

NarrVoca

Based on Vocora

APPENDIX A

AI / LLM Prompt Log — Part A (Condensed)

Course	CSCI 6333 — Database Systems
Project	NarrVoca (Based on Vocora)
Part	A — Database Design
Team	Ruben Aleman · Sylvia Ozuna · Andrea Garza
Cloud	Supabase PostgreSQL (in place of AWS)
SQL	PostgreSQL 18.2 — schema already restored
Date	February 18, 2026

Objective

This log documents the AI/LLM prompts used during a single working session on February 18, 2026 to complete CSCI 6333 Part A. The original Vocora language learning system was used as the base. Claude (Anthropic) served as the primary AI assistant throughout. All outputs were reviewed and validated by the team before inclusion in the final submission.

Note: Supabase PostgreSQL is used in place of AWS. The database was already operational with an existing schema, satisfying the SQL/cloud setup requirements.

Part A Requirements — Completion Checklist

Requirement	How Completed	Points	Status
Cloud Platform Setup	Supabase PostgreSQL (replaces AWS)	5 pts	<input checked="" type="checkbox"/> Done
SQL / Database Setup	PostgreSQL 18.2 installed; schema restored via psql	5 pts	<input checked="" type="checkbox"/> Done
Team Organization	Ruben Aleman, Sylvia Ozuna, Andrea Garcia (≤ 4 members)	10 pts	<input checked="" type="checkbox"/> Done
Problem Description	NarrVoca problem statement written — Section 1	20 pts	<input checked="" type="checkbox"/> Done
E-R Design	16-entity ER diagram + cardinalities + business rules	30 pts	<input checked="" type="checkbox"/> Done
Relational Design	16 tables documented with PK/FK + schema diagram	30 pts	<input checked="" type="checkbox"/> Done
TOTAL — All Part A Requirements Satisfied		100 pts	<input checked="" type="checkbox"/> Complete

Phase 1 — Database Recovery and Cloud Setup

Addressed requirement: Cloud Platform (5 pts) + SQL Setup (5 pts)

Prompt 1 · Database Backup Recovery <input checked="" type="checkbox"/> Complete	
Prompt	<i>We have an old Supabase project that was paused. We have a .backup file. How do we restore it to a new Supabase project using psql?</i>
Result	<ul style="list-style-type: none">Located backup file: db_cluster-08-07-2025@03-25-00.backup (plain SQL format)Installed PostgreSQL 18.2 locally; added pg tools to PATHCreated new Supabase project: User_Management_System_Backup (AWS us-west-2)Ran psql restore command targeting new Supabase connection stringConfirmed 5 base Vocora tables restored: cached definitions, user preferences, user stories, vocab_lists, vocab_words

Prompt 2 · Schema Validation and Environment Setup <input checked="" type="checkbox"/> Complete	
Prompt	<i>Confirm what tables exist, validate the schema, and update the .env file so the Next.js app connects to the new Supabase project.</i>
Result	<ul style="list-style-type: none">Verified all 5 tables visible in Supabase Table EditorIdentified columns, PKs, and FKs for each restored tableDocumented new Supabase project URL for .env updateConfirmed anon/public API key location in Settings → APICloud platform requirement satisfied (Supabase replaces AWS)

Phase 2 — System Redesign and Entity Design

Addressed requirement: Problem Description (20 pts)

Prompt 3 · System Redesign — Vocora to NarrVoca <input checked="" type="checkbox"/> Complete	
Prompt	<i>Expand the Vocora system into a structured narrative learning platform called NarrVoca. Define the problem statement, target users, languages supported, and system scope.</i>
Result	<ul style="list-style-type: none">• System renamed: NarrVoca (Based on Vocora)• Target users: English speakers learning Spanish (es) and Mandarin (zh)• Core shift: flat story storage → structured Story → Node → Text architecture• Added: grammar mapping, vocabulary targeting, adaptive branching, spaced repetition• Problem statement written and included in Section 1 of Part A document

Prompt 4 · New Entity Identification <input checked="" type="checkbox"/> Complete	
Prompt	<i>Generate all new database entities needed for NarrVoca's narrative learning engine beyond what Vocora already had.</i>
Result	<ul style="list-style-type: none">• 11 new entities defined: stories, story_nodes, node_text, branching_logic, vocabulary, grammar_points, node_vocabulary, node_grammar, user_node_progress, user_vocab_mastery, interaction_log• Combined with 5 base Vocora tables = 16 total entities in final schema

Phase 3 — ER Design

Addressed requirement: E-R Design (30 pts)

Prompt 5 · <i>ER Relationships and Cardinalities</i> <input checked="" type="checkbox"/> Complete	
Prompt	<i>Define all ER relationships, cardinalities, and business rules for the 16-entity NarrVoca schema.</i>
Result	<ul style="list-style-type: none"> • 1:M — STORIES → STORY_NODES (a story contains many nodes) • 1:M — STORY_NODES → NODE_TEXT (multilingual text per node) • 1:M — STORY_NODES → BRANCHING_LOGIC (multiple outgoing branches) • M:N — STORY_NODES ↔ VOCABULARY (via node_vocabulary) • M:N — STORY_NODES ↔ GRAMMAR_POINTS (via node_grammar) • M:N — USER ↔ STORY_NODES (via user_node_progress) • M:N — USER ↔ VOCABULARY (via user_vocab_mastery) • 1:M — USER → INTERACTION_LOG • 1:M — VOCAB_LISTS → VOCAB_WORDS (base Vocora relationship) • 8 business rules documented including referential constraints

