



ORBITUNO

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Saturn



Neptune



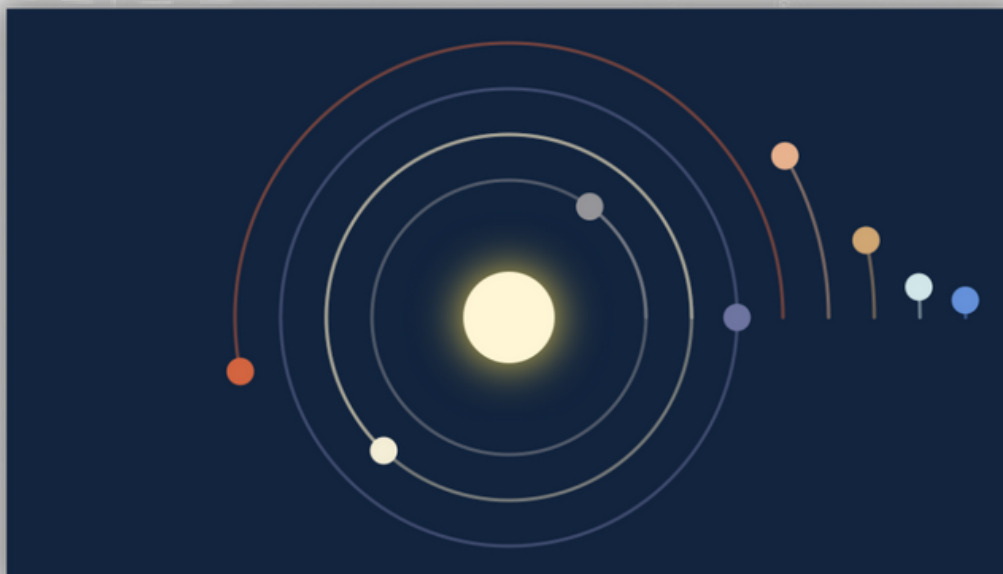
1.KINDS OF FUN

Orbituno is about **launching satellites** into orbit around a sun, **dodging** satellites already in orbit and specific obstacles. To do this, the player will have different elements to launch, each with their respective upgrades. Therefore, the types of fun present are:

- **Challenge:** The nature of the game is to try to hold on as long as possible with as many satellites as possible, so the player has a challenge to overcome.
- **Submission:** The game can be taken as a pastime.
- **Expression:** The player can customize the distribution of the satellites, generating their own unique solar system.

2.GAME SPACE

The game takes place in outer space **represented in 2D**, so **movement will also be in 2D** using the ship. Space is characterized by a **strong physics system**, so the player's satellite launches will be affected by the sun's gravity or other elements.



3.OBJECTS, ATTRIBUTES AND STATES

To move in the space, the player uses a **spaceship** that allows him to **launch satellites** and **destroy asteroids**. The attributes of this spaceship are **position**, **health**, **movement speed**, **damage** and **shooting speed**.

Orbituno has 4 types of throwable objects that orbit around the sun:

- **Satellites:** they generate solar panels in their orbit to obtain energy. The closer these solar panels are to the sun; more energy will be obtained. Its attributes are health, rotation speed, solar panel generation speed, solar panel's duration, cost and tier.
- **Shields:** they protect from asteroids. Its attributes are health, rotation speed, endurance, size, cost and tier.
- **Turrets:** they shoot automatically to near asteroids. Its attributes are health, rotation speed, damage, shooting speed, cost and tier.
- **Hive:** they repair a near object periodically. Its attributes are health, rotation speed, damage, repair cooldown, repair power, cost and tier.
- **Antimatter bomb:** they allow the player to destroy a black hole. Its attributes are cost.
- **Black hole bomb:** they allow the player to destroy a white hole. Its attributes are cost.

Moreover, there are **obstacles** (unaffected by the gravity of the sun) that are not controlled by the player, that affect the game, and which attributes aren't visible:

- **Sun:** usually in the centre of the screen, it provides energy to the solar panels. Sometimes, the sun can create solar storms that provide more energy during a limited time. Its attributes are position, gravity force, energy generation, solar storm state and danger zone.
- **Asteroids:** they spawn periodically damaging everything hit in their path (except for the sun). Its attributes are health, position, direction, size, move speed and damage.
- **Comet:** basically, the same as an asteroid, but way bigger, slower, with more health and much less frequent.
- **Black hole:** they spawn on a random position and stay there a limited time. During this time, they attract near elements and destroy them. Its attributes are position, duration, size and attraction force.
- **White hole:** like black holes, they push elements nearby instead and generate energy for near solar panel facing their way. Its attributes are position, duration, size, energy generation and pushing force.

Finally, the game uses as a **currency** the energy obtained through solar panels. The player can spend it to purchase **launchable objects** or to **upgrade** an attribute of already owned objects.

