

Background (If you're not from NUS)



NUS has no fixed study plans



Student Exchange (SEP) requires manual selection and mapping



Now: Most students rely on NUSMods/Excel



Category	Year 1 Sem 1		Year 1 Sem 2		Year 2 Sem 1		Year 2 Sem 2		Year 3 Sem 1		Year 3 Sem 2		Year 4 Sem 1		Year 4 Sem 2		
	Course code	Units	Course code	Units	Course code	Units	Course code	Units	Course code	Units	Course code	Units	Course code	Units	Course code	Units	
1	HSH1000	4	HSS1000	4	IT1244	4	LSM3247	4	(UPIP)	12	(SEP)	4	LSM3231	4	LSM4245	4	
2	HSI1000	4	HSA1000	4	ZB2201	4	LSM2105	4	GEN	4	LSM4241	4	LSM3228	4	CS2040H	4	
3	GEA1000	4	DTK1234	4	HSI2007	4	LSM2191	4	A	4	LSM3991	4	LSM3235	4	HS2916	4	
4	ES1103	4	SP1541	4	LSM2106	4	CS1010S	4			LSM3991	4	ZB4171	4	ZB3288	4	
5	CM1102	4	LSM1111	4	LSM2233	4	ZB3101	4			LSM2107	4	CS2030HS	4			
6	CFG1002	2	ZB2101	4	CFG1004	2	HS2911	4			LSM3220	4					
			CFG1003	0													
Total courses		6		6		5		0		0		0		0		0	17
Total units		22		24		22		24		16		16		24		16	164
CHS Mods	HSI2007 IT1244 CS1010S HS2911 HS2916 GEN						Scientific Inquiry II Artificial Intelligence Digital Literacy Interdisciplinary Course 1 Interdisciplinary Course 2 Communities & Engagement	LSM	LSM2105 LSM2106 LSM2107 HS2911 HS2916 GEN	LSM2233 LSM3231 LSM3228 LSM3220 LSM3235 LSM3244 LSM3247 LSM4245 LSM4241 LSM4242	Cell Biology Protein Structure & Function Microbiomes & Biofilms Genes, Genomes & Biomedical Implications Biomedical Applications of Human Epigenetics Molecular Biotechnology Practical Synthetic Biology Advanced Epigenetics & Chromatin Biology Functional Genomics Protein Engineering						

Problem Statement

Solution overview

Comparison with NUSMods

Technical Architecture

User Flow & Demo

Challenges

Scalability & Future Extensions

Conclusion

The Problem?

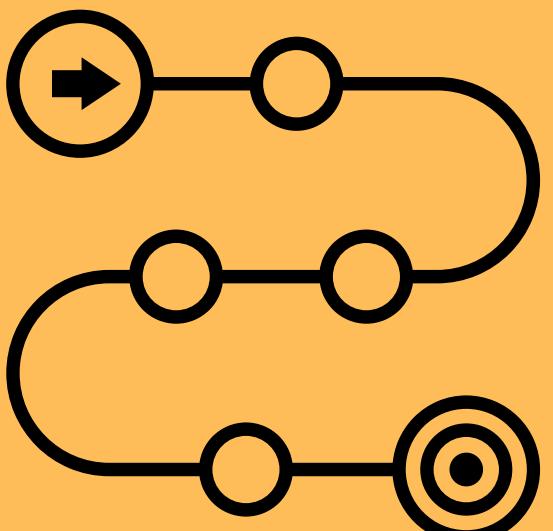
Creating a study plan shouldn't be this annoying.

