SIMULANDING

**HIGH-LEVEL PROJECT SUMMARY**

‘Simulanding’ is a fun, educational game based on a real-world physics model and NASA open data to make objects in the game look and behave as in reality. This offers a better gaming experience in a more immersive environment. The game takes players step by step from launching rockets to landing spacecraft on other planets. At each stage, we add in knowledge for players to learn and develop their memory through playing the game. We believe this game has unlimited potential to act as an educational tool or interface. By adding more rockets and planets in future updates we can create an array of different scenarios for players to both learn and play more.

**LINK TO PROJECT "DEMO"**

<https://youtu.be/_meMo7hyTqw>

**LINK TO FINAL PROJECT**

<https://gamejolt.com/games/delta_2021/651890>

**DETAILED PROJECT DESCRIPTION**

* **Introduction**

In a 3D-realistic universe, you can travel using a variety of historic famous rockets into deep space and then landing on either the moon or Mars. During the journey, participants learn basic orbital mechanics and more about rockets.

* **Motivation**

We aim to utilize the power of gaming and 3D drawing to bring space travel back to earth and closer to the public. We first look back at how space pioneers travelled through vast amounts of space to land on the moon, Today, with advanced technology we have better capabilities for further exploration of our moon and could potentially stay for longer periods. In the coming decades, we might even leave a human footprint on our red neighbor of Mars. Our intention in creating this game is to inspire people and their imagination to consider space travel in an entertaining way.

* **Background**

Since Neil Armstrong set foot on the moon in 1969, just twelve men have landed on the moon. Since the end of the space race, no one has been to the moon again but after more than fifty years NASA has announced the Artemis program to do just this. This time, it is not to compete with the Soviet Union, but to cooperate with private companies, combining strengths and applying innovative technologies. The intention is to create a permanent presence on the moon to conduct a range of in-depth research. In the foreseeable future, travelling to the moon will become the norm, and we may even see humans set foot on Mars in our lifetimes.

* **Concept**

(a) Education

In the game, we present players with basic orbital mechanics and the key points behind landing spaceships. On our way to other celestial bodies, we demonstrate how a rocket is launched and navigated through space. Allowing players to operate the spacecraft during the landing process makes it a more immersive experience. We want the game to motivate young people towards science especially in terms of aeronautics and astronautics engineering.

(b) Inspiration

To arouse the interest of the public in space, we designed the game to be simple and easy to operate. In the process, however, we have also incorporated a lot of data about planets and spacecraft. The intention is that through the process of learning while playing, players will naturally become interested in space.

(c) Future perspectives

Our game is focused on landing on the moon and Mars so far. In future updates, we intend to add more rockets and planets for players to choose and explore.

* **Design**

(a) Environment setup

Our game scenes involve the Sun, Earth, moon and Mars, and begins with a rocket launching platform on Earth. In addition, we have built eight rocket models which were developed or are developing in the U.S., including SLS, Falcon Heavy, Saturn V, Delta IV, and Starship.

(b) Game scenarios

Initially, players can choose the rocket they like, and adjust fuel levels to go to the moon or Mars. On the journey to their destination, they will get some information on space and rocket landing. The outcome is that players need to control orientation and speed to land the rocket successfully, and then explore the planet to accomplish their mission.

(c) 3D models of the eight rockets created using Inventor