4. INFORMATION DISPLAYED

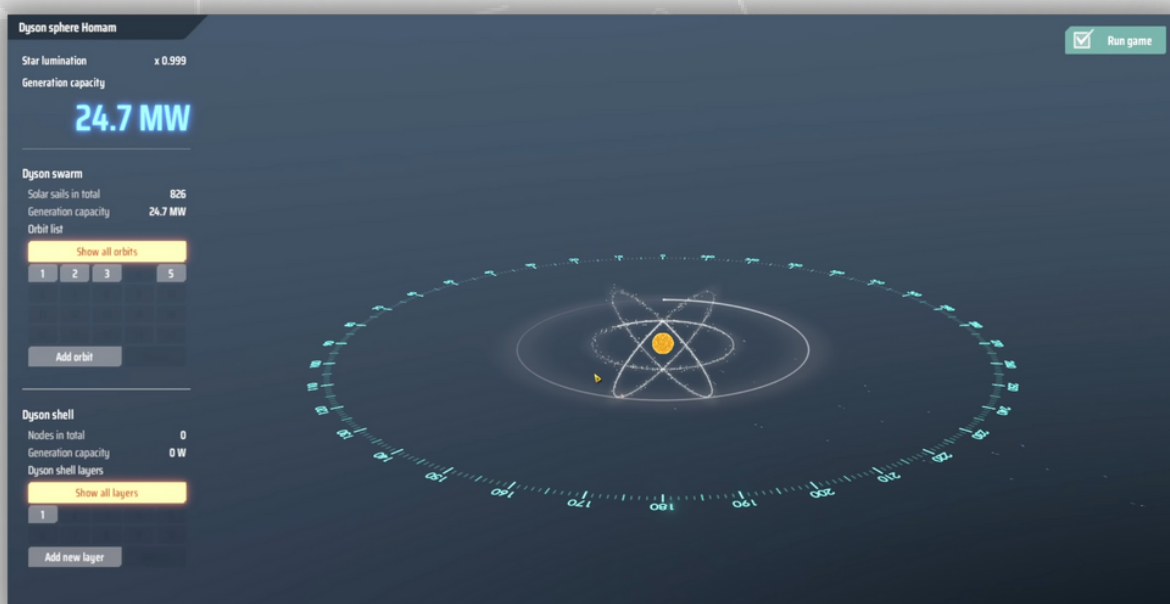
At all times, the sun will be shown with the objects launched so far (including their orbits), forming a constructed **solar system**. At the same time, the interface will be composed of **energy accumulated**, a **collapsible list** with the types of satellites and **owned improvements**, and a list of objects that can be purchased to launch.

When the player prepares to launch a satellite, the following information will be displayed from the ship:

- Force.
- Direction.
- Orbit generated.

5. ACTIONS

The player can **move** the ship and **shoot** with it. He can also **buy items**, **launch** them and **upgrade** them. These launches and upgrades will occur when the necessary energy is available, and the player prefers.



6. RULES AND OBJECTIVES

The player's goal is to **build a solar system** by launching satellites. As a satellite spends time in orbit, it will produce energy, which will be used to add more satellites.

There is a **danger zone** situated around the sun, any element that enters will be destroyed. The player is **not allowed to enter** this area. As the game progresses, the camera will **zoom out** showing more area of the map and simultaneously, the danger zone around the sun will expand.

The orbits of the satellites cannot be modified unless they interact with **black or white holes**. When a satellite collides with an obstacle and loses all its life points, it will be **destroyed**.

The game will end with one of the following conditions:

- The player decides to **abandon** the game, because he doesn't want to continue with the current solar system.
- When the player **runs out of energy** to buy satellites and does not own any.

7.ABILITIES

These are the **two** kinds of abilities that the game requests:

- **Physical:** dragging the pointer across the screen to choose an angle and force when throwing an object. Also, the game requires clicking on objects and their upgrades.
- **Mental:** predicting orbits of elements to avoid them colliding with other elements, and the capacity to manage a solar system efficiently and the energy it generates.

8.LUCK AND PROBABILITY

The probability in Orbituno resides on **possible obstacles** that can spawn. These obstacles are aiming to **destroy** satellites or **move them away** from their orbits, being able to provoke a game over if all satellites are destroyed.

9.AI

This game has **no artificial intelligence**. The representation of launch trajectories and orbits and the economy are managed **automatically**, but the various events in the game happen on a probability basis.

10.DECISION TYPES

The decision types presented in Orbituno are:

- **Problems:** when you try to launch an object, you should choose the best trajectory for that case.
- **Resources Exchange:** energy management and purchasing decisions are, in fact, resource exchanging and the basis of this game.
- **Risk/Benefit Decisions:** a determined orbit may generate more energy but be more exposed to hazards. Players must choose what risks they are willing to take when setting an orbit.

