULATIONS, IN RELATION TO MEMORANDUM CIRCULAR NO. 2022-083 OF THE DEPARTMENT OF THE INTERIOR AND LOCAL GOVERNMENT (DILG)

SP-3371, S-2024: AN ORDINANCE DECLARING THE BARANGAY AND SANGGUNIANG KABATAAN FACEBOOK ACCOUNTS/PAGES AND OTHER SOCIAL MEDIA ACCOUNT/S, BEARING THE NAME OF THE BARANGAY AND SANGGUNIANG KABATAAN AND OFFICIALLY BEING USED AS COMMUNICATION PLATFORMS, AS BARANGAY AND SANGGUNIANG KABATAAN PROPERTIES AND TRANSFERRING OWNERSHIP TO SUCCESSIVE BARANGAY AND SANGGUNIANG KABATAAN ADMINISTRATIONS FOR THE EFFECTIVE MANAGEMENT AND CONTINUITY OF COMMUNITY ENGAGEMENT AND INFORMATION DISSEMINATION

Sample of Scanned Ordinance

Republic of the Philippines
QUEZON CITY COUNCIL
Quezon City
22nd City Council

PO22CC-435

100th Regular Session

ORDINANCE NO. SP- 3357, S-2024

AN ORDINANCE GRANTING ADDITIONAL FRANCHISE TO ONE (1) PETITIONER FROM BALARA FILTERS TRICYCLE OPERATORS AND DRIVERS ASSOCIATIONS, INC. (BAFTODA) TO OPERATE A MOTORIZED TRICYCLE-FOR-HIRE WITHIN THEIR DESIGNATED ZONES/ROUTES AND AUTHORIZING THEIR SPECIFIED ROUTE MEASURED CAPACITIES (RMCs) THEREBY PARTIALLY LIFTING QUEZON CITY ORDINANCE NO. SP-1479, S-2005, OTHERWISE KNOWN AS THE "ORDINANCE DECLARING MORATORIUM IN THE FRANCHISE OF PUBLIC UTILITY TRICYCLES IN QUEZON CITY AND FOR OTHER PURPOSES"

Introduced by Councilors RAM V. MEDALLA, KATE GALANG-COSETENG, ALBERT ALVIN "Chuckie" L. ANTONIO III, WENCEROM BENEDICT C. LAGUMBAY, GELEEN "Dok G" G. LUMBAD and DON S. DE LEON

Co-Introduced by Councilors Bernard R. Herrera, Tany Joe "TJ" L. Calalay, Dorothy A. Delarmente, M.D., Joseph P. Juico, Nikki V. Crisologo, Charm M. Ferrer, Candy A. Medina, Aly Medalla, Dave C. Valmocina, Tatay Rannie Z. Ludovica, Godofredo T. Liban II, Atty. Anton L. Reyes, Edgar "Egay" G. Yap, Imee A. Rillo, Raquel S. Malañgen, Irene R. Belmonte, Nanette Castelo-Daza, Marra C. Suntay, Joseph Joe Visaya, Alfred Vargas, MPA, Shaira "Shay" L. Liban, Aiko S. Melendez, Mutya Castelo, Maria Eleanor "Doc Ellie" R. Juan, O.D., Kristine Alexia R. Matias, RN, Eric Z. Medina, Emmanuel Banjo A. Pilar, Vito Sotto Generoso, Victor "Vic" Bernardo, Jose Maria M. Rodriguez and Jhon Angelli "Sami" C. Neri

WHEREAS, in 2005, the Quezon City Council passed Quezon City Ordinance No. SP-1479, S-2005 entitled "An Ordinance declaring a Moratorium in the Franchise of Public Utility Tricycles in Quezon City and for other purposes" (hereinafter referred to as the Moratorium Ordinance, for brevity). The passage of the said Moratorium Ordinance was due to the proliferation of tricycles in practically all streets and roads of Quezon City, encroaching even the main thoroughfares, congesting the road network and complicating further the already complex traffic situation of the City;