Prompt 6 · <i>ER Diagram Generation — Figure 1</i> <input checked="" type="checkbox"/> Complete	
Prompt	<i>Generate a high-quality ER diagram showing all 16 entities, relationships, and cardinalities in a style suitable for academic submission.</i>
Result	<ul style="list-style-type: none"> • ER diagram produced as SVG/HTML then rendered to PNG • Color coding: Blue = Vocora base, Green = NarrVoca new, Orange = Associative • 1:M shown with solid lines + cardinality labels • M:N shown with dashed lines through associative entities • USER shown as abstract node connected to associative tables • Full legend and figure caption included • Output: NarrVoca_Figure1_ER_Diagram.png

Phase 4 — Relational Database Design

Addressed requirement: Relational Design (30 pts)

Prompt 7 · ER-to-Relational Mapping <input checked="" type="checkbox"/> Complete	
Prompt	<i>Map the ER design to relational tables using standard mapping rules (strong entity, 1:M FK, M:N associative, multivalued attributes).</i>
Result	<ul style="list-style-type: none"> Rule A: Each strong entity → table with PK (stories, vocabulary, grammar_points, etc.) Rule B: 1:M → FK on many-side (story_id in story_nodes, node_id in node_text, etc.) Rule C: M:N → associative table with composite PK (node_vocabulary, node_grammar, etc.) Rule D: Relationship with own attributes → entity table (branching_logic with branch_id PK) Rule E: Multivalued attributes → separate table (node_text with language_code discriminator) All 16 tables fully documented with column names, types, PK/FK constraints

Prompt 8 · Schema Diagram Generation — Figure 2 <input checked="" type="checkbox"/> Complete	
Prompt	<i>Generate a Silberschatz-style relational schema diagram showing all tables, columns, PKs, FKS, and foreign key reference arrows.</i>
Result	<ul style="list-style-type: none"> Schema diagram produced as SVG/HTML then rendered to PNG Yellow rows = Primary Keys (underlined, bold) Pink rows = Foreign Keys (italic, red text) Red dashed arrows showing all FK references between tables 3-row layout: Base Vocora tables / NarrVoca core tables / Associative + log tables Output: NarrVoca_Figure2_Schema_Diagram.png

Phase 5 — Document Production

Addressed requirement: Cover page, formatted submission document

Prompt 9 · Word Document (.docx) Generation <input checked="" type="checkbox"/> Complete	
Prompt	<i>Generate a complete, professionally formatted Word document for BrightSpace submission including cover page, all sections, and all tables.</i>
Result	<ul style="list-style-type: none">Cover page: team names, course, system name, due date7 sections: Problem Statement, Requirements, ER Design, Relational Design, Mapping, Normalization, DiagramsAll 16 schema tables formatted with alternating row shadingRelationships table with cardinalitiesHeader/footer with page numbersOutput: NarrVoca_PartA_DatabaseDesign.docx

Prompt 10 · LaTeX Source (.tex) Generation <input checked="" type="checkbox"/> Complete	
Prompt	<i>Generate a matching LaTeX source file for Overleaf rendering with proper formatting, table environments, and diagram placeholder commands.</i>
Result	<ul style="list-style-type: none">Full LaTeX document with geometry, titlesec, booktabs, tabularx, TikZ packagesAll sections and tables replicated in LaTeX syntaxFixed: sloppy + emergencystretch to prevent code overflow past right marginSection 5 mapping examples refactored to avoid long monospace line overflow\includegraphics placeholders for both PNG diagram filesOutput: NarrVoca_PartA_DatabaseDesign.tex

Summary of AI Contribution

Task	AI Tool Used	Status
Database backup recovery + restore	Claude — step-by-step psql command generation	<input checked="" type="checkbox"/> Complete
Supabase project setup + .env config	Claude — connection string + API key guidance	<input checked="" type="checkbox"/> Complete
System redesign: Vocora → NarrVoca	Claude — architecture and scope definition	<input checked="" type="checkbox"/> Complete
Problem statement authoring	Claude — academic writing, Section 1	<input checked="" type="checkbox"/> Complete
16-entity schema design	Claude — entity identification and attribute definition	<input checked="" type="checkbox"/> Complete
ER relationships and cardinalities	Claude — relationship modeling and business rules	<input checked="" type="checkbox"/> Complete
ER-to-relational mapping (Rules A–E)	Claude — mapping methodology and documentation	<input checked="" type="checkbox"/> Complete
Normalization to 3NF	Claude — 1NF, 2NF, 3NF analysis and documentation	<input checked="" type="checkbox"/> Complete
ER Diagram (Figure 1)	Claude — SVG/HTML generation → PNG render	<input checked="" type="checkbox"/> Complete
Schema Diagram (Figure 2)	Claude — SVG/HTML generation → PNG render	<input checked="" type="checkbox"/> Complete
Word document (.docx)	Claude — docx-js full document generation	<input checked="" type="checkbox"/> Complete
LaTeX source (.tex)	Claude — Overleaf-ready .tex with overflow fixes	<input checked="" type="checkbox"/> Complete

All AI outputs were reviewed, validated, and approved by the NarrVoca team prior to submission. | CSCI 6333 · Part A · February 26, 2026