-  **Information is scattered everywhere - NUSMods, faculty websites, random PDFs**
-  **Graduation requirements need to be checked manually**
-  **SEP (Exchange) planning is a whole other struggle**

Our Solution: NUSPlanner



**Automated planning
with graduation and
prerequisite check**



**Exchange course
mapping**



Built-in AI Agent

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with NUSMods**

Methodology

**Technical
Architechture**

**User Flow
& Demo**

**Scalability
& Future
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Why not just use NUSMods?

Feature	NUSMods	NUSPlanner
<u>Course Planning</u>	Manual , semester by semester	Automatically generated based on major + specialization/focus area
<u>Prerequisite Handling</u>	Checks for prerequisites	Checks for prerequisites & corequisites and offered semesters
<u>Graduation Requirements</u>	Not accounted for	Tracks graduation progress by pillar
<u>Exchange / SEP Integration</u>	None	Course mapping + Integration into study plan
<u>AI Assistance</u>	None	Built-in AI assistant for course suggestions

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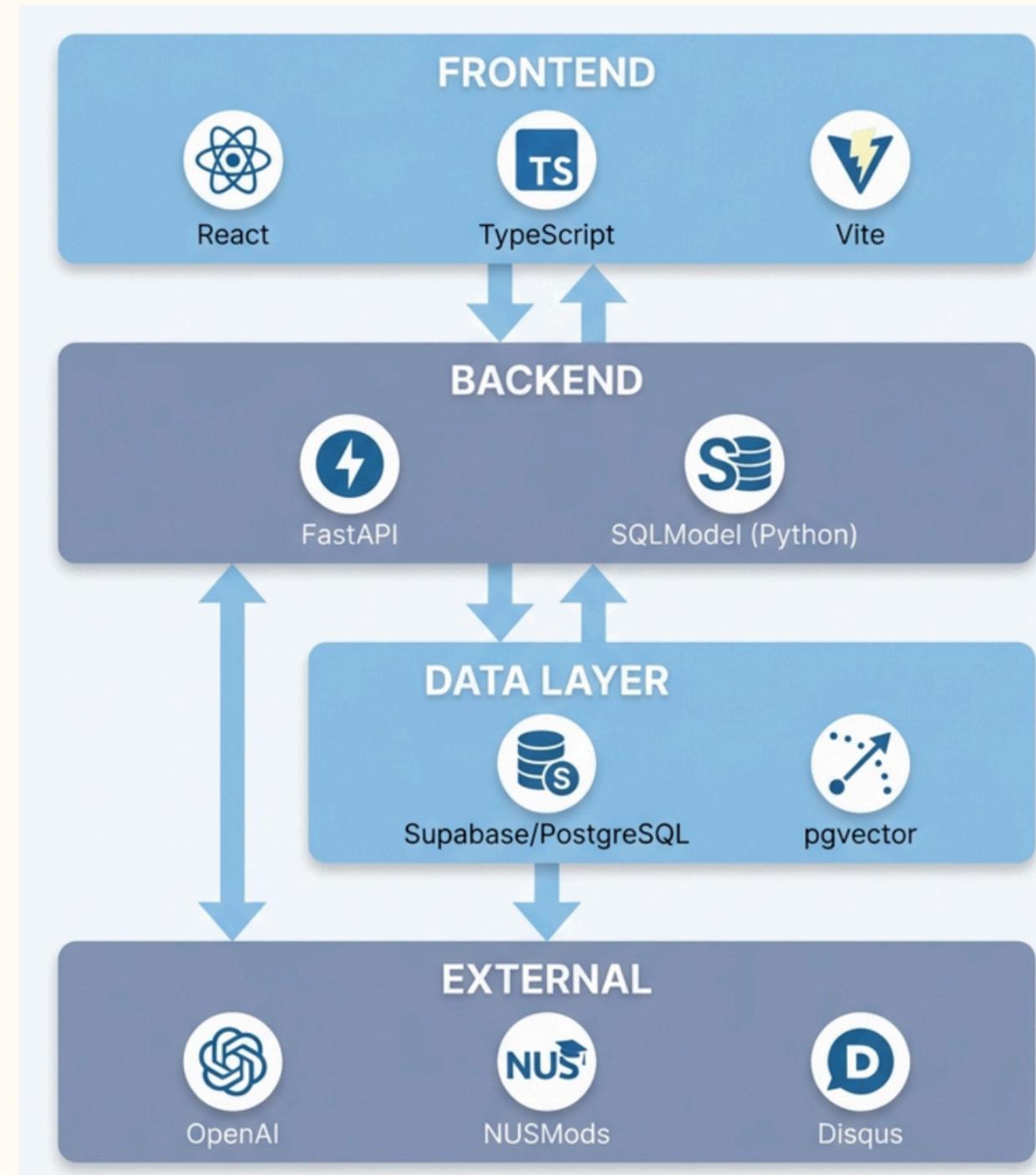
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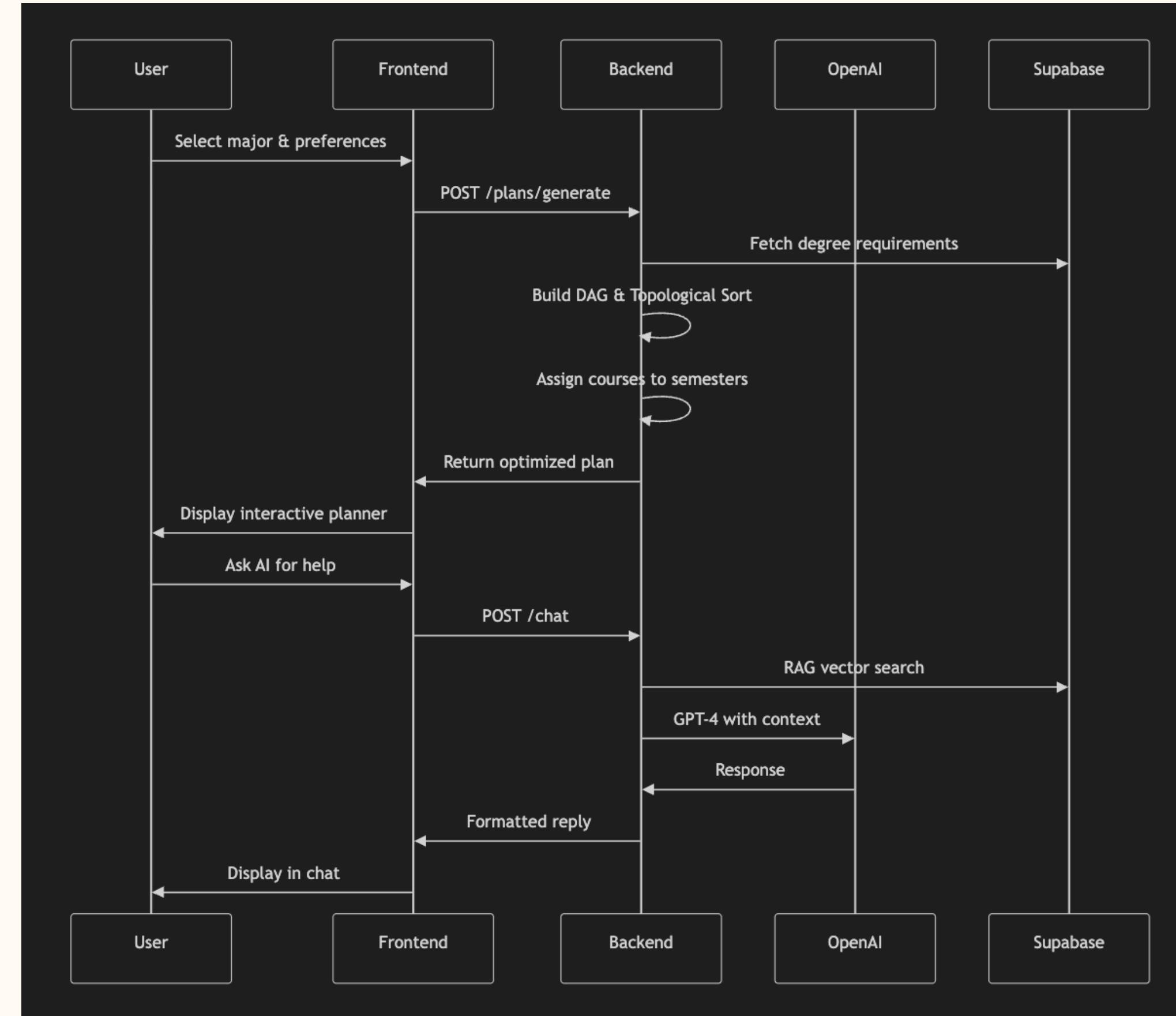
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Technical Architecture