9

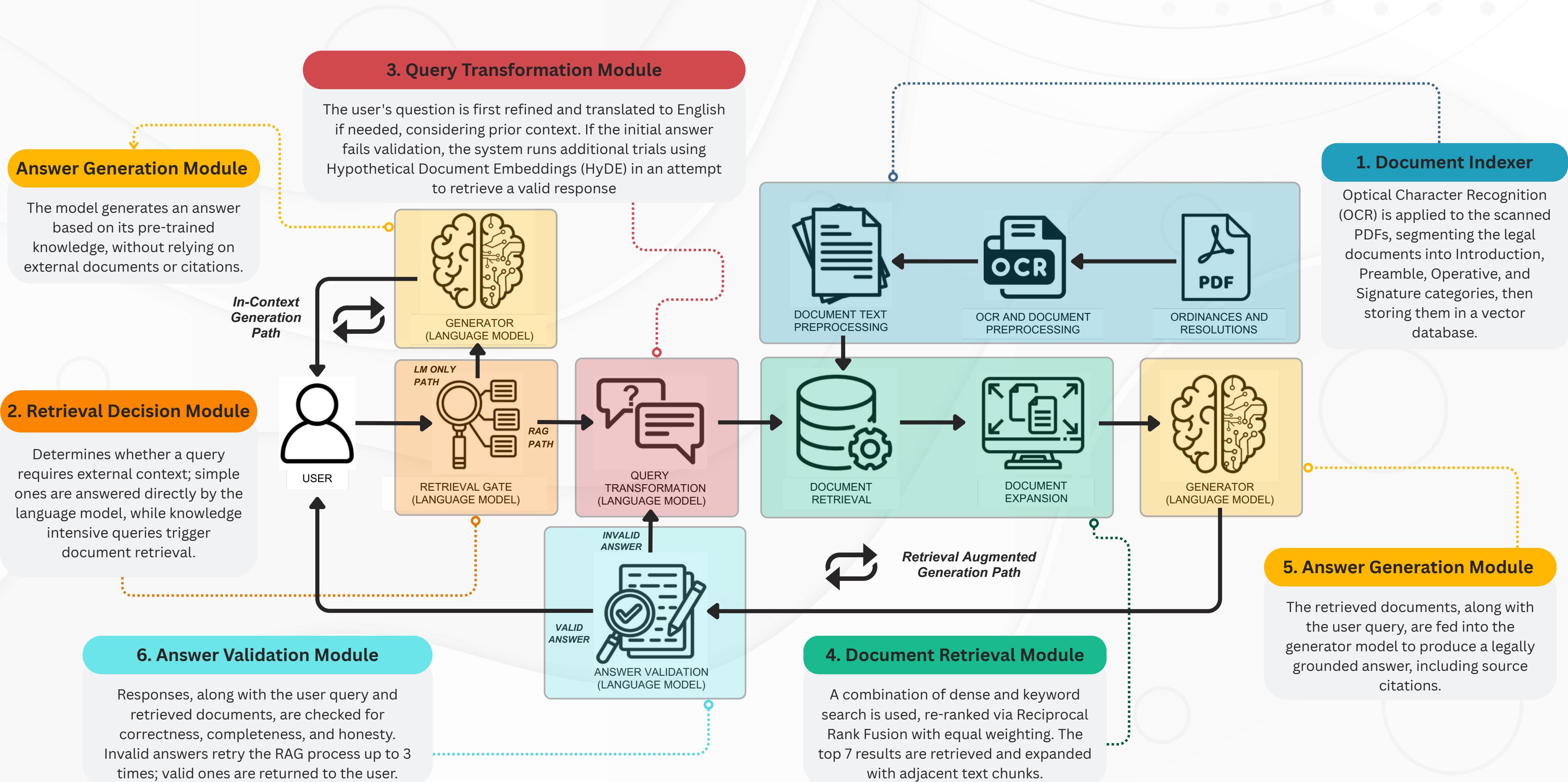
The Solution



An intelligent chatbot that:

- Understands natural language
- Retrieves the most relevant legal texts
- Generates context-aware answers

Architecture of Retrieval-Augmented Generation (RAG) Chatbot



Document Indexer Module



1. Document Indexer

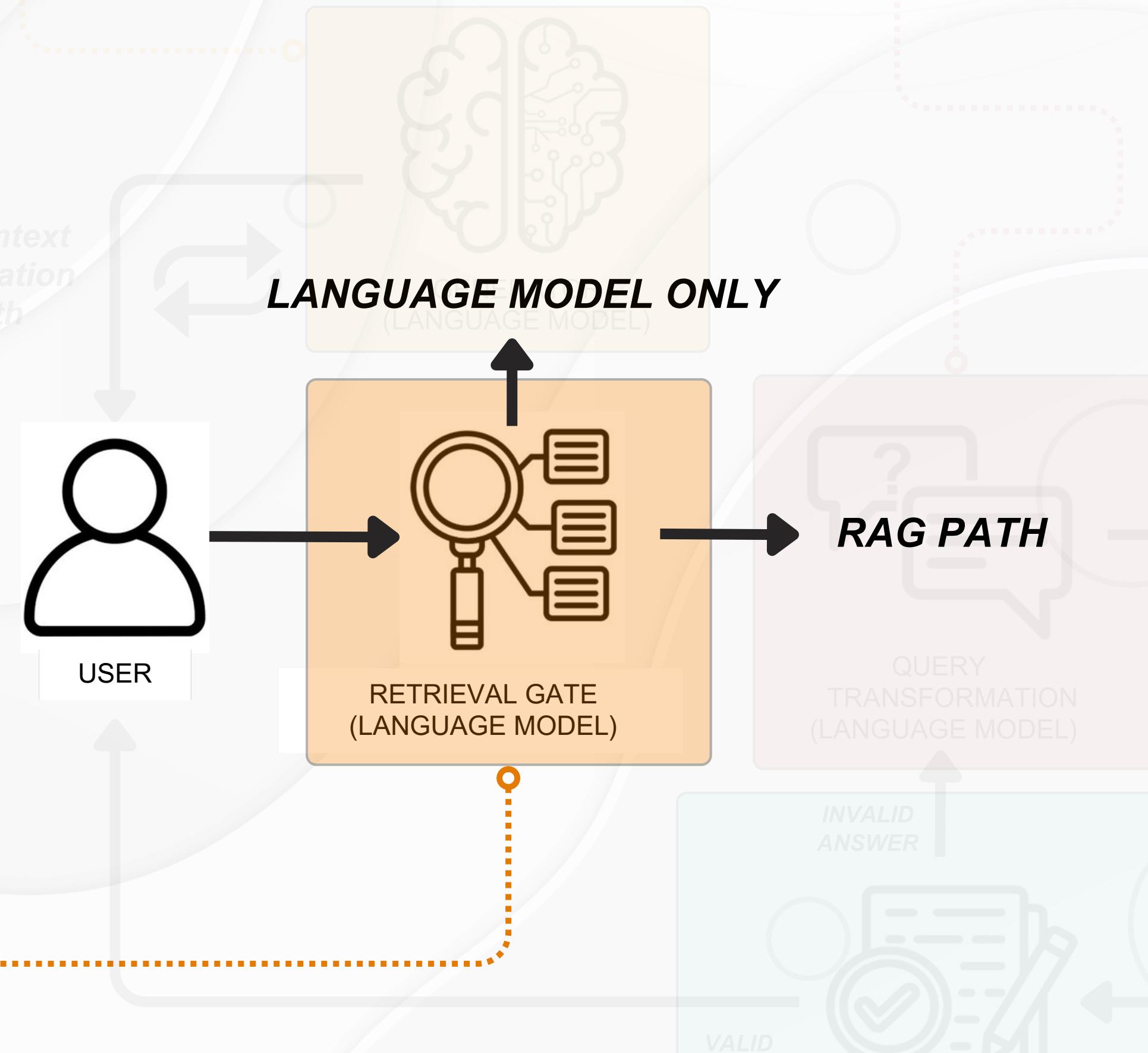
Optical Character Recognition (OCR) is applied to the scanned PDFs, segmenting the legal documents into Introduction, Preamble, Operative, and Signature categories, then storing them in a vector database.

