

# Interactive Astronomy Quiz with Planet Destruction Simulation

## **Introduction:**

The project combines elements of interactive learning with visual simulation in the context of astronomy. The primary objective is to create an engaging educational experience centered around quiz questions related to astronomy, with a unique twist where incorrect answers lead to visual feedback of planetary destruction.

## **Project Description:**

The project is a web-based interactive quiz that presents users with multiple-choice questions related to astronomy. This includes questions that are related to and learned from class. The interface displays a visually appealing representation of a planet in space. Users interact with the quiz by selecting answers to the questions presented.

## **Technical Implementation:**

The project utilizes web technologies such as Three.js for 3D graphics rendering and interaction, along with JavaScript for logic and user interface elements. Key components of the implementation include:

- Creation of a 3D scene with a planet model using Three.js. The planet's appearance can be customized with options to change color and texture interactively.
- Integration of quiz questions and answers into the user interface. Questions are randomly shuffled to enhance variety.
- Implementation of a scoring system to track user performance based on correct and incorrect answers.
- Visual effects using particle simulations to represent asteroids impacting the planet upon incorrect answers.
- Simulation of a planet destruction sequence if the user accumulates a certain number of incorrect answers.

**Educational Aspect:**

The project serves as an educational tool by presenting users with astronomy-related quiz questions. Each question is designed to test and reinforce knowledge about celestial bodies, space phenomena, and related scientific concepts. The interactive nature of the quiz encourages active engagement and learning.

**Demonstration of Astronomy Topic:**

The chosen astronomy topic for this project revolves around planetary bodies, their characteristics, and the potential hazards they face. The visual representation of a planet being bombarded by asteroids upon incorrect answers effectively demonstrates the concept of space hazards and the vulnerability of celestial bodies to external forces.

**Conclusion:**

In conclusion, the interactive astronomy quiz with planet destruction simulation offers a creative and engaging approach to learning about astronomy concepts. By combining visual elements, interactive quizzes, and educational content, the project provides an immersive learning experience that is both informative and entertaining.