

User Guide

1. User Login

This section of the application lets the user access it in a secured manner and any returning or new users can use the application.

1.1 Logging in

The user can login with their credentials to access the application from where they left off.

1.2 Signing up

If a user does not have an account or a user desires to create a new account, the signing up section lets you create a new username and password to be able to login the application.

2. Main Menu

Main menu where application starts from when opened. Contains buttons to create new projects or load from existing projects.

2.1 New simulation

Generates a blank, un-saved, project where the user can begin to use the simulation

2.2 Saved simulations

Section containing all existing simulation files found in the application's save file. Contains buttons with an image of the last saved project.

2.3 Quit

Closes application

3. Simulation

Simulation is the main component of the application where the user is able to create a gravity-based system of astral bodies.

3.1 Astral Creation

Astral creation is used to create new astral bodies or use existing ones. The astral bodies can then be dragged into the simulation.

3.1.1 Opening the context menu

By right-clicking the circle with the plus sign, a menu pops-up in which the user can choose from any presets, either the presets are predefined or defined by the user itself, or choose to create a new preset or a temporary astral body.

3.1.1.1 Presets

Predefined presets are basically the planets of the solar system and some of their moons and they can be used with their default values or these can be changed.

3.1.1.2 Creating a new preset

To create a new preset, the user needs to click “Add New” in the context menu, which can be found in 3.1.1. Then, fill out the required parameters and the preset can be saved by pressing on the button “Add Preset”.

3.1.2 Astral Body parameters

An astral body has 8 different parameters:

- Image path:
- Name:
- Description:
- Type
- Radius:
- Mass:
- Velocity Magnitude:
- Direction:

3.1.3 Adding an entity to the simulation

3.1.4 Resetting the astral creation menu

3.1.5 Deleting a custom preset

3.2 Control Bar

Menu located under the simulation that displays various properties, variables and buttons for the simulation

3.2.1 Simulation Controls

Basic play, pause and step buttons that control the simulation

3.2.2 Selected astral body properties

Displays a selected astral body's description, active velocity, ***

3.2.3 Time multiplier

Slider and entry box to customize the speed at which time passes in during the simulation

3.2.4 Zoom multiplier

Slider that allows for the user to visually zoom in and out within the simulation

3.3 Menu Bar

Basic application menu bar containing various essential menus and buttons

3.3.1 File

Menu bar section responsible for basic application processes and file handling buttons

3.3.1.1 Main menu

Returns the user to the main menu

3.3.1.2 Save

Disabled if the project has never been saved before. Saves/ updates the save of the current loaded project

3.3.1.3 Save as

Allows users to save a new or existing project to the project file folder or their own directory.

3.3.1.4 Load from disk

Allows the user to load an existing project file

3.3.1.5 Exit

Closes application

3.3.2 Settings

Menu bar section to access settings menu

3.3.2.1 Preferences

Opens the external settings menu

3.3.2.1.1 Menu background image

Allows the user to choose a file path for an image to change the default main menu background

3.3.2.1.2 Simulation background image

3.3.2.1.3 Style of astral path

Allows the user to change the style of the astral path lines.

3.3.2.1.4 Thickness of astral path

Allows the user to customize the thickness of the astral path lines

3.3.2.1.5 Theme

3.3.2.1.6 Font size

3.3.2.1.7 Font

3.3.2.2 Center Camera

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3.3.3 Help

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3.3.3.1 User guide

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