Retrieval Decision Module

The model generates an answer based on its pre-trained knowledge, without relying on external documents or citations.

2. Retrieval Decision Module

Determines whether a query requires external context; simple ones are answered directly by the language model, while knowledge intensive queries trigger document retrieval.



Query Transformation Module

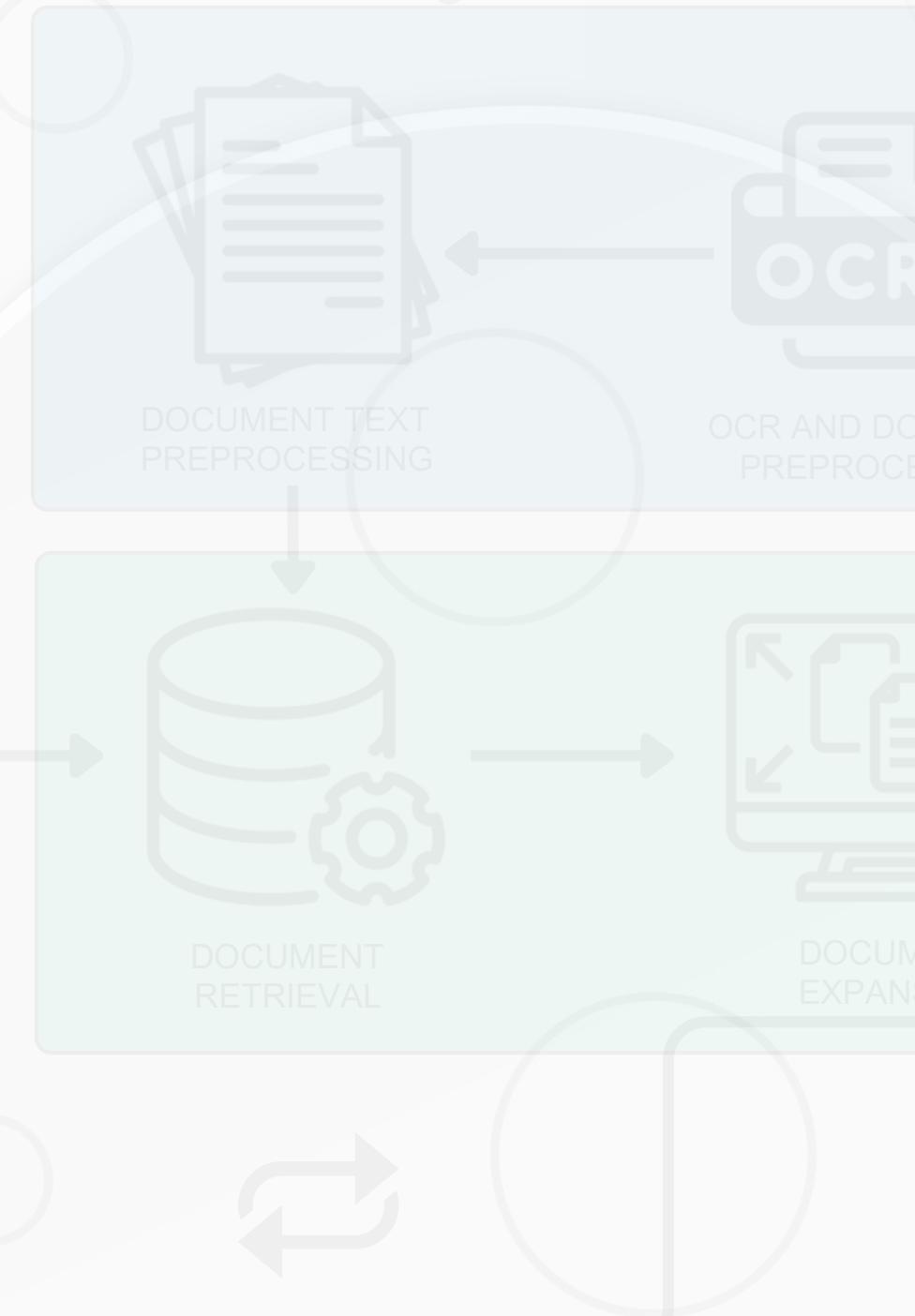
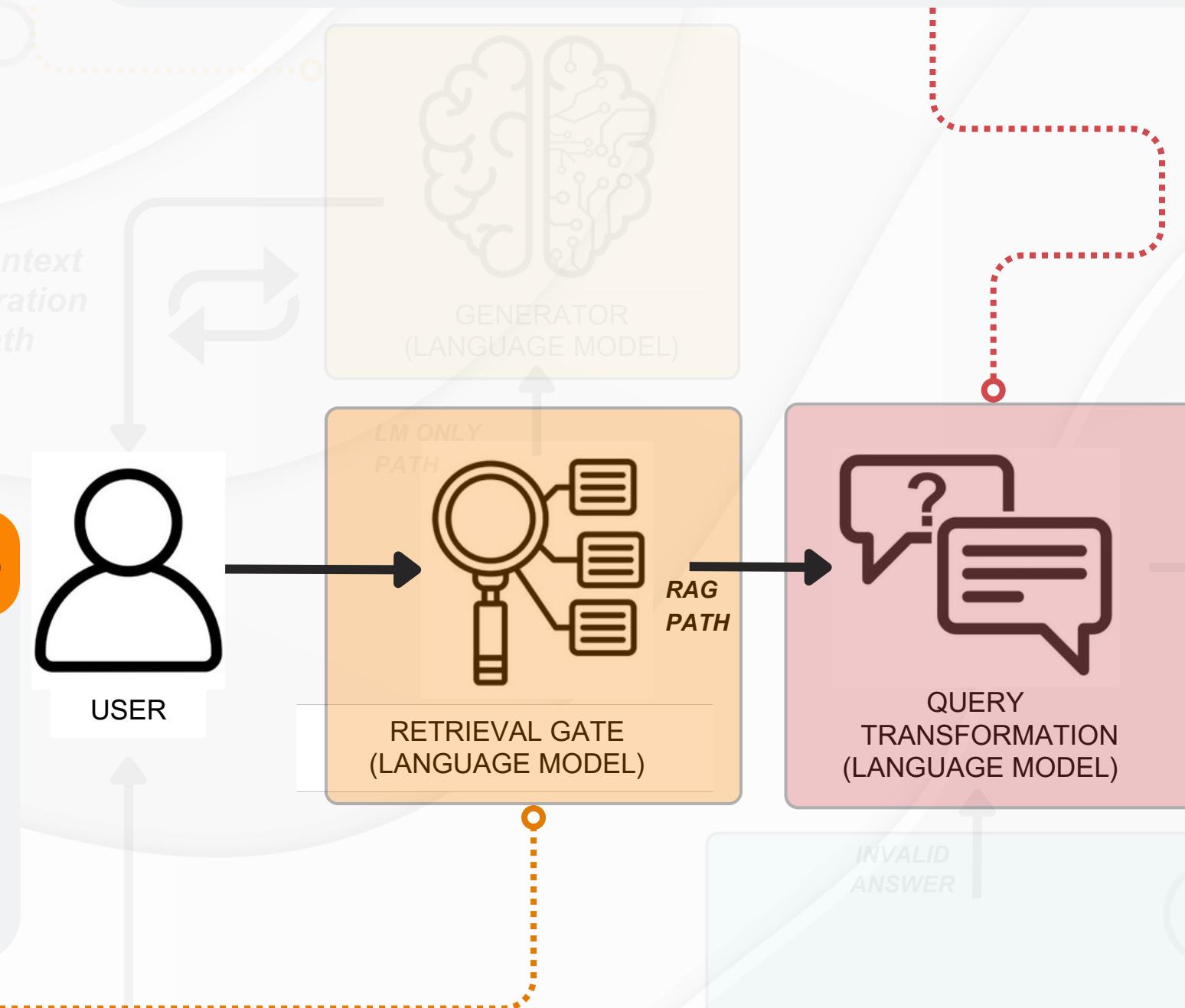
3. Query Transformation Module

The user's question is first refined and translated to English if needed, considering prior context. If the initial answer fails validation, the system runs additional trials using Hypothetical Document Embeddings (HyDE) in an attempt to retrieve a valid response

