AI Narrative Transformation System

Project: Ramayana → Interplanetary Cyberpunk Reinterpretation
Role: Applied AI Engineer Assignment
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1. Overview

This system transforms classic public-domain stories into new imaginative contexts while maintaining thematic coherence and structural integrity.

The primary goal is to demonstrate:

- Prompt engineering
- Modular system thinking
- Reproducible text generation
- Framework-based transformation instead of one-off creative writing

The system was built as a **prompt-chained pipeline** that accepts:

```
Input → (Story + Target Setting)
```

and returns a fully structured narrative reinterpretation with:

- World-building
- Character mapping
- Plot structure
- Thematic reinterpretation
- Creative rationale

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2. Architecture Diagram

High-Level Flow

```
┌────────────┐
│ User Input │ (e.g. “Ramayana in cyberpunk space”)
└─────┬──────┘
      │
      ▼
┌─────────────────────────┐
│ Metadata Loader         │  (characters, themes, scenes)
└──────────┬──────────────┘
           │
           ▼
┌─────────────────────────┐
│ Core Element Extractor │ (normalizes structure)
└──────────┬──────────────┘
           │
           ▼
┌───────────────────────────────┐
│ Transformation Layer         │
│  - Worldbuilding prompt       │
│  - Character mapping prompt   │
│  - Plot outline prompt        │
│  - Dramatic reinterpretation  │
│  - Creative rationale         │
└──────────┬────────────────────┘
           │
           ▼
┌─────────────────────────┐
│ Output Assembler        │
│  (merges sections into  │
│   final document)       │
└──────────┬──────────────┘
           │
           ▼
┌───────────────────────────────┐
│ Final Narrative (Markdown)   │
└───────────────────────────────┘
```

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3. System Components

3.1 Metadata Module

Contains minimal structured data about:

- Core themes
- Main characters
- Key scenes

This avoids re-embedding story summaries and keeps content public domain compliant.

Example schema:

```
{
  "core_themes": [...],
  "characters": [...],
  "key_scenes": [...]
}
```

3.2 Prompt Engine

Instead of one long prompt, the system uses a **chain of modular prompts**.

Each prompt:

- Includes structured constraints
- Injects prior generated output
- Reinforces the transformation rules

This provides:
✔️ Coherence
✔️ Higher control

✔️ Reduced hallucination
✔️ Reproducibility

3.3 Pipeline Stages

Stage	Output
Extract elements	normalized metadata
Generate worldbuilding	~600–800 words
Character mapping	table + relational notes
Plot outline	3-act structure with mirrored scenes
Dramatic reinterpretation	core thematic mapping
Creative rationale	justification + emotional logic
Assembler	final markdown

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4. Alternatives Considered

A. Single Prompt (Rejected)

- Simpler to implement
- But produces inconsistent structure
- Hard to debug
- Not reusable

B. Few-shot direct output

- Would require curated example dataset
- Less generalizable

- Higher token cost

C. Retrieval-Augmented Generation (Future Work)

- Could improve thematic accuracy
- But overkill at assignment scale

Chose **modular prompt chaining** because it balances:

- Control
- Simplicity
- Generalizability
- Demo clarity

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5. Challenges & Mitigations

Challenge	Mitigation
Consistency across sections	pass prior output into prompt context
Thematic fidelity	extracted core themes required in every prompt
Model variability	fixed template-based prompts
Avoiding copyrighted content	only metadata + reinterpretation
API limitations	supports mock mode if API unavailable

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6. Future Improvements

- Add UI / Web App interface
- Expand metadata library to multiple epics & novels

- Add evaluation metrics for fidelity & coherence
- Support multiple output tones and genres
- Replace static JSON metadata with vector retrieval
- Add training data for better alignment

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7. Implementation Notes

- The system supports **mock mode** (no key required)
- API key management uses environment variables (secure practice)
- Modular code supports new stories by replacing metadata JSON
- Can run on OpenAI OR free open-source LLMs