**ICG PROJECT PROPOSAL**

This project will demonstrate the use of animations, modelling, illumination, textures and user interactivity through an interactive solar system where planets orbit around the sun.

1. Features
   1. **Realistic Planets** - Each planet has a unique texture and material
   2. **Orbit Animations** – Planets orbit around the sun with correct speeds
   3. **Illumination & Shadows** – The sun acts as a light source, casting light on the planets
   4. **WASD Camera Movement** – Move forward, backward, left and right in space
   5. **Solar & Lunar Eclipses** – The moon can cast a shadow on Earth and planets can block the sun
   6. **Dynamic Lighting & Shadows** – The sun’s light realistically interacts with objects
   7. **Smooth Camera Rotation** - The user can freely rotate the view to explore the planets
   8. **Zoom Functionality** – Users can zoom in/out for better views
   9. **Map & Planetary Info** – Display information about planets when close to them.
   10. **Asteroid Fields** – Randomly spawning asteroids that players must dodge.
   11. **Warp Drive / Hyperjump** – Allow fast travel to distant planets with cooldown.
   12. **Rescue Missions** – A stranded astronaut or lost probe must be found in space.
2. Controls

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| --- | --- |
| Action | Control |
| Move Forward | W |
| Move Backword | S |
| Move Left | A |
| Move Right | D |
| Move Up | Space |
| Move Down | Shift |
| Rotate Camera | Mouse Drag |
| Zoom In/Out | Scroll Wheel Up/Down |
| Increase Orbit Speed | Up Arrow |
| Decrease Orbit Speed | Down Arrow |