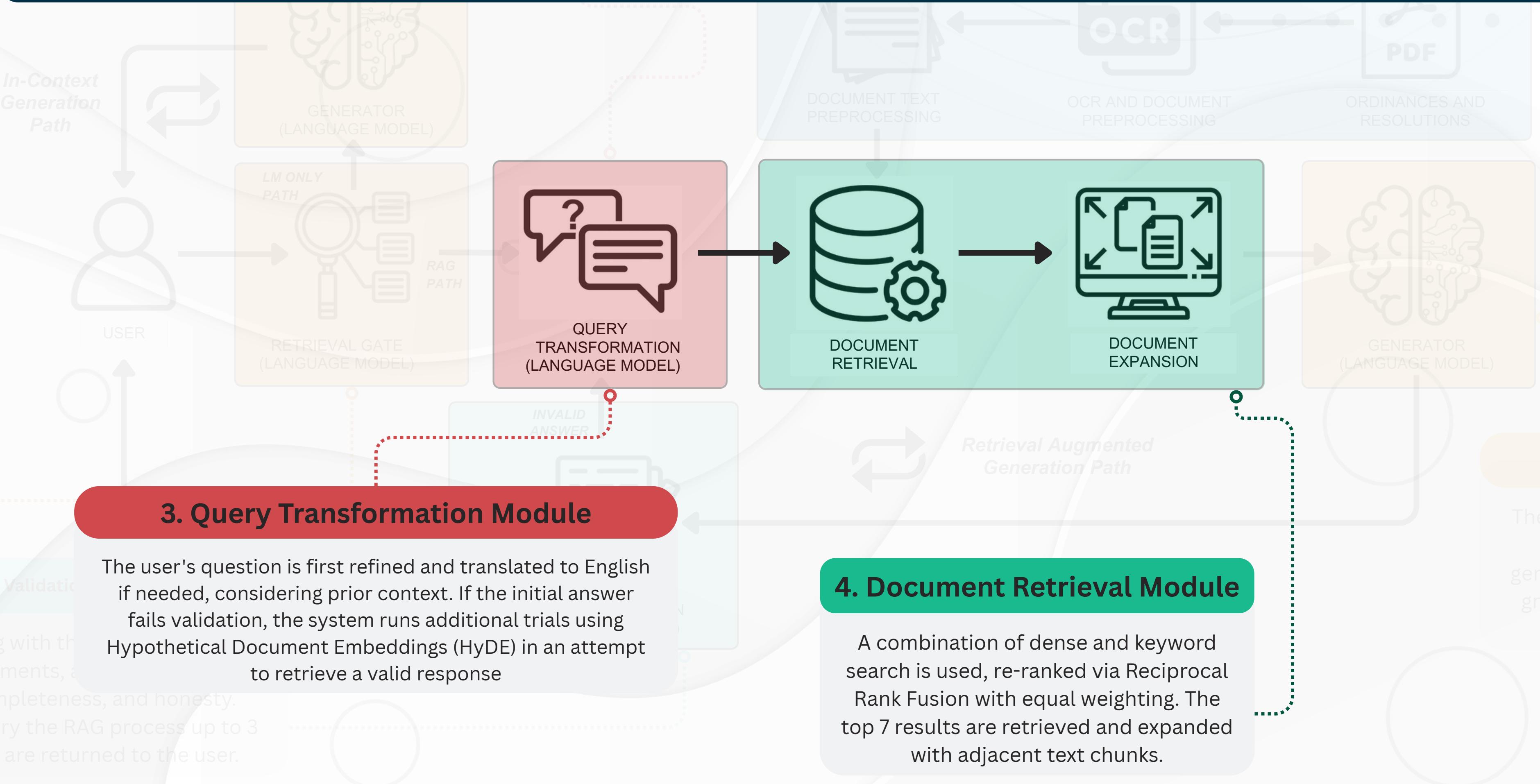
The model generates an answer based on its pre-trained knowledge, without relying on external documents or citations.

