USES CASES

Use case description

Use Case Number:	UC-01
Use Case Name:	Interactive 3D Environments
Overview:	This use case involves immersing students in rich 3D environments, with a primary focus on subjects like biology and space. These interactive settings allow students to actively engage with content, fostering a deeper understanding of complex topics through exploration and hands-on interaction.
Actors:	Student: The primary user engaging with the 3D environment.
Pre condition:	The student is logged into the educational Metaverse platform. The selected 3D environment for the subject is accessible and loaded.
Flow:	The student logs into the Metaverse platform. The student navigates to the specific 3D environment related to the chosen subject (e.g., biology or space). Upon entering the 3D environment, the student can interact with objects, simulations, or scenarios relevant to the subject. The student actively engages with the content by exploring, manipulating objects, and participating in interactive simulations. The student can exit the 3D environment when satisfied or upon completing the learning objectives.
	Alternate Flows: N/A
Post Condition:	The student has engaged with the 3D environment and has gained a deeper understanding of the subject matter.

Use Case Number:	UC-02
Use Case Name:	Subject Focused
Overview:	This use case involves concentrating educational efforts on specific subjects, such as biology and space, to provide students with in-depth learning experiences. This focus allows for a comprehensive and specialized education within these subjects.
Actors:	Student

Pre condition:	The educator or platform administrator has designated specific subjects for focused educational content.
Flow:	The educator, curriculum developer, or platform administrator selects the subjects for which in-depth content will be provided, such as biology and space. Students engage with the subject-focused content, which may include lectures, interactive activities, The subject-focused content is made available to students within the educational Metaverse platform.
	Alternate Flows: N/A
Post Condition:	Students have access to and have engaged with subject-focused educational content.

Use Case Number:	UC-03
Use Case Name:	Virtual Reality Integration
Overview:	This use case involves enhancing the learning experience by seamlessly integrating Virtual Reality (VR) technology. VR allows students to transcend traditional learning boundaries.
Actors:	Student
Pre condition:	The educational Metaverse platform is equipped with VR integration capabilities. VR hardware and software are available to students who wish to use this feature.
Flow:	The student, equipped with VR hardware, logs into the educational Metaverse platform. The student navigates to content or experiences that utilize VR technology for immersive learning. The student experiences a tactile and memorable learning process through VR immersion. After the VR session, the student may exit the VR environment.
	Alternate Flows: N/A
Post Condition:	The student has engaged with educational content using VR technology, transcending traditional learning boundaries.

Use Case Number:	UC-04
Use Case Name:	Open Source Community

Overview:	This use case involves a commitment to an open-source approach, which invites contributions from a diverse community of educators, developers, and content creators. This collaborative effort expands the educational Metaverse platform's content and features, enhancing its robustness and adaptability.
Actors:	Educator: Educators can contribute educational content and resources.
Pre condition:	The educational Metaverse platform supports open-source integration. Collaborators have access to the platform's development resources and guidelines.
Flow:	Educators, developers, and content creators express their interest in contributing to the platform's open-source community. Contributors submit their educational content, code, 3D models, or other enhancements. The platform's development team reviews and evaluates the contributions for compatibility and quality. Users, including students and educators, benefit from the expanded platform with enriched educational content and features.
	Alternate Flows: N/A
Post Condition:	The platform benefits from contributions made by the open-source community, making it more robust and adaptable. Users have access to a broader range of educational resources and features.

Use Case Number:	UC-05
Use Case Name:	Gamified Learning
Overview:	This use case involves incorporating gamification elements into the educational Metaverse platform, transforming learning into an enjoyable journey. By infusing educational content with game-like mechanics, students are motivated and engaged, fostering a deeper interest in the subject matter.
Actors:	Student
Pre condition:	Gamification features and content are available within the educational Metaverse platform. Educators have the option to integrate gamification elements into their courses.
Flow:	The student accesses educational content within the Metaverse platform that incorporates gamification elements. The gamification elements motivate students to actively participate and compete, fostering a deeper interest in the subject matter.

	The student may exit the gamified learning experience when they have achieved their learning objectives.
	Alternate Flows: N/A
Post Condition:	The student has engaged with gamified educational content, resulting in enhanced motivation and interest.

