***AI-Powered Game Story Generator - Technical***

***Specifications Document***

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## Introduction

##### Purpose of Document

The AI-Powered Game Story Generator is designed to automate and enrich the storytelling process in video game development. Utilizing advanced NLP and machine learning techniques, the system will generate characters, plots, dialogues, and provide an interface for customization and feedback

##### Intended Audience

This document is mainly for the developers of the project.

* 1. ***Definition of Terms, Acronyms and Abbreviations***

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| ***Term*** | ***Description*** |
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##### Document Convention

##### Font Style is Arial and Font Size is 12 for headings and 10 for main context in the composition of the document.

## Overall System Description

##### Project Background

##### The idea to build this project was that to Use the power of *AI* to *generate* a captivating *game* story that will engage players and keep them coming back for more. Try our *Game Story generator* today!

##### Project Scope

##### Main functionalities of the project are:

##### AI models for intricate plots and diverse characters.

##### Interactive dynamics between characters

##### Systems for generating natural dialogues.

##### Sentiment analysis and emotional tone adjustments.

##### Interface for inputting themes, settings, and preferences.

##### Customization options.

##### Seamless integration with streamlit through visual studio

##### Not In Scope

##### The project does not cater self-removing of data after a specific period of time

##### Project Objectives

##### The project will use the concept of NLP techniques to Train AI models on the dataset. Focus on narrative coherence and engagement.

##### Stakeholders

##### Primary Stakeholders: Customer, Developers, Project Manager.

##### Secondary Stakeholders: Competitors, End-Users.

##### Customer: Customers determine the main requirements and project scope. They will interact with the team, approve or supplement plan with new implementation points.

##### Development Team: Developers are responsible for timely software delivery and estimation. This group also includes QA engineers who will define bugs to meet specified requirements and prevent failed user scenarios.

##### Project Managers: Project Managers will control the entire project creation process, considering the interests and needs of all stakeholders.

##### Competitors: Competitors will implement new features and create industry trends affecting the market.

##### Operating Environment

##### The project will be developed on PYTHON 3.12.0 using streamlit through Visual Studio Platform . The operating environment will be a user interface provided by application manager.

##### System Constraint

##### This system doesn’t have any kind of constraints. It can run on any 64-bit processor having an OS with python compatibility.

##### Assumptions & Dependencies

##### Assumptions:

##### User will enter only the Generate story by choosing particular story which is in the inventory.

##### All the data stored in inventory is accurate.

##### Dependencies:

##### This system doesn’t have dependencies on any external factor.

## System Architecture

System Architecture: Well-designed infrastructure with detailed documentation.

Story Dataset: Comprehensive and legally compliant dataset.

Generative AI Models: High-quality, trained AI models.

Dialogue Generation Engine: Advanced module for dialogues.

User Interface: Intuitive platform for developer interaction.

Customization Module: Flexible content modification tools.

Integration Plugins: Robust extensions for game engines.

Documentation: Extensive guides and API details.

## Design Strategy

Data Collection & Preprocessing:

• Ingestion of existing game narratives, character profiles, and dialogues.

• Compliance with data privacy laws and copyright regulations.

Model Training and Development:

• Use NLP to train on datasets for coherent plot, character, and dialogue creation.

Story and Character Generation Module:

• Algorithms to generate story arcs and characters with dynamic interactions.

Dialogue Creation Engine:

• Models for natural, contextually relevant conversations.

User Interface (UI):

User-friendly UI for game developers to input preferences and customize content. Customization Module:

• Tools for developers to refine stories, characters, and dialogues.

Integration with Game Engines:

• Plugins and extensions for smooth content import and editing.

Feedback Loop:

• Mechanisms to learn from user feedback and improve the models.

## Detailed System Design

*[A detailed design should include the following:*

* *Detailed class diagram along with a detailed description of all attributes, functions or methods specifying interactions between different classes/modules.*
* *Logical data model (E/R model)*
* *Detailed GUIs]*

### Data Privacy Concerns

Robust measures for user data protection.

Clear user consent protocols.

#### Model Accuracy

Continuous model enhancement for improved performance.

#### User Engagement

Feedback collection for it

## Reference

*[This section should provide a complete list of all documents referenced at specific point in time. Each document should be identified by title, report number (if applicable), date, and publishing organization. Specify the sources from which the references can be obtained. (This section is like the bibliography in a published book).]*

## Appendices

*[This section should include supporting detail that would be too distracting to include in the main body of the document.]*

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