2. Retrieval Decision Module

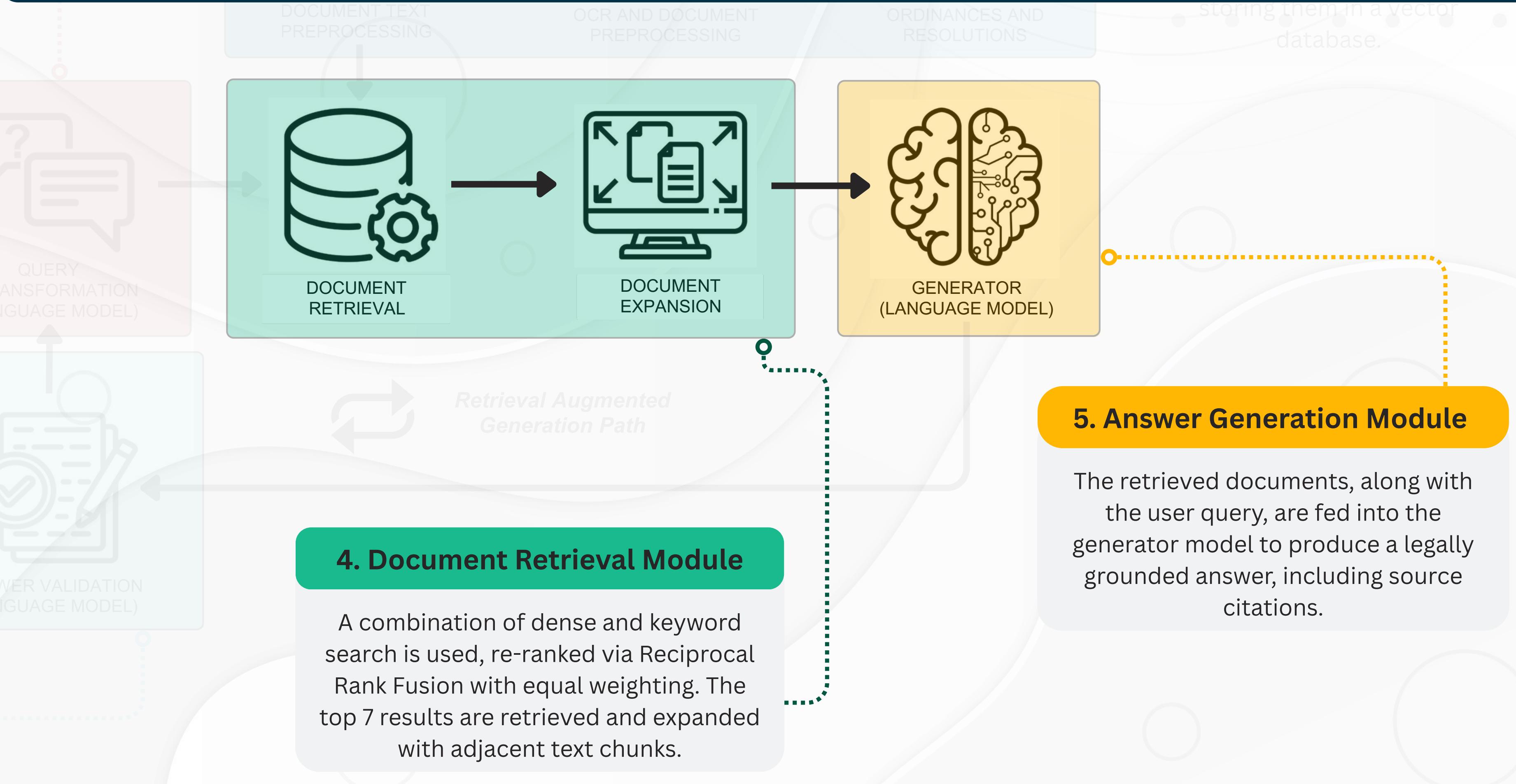
Determines whether a query requires external context; simple ones are answered directly by the language model, while knowledge intensive queries trigger document retrieval.