Layer	Technology
Frontend	React 18, TypeScript, Vite
Backend	FastAPI (Python)
Database	Supabase (PostgreSQL + pgvector)
AI	OpenAI GPT-4
Data Source	NUSMods API/Disqus

Data Flow



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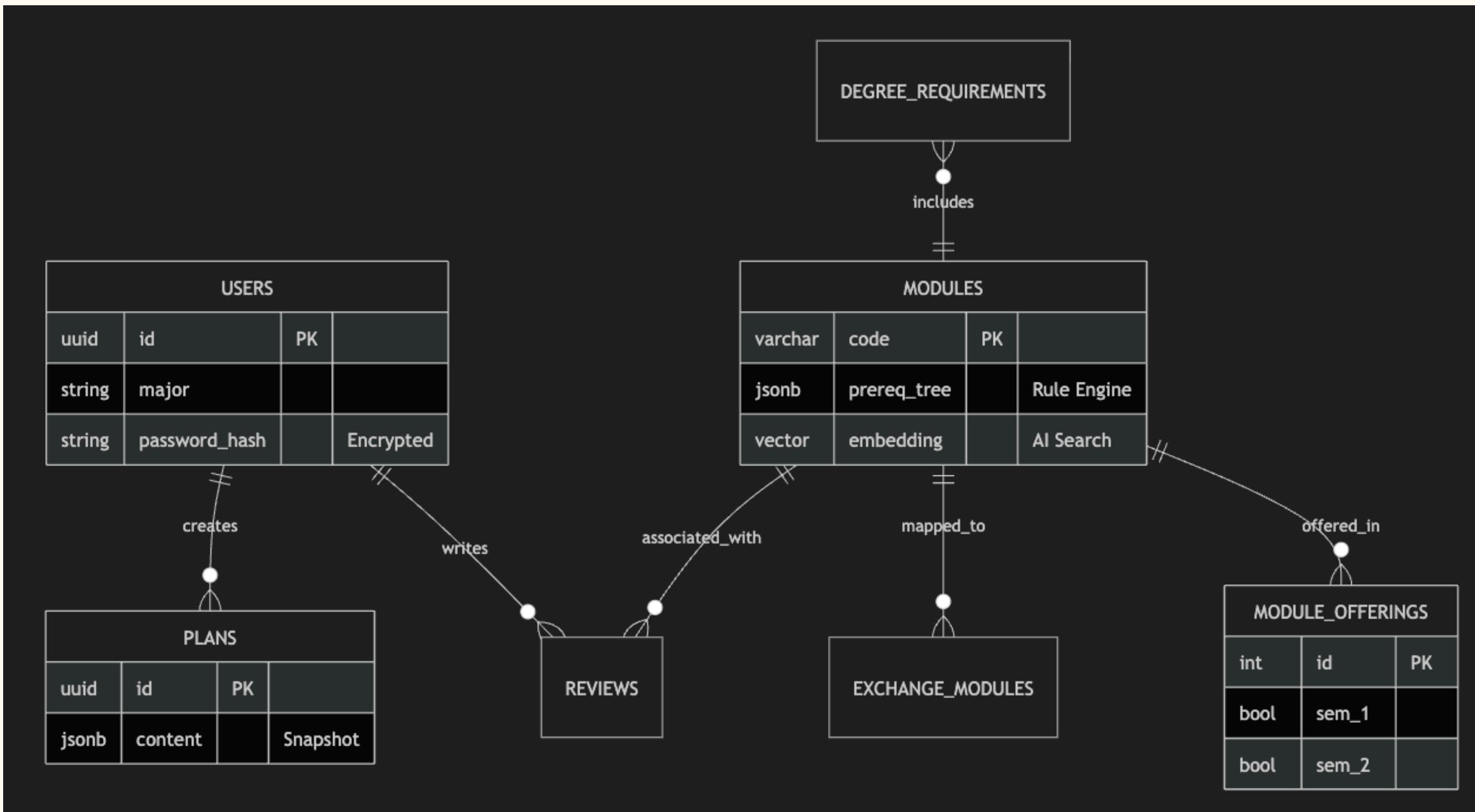
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Scalability & Future Extensions

