Solar System Explorer: Knowledge Representation System Proposal

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1 Team Members

The following individuals are contributing to the development of this project:

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2 Introduction

The purpose of this project is to develop a knowledge representation system for celestial bodies within our solar system, including planets, moons, and asteroids. The system will gather data either through web scraping or a suitable dataset, which has yet to be finalized, to build a query-able, structured knowledge base.

3 Objectives

The main objective is to represent solar system data in a formalized manner that allows for easy querying and reasoning. This project will:

- Collect and preprocess data via web scraping or an external dataset.
- Develop an ontology that models the relationships between celestial bodies.
- Implement a query system for extracting information from the knowledge base.

4 Proposed Methodology

The project will be divided into four main phases:

1. **Data Collection and Preprocessing**: Gather and clean data on planets, moons, and asteroids using web scraping or from a suitable dataset.
2. **Ontology Development**: Use ontology tools (such as Protégé) to model relationships and attributes between celestial bodies.
3. **Query Implementation**: Implement a SPARQL-based query system to enable interactive queries on the dataset.
4. **Testing and Evaluation**: Test the system using predefined queries and evaluate its accuracy and performance.

5 Conclusion

This project will create a functional, query-able knowledge representation system for the solar system. The system will enable users to retrieve detailed information about planets, moons, and other celestial bodies, facilitating further research and exploration.