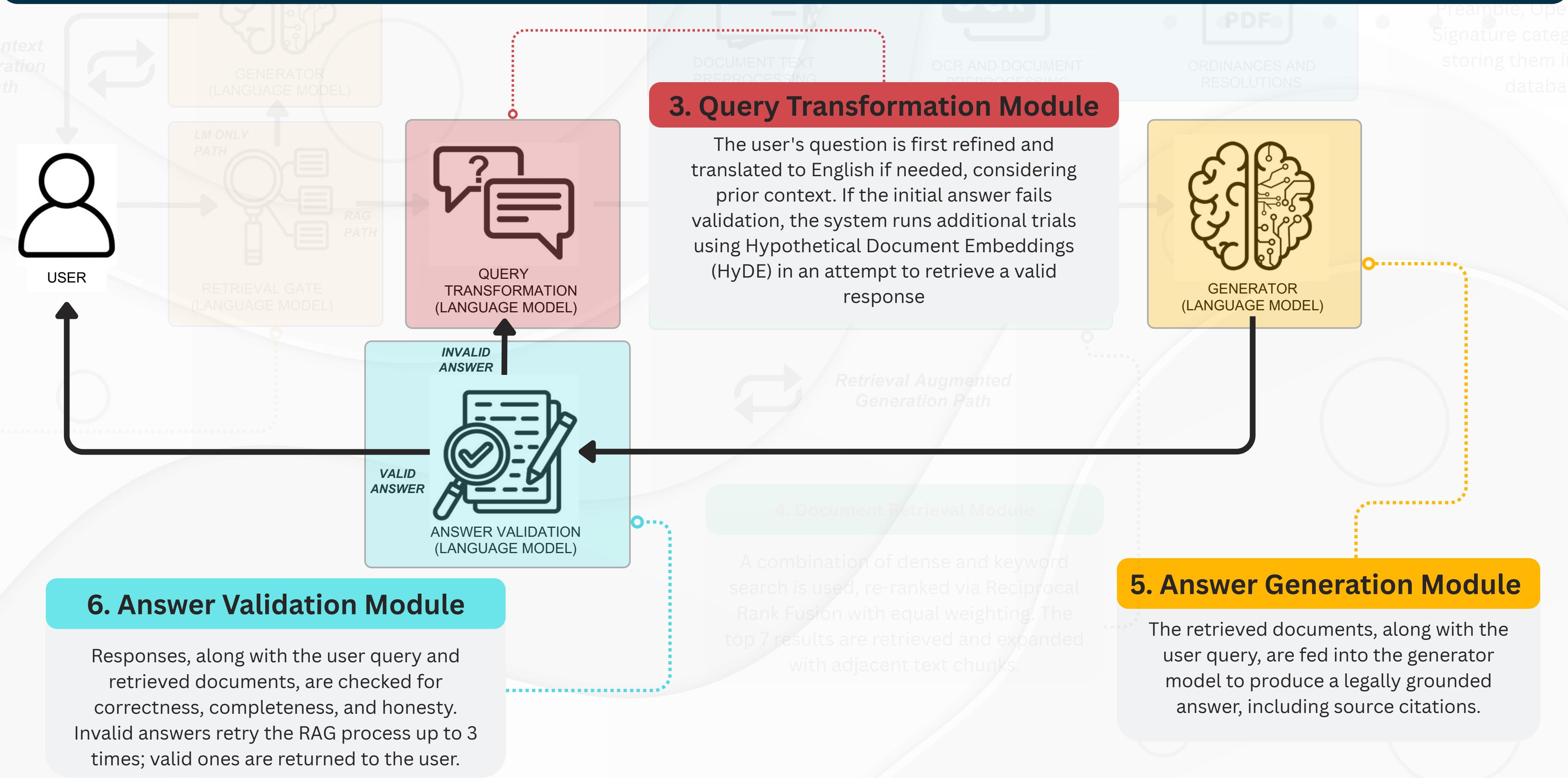
Document Retrieval Module



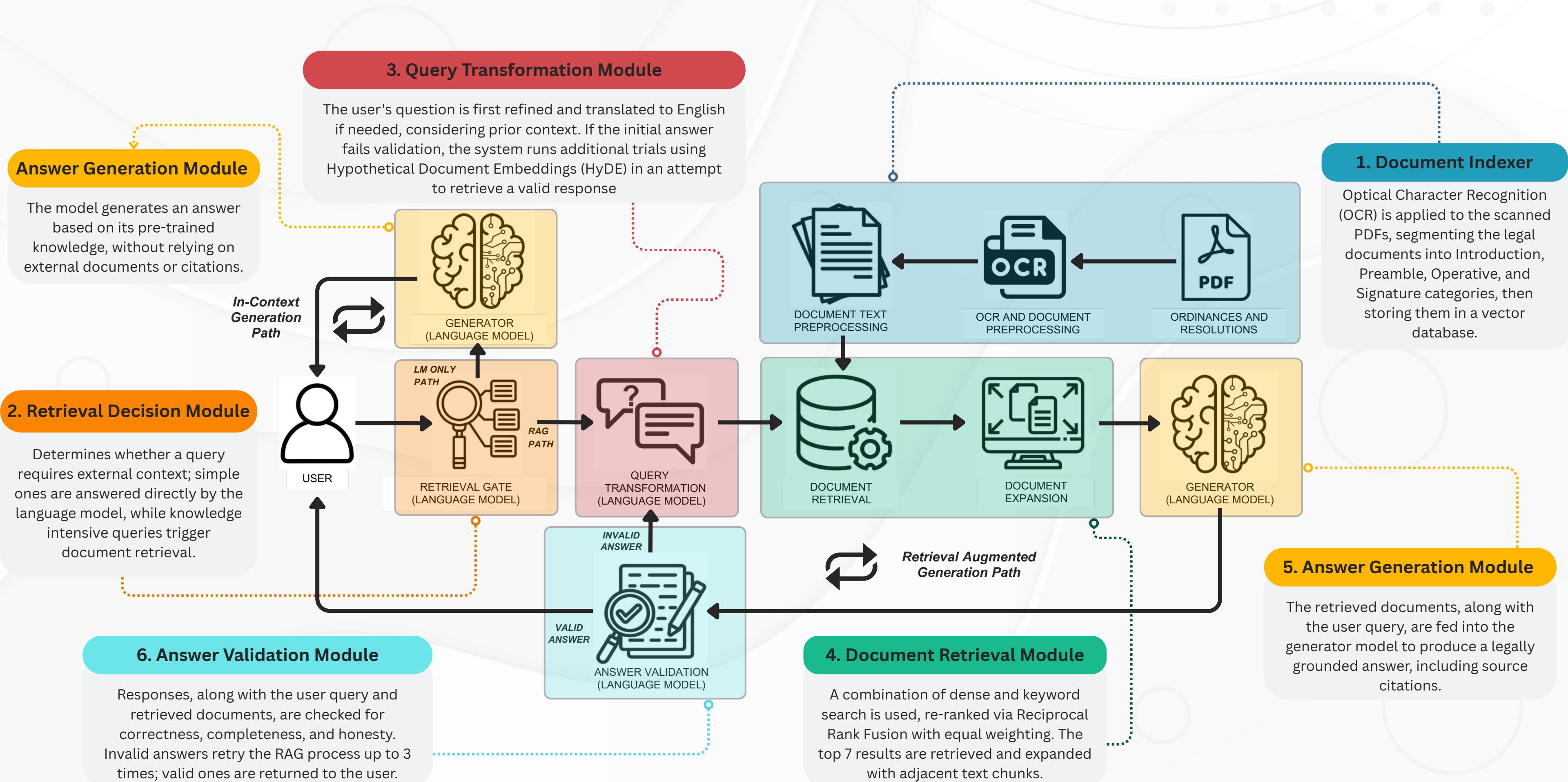
Answer Generation Module



Answer Validation Module



Architecture of Retrieval-Augmented Generation (RAG) Chatbot



Results



Proven effective in handling both **English** and **Filipino** queries

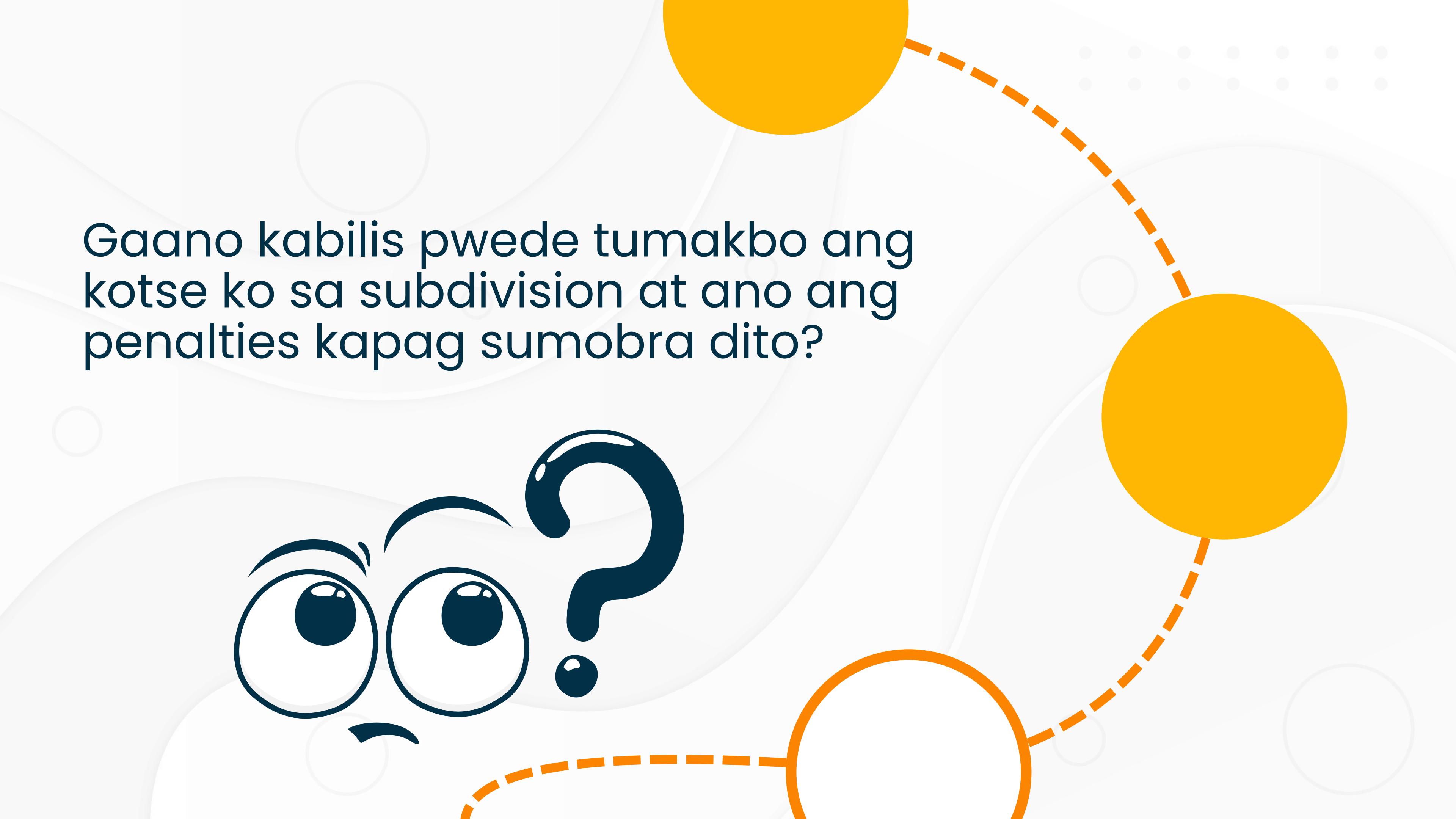


Chatbot Generated Response achieved a **strong performance** on:

- | | |
|--------------|-------------|
| Faithfulness | Similarity |
| Relevance | Correctness |



Approved by Quezon City Government for deployment on their website



Gaano kabilis pwede tumakbo ang
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Gaano kabilis pwede tumakbo ang kotse ko sa subdivision at ano ang penalties kapag sumobra dito?



