Introduction to Cosmic Explorer

Cosmic Explorer is an interactive web app that brings the wonders of the solar system to users.

It allows for the exploration of planets, moons, asteroids, comets, and stars through an immersive 3D simulation.

Purpose: To make space exploration accessible and engaging for students, educators, and space enthusiasts.

Through visual interaction and informative flashcards, users can deepen their understanding of our cosmic neighborhood.

Interactive Solar System

The core feature of the project is the 3D simulation of the solar system. Users can:

- Orbit around planets and zoom in/out.

- Observe planets revolving around the Sun in real-time.

- Move the view to explore the solar system from different angles.

Interactivity: Users can click on planets for more information.

Planetary Information

Each planet in the solar system is clickable and comes with a flashcard that provides:

- Key facts (size, distance from Sun, atmosphere, etc.).

- Important missions or exploration details.

Example: Clicking on Earth reveals its size, atmosphere, and missions like Apollo.

Stars, Moons, Asteroids & Comets

Cosmic Explorer also includes:

- Stars: Learn about our Sun and other stars.

- Moons: Explore major moons like Earth's Moon and Europa.

- Asteroids & Comets: Discover the composition and importance of these celestial bodies.

Flashcards provide key details on each object.

Educational Impact

Cosmic Explorer makes learning about space both fun and educational.

- Engagement: Students and educators can interact with the solar system and celestial bodies, making learning more hands-on.

- Accessibility: Users can explore complex space concepts in a simplified, visual way.

Great for classrooms or individual learning.

Tech Stack and Development

Cosmic Explorer was built using:

- Three.js: Rendering 3D simulation and interactive elements.

- JavaScript/HTML/CSS: For front-end development and interactivity.

- OrbitControls: User camera controls.

- NASA Open Data: Provided real data for planetary textures and orbital details.

Team and Vision

Chaimaa Hamri: Student in industrial mechanical systems engineering with skills in programming

languages

such as C, Python, and Java, as well as software like Catia, R, and Matlab. Chaimaa also holds certificates

from McKinsey & Co and Google.

Khadija Oubaha: AI & Computer Science Engineering student, specializing in machine learning and data

science.

Khadija has completed certificates from Oracle and IBM, complementing her expertise in AI and data-driven

technologies.