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# Create

Clicking on a spot on the screen will spawn a bubble with a starting velocity.

This bubble will be “zero mass” so it will not gravitationally affect anything else.

These bubbles can collide, so clicking on another bubble, will just cause an instant collision (so it may appear like no bubble was spawned).

# Explode

Simple, just click on a bubble to cause it to explode.

An explosion will cause a bubble to turn into smaller bubbles.

Bubbles that if exploded will create bubbles smaller than 1 pixel will not explode

Pressing space will cause all bubbles on the screen to explode

# Rockets

Clicking on a spot on the screen will spawn in a rocket. This newly spawned rocket will follow your mouse and snap to bubbles that you mouse over.

If you click while the rocket is not snapped to anything, the rocket will be removed.

If you click while the rocket is snapped to a bubble, it will detach from your mouse, and stay snapped to the bubble.

You can add multiple rockets at a time.

Pressing space will cause all the snapped rockets to take off (not the rocket that is attached to your mouse). This rocket will now be affected by