Conclusion

Database Schema



Problem Statement

Solution overview

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Technical Architecture

User Flow & Demo

Challenges

Scalability & Future Extensions

Conclusion

Demo



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Technical Architecture

User Flow & Demo

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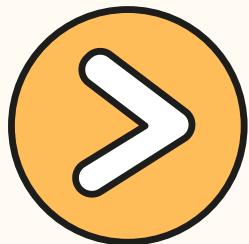
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Challenges we faced



Lack of data for SEP (exchange)



Maintaining prereq & coreq relationships

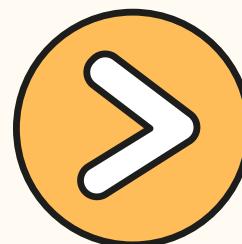


Lack of API keys

Future Plans



Second Major / Minor feature



Integrate with NUSMods ecosystem



Support more faculties & degrees



Collaborate with other schools



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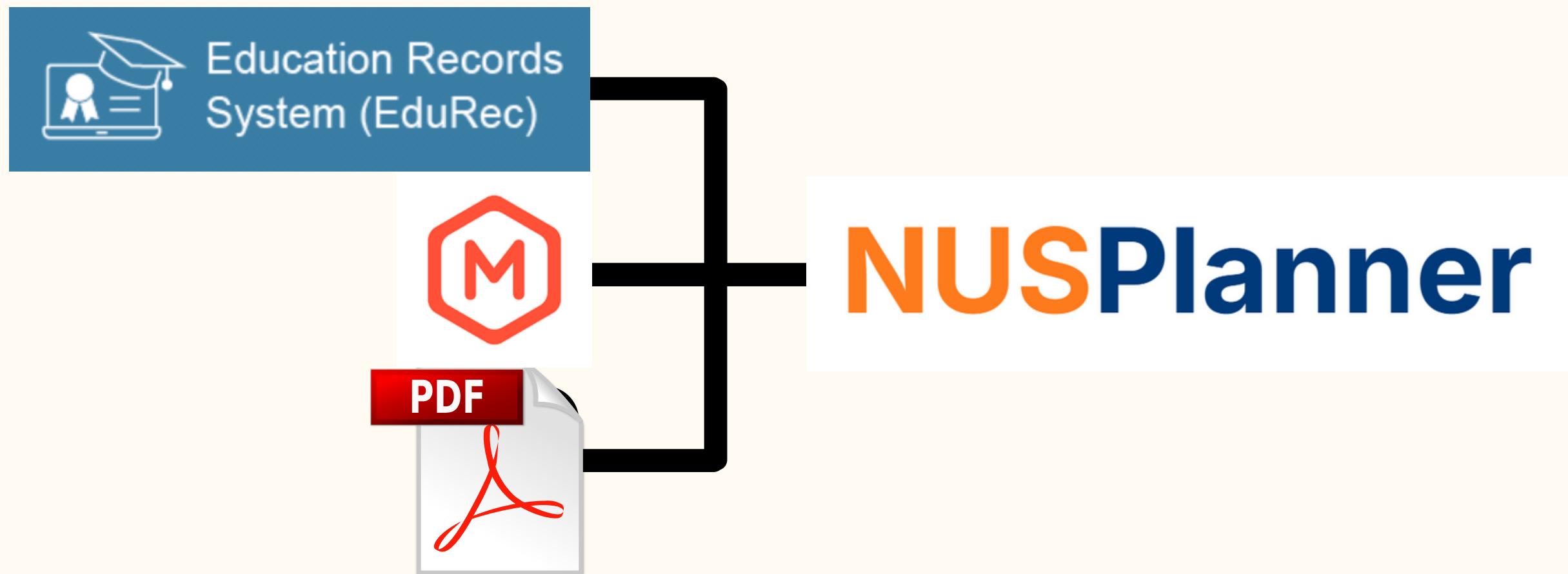
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Less chaos, easier planning!

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Q&A