Ang speed limit ng mga kotse sa loob ng subdivision sa Quezon City ay dalawampung (20) kilometro kada oras, lalo na sa mga masisikip na kalsada, papalapit sa mga interseksyon sa "blind corners", at sa mga lugar na malapit sa simbahan at paaralan .

Ang mga penalties para sa paglabag sa speed limit na ito ay ang mga sumusunod :

- **Unang Paglabag:** Isang (1) araw na community service at multa na Isang Libong Piso (P1,000.00).
- **Ikalawang Paglabag:** Dalawang (2) araw na community service at multa na Dalawang Libong Piso (P2,000.00).
- **Mga Sumusunod na Paglabag:** Isang (1) linggo ng community service at multa na Limang Libong Piso (P5,000.00).
- **Paglabag na nagreresulta sa pinsala sa ari-arian na higit sa Sampung Libong Piso (P10,000.00) o pagkawala ng buhay:** Isang (1) linggo ng community service, multa na Limang Libong Piso (P5,000.00), at maaaring i-endorso sa Land Transportation Office (LTO) para sa suspensyon at/o pagkansela ng lisensya ng driver at/o i-endorso sa Office of the City Prosecutor ng Quezon City para sa nararapat na aksyong kriminal.



more reliable answers



improved user experience



increased public engagement

Speed.
Accuracy.
Transparency.

Bridging people and policy.

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Thank You.

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