Use Case Number:	UC-06
Use Case Name:	Multisensory Engagement
Overview:	This use case focuses on engaging students through a multisensory approach to maximize learning. By combining audio, visuals, and interactive elements, an immersive environment is created within the educational Metaverse platform.
Actors:	Student
Pre condition:	The educational Metaverse platform supports the integration of multisensory elements, including audio and visuals.
Flow:	The student accesses educational content within the Metaverse platform designed to engage multiple senses. The content combines visual elements, such as 3D graphics and animations, with audio, including narration and sound effects. Interactive elements allow the student to actively engage with the content, such as manipulating objects or participating in simulations.
	Alternate Flows: N/A
Post Condition:	The student has engaged with multisensory educational content, resulting in an immersive and reinforced understanding of the subject matter.

Use Case Number:	UC-07
Use Case Name:	Personalized Learning
Overview:	This use case focuses on tailoring the learning experience within the educational Metaverse platform to accommodate the unique preferences and learning styles of each student. Personalization ensures that students receive the necessary support and resources to succeed in their educational journey.
Actors:	Student

Pre condition:	Gamification features and content are available within the educational Metaverse platform. Educators have the option to integrate gamification elements into their courses.
Flow:	The student logs into the Metaverse platform, and the platform recognizes their unique user profile. The platform assesses the student's preferences, learning style, past performance, and progress within the platform. Based on the assessment, the platform adapts and tailors the learning content, pace, and resources to suit the student's individual needs.
	Alternate Flows: N/A
Post Condition:	The student has engaged with personalized learning content that aligns with their preferences and learning style.

Use Case Number:	UC-08
Use Case Name:	Realistic Simulations
Overview:	This use case involves providing students with lifelike simulations and experiments within the educational Metaverse platform. These simulations closely mirror real-world scenarios, offering students authentic and practical experiences that go beyond theoretical understanding, ultimately preparing them for real-world challenges.
Actors:	Student
Pre condition:	The educational Metaverse platform supports the integration of realistic simulations and experiments.
Flow:	The student accesses educational content within the Metaverse platform that includes realistic simulations. These simulations present authentic scenarios that closely resemble real-world situations relevant to the subject matter. The student actively engages with the simulations, participating in experiments, making decisions, and observing outcomes. Through hands-on experience, the student gains practical knowledge and skills that extend beyond theoretical understanding. The simulations prepare the student for real-world challenges by enhancing problem-solving abilities and critical thinking. After completing the simulation, the student may exit the learning experience.
	Alternate Flows: N/A

Post Condition:	The student has engaged with realistic simulations, gaining practical knowledge and skills.

Use Case Number:	UC-09
Use Case Name:	Accessible Learning
Overview:	This use case reflects the platform's mission to break down educational barriers and make quality learning accessible to all, with a special focus on underserved communities. It acknowledges the educational disparities between urban and rural areas and outlines how the platform aims to bridge this gap.
Actors:	Student
Pre condition:	The educational Metaverse platform is accessible to users from various geographic locations.
Flow:	The student, regardless of their geographical location, gains access to the educational Metaverse platform. The platform offers content and resources that cater to diverse learning needs, including those of underserved communities. Educators and content developers can adapt and localize educational content to address specific regional and cultural requirements. The platform's commitment to accessible learning helps bridge educational disparities, ensuring that students from all backgrounds can access quality education.
	Alternate Flows: N/A
Post Condition:	Students from diverse backgrounds, including underserved communities, have access to quality educational resources and opportunities.

Use Case Number:	UC-10
Use Case Name:	Virtual Guidance Counselor
Overview:	This use case involves the integration of a virtual guidance counselor or mentor system into the educational Metaverse platform. This AI-driven counselor offers personalized advice to students, assisting them in choosing educational paths, setting goals, and navigating their learning journey.
Actors:	Student

Pre condition:	The educational Metaverse platform has integrated AI capabilities for virtual counseling.
Flow:	The student logs into the Metaverse platform and accesses the virtual guidance counselor feature. Students can engage in real-time discussions with the virtual counselor to seek further guidance. The AI-driven guidance enhances the student's overall educational experience, supporting them in achieving their academic and career objectives.
	Alternate Flows: N/A
Post Condition:	Students have received personalized guidance and support from the virtual counselor, enhancing their educational journey. The platform continues to refine the AI-driven guidance system based on user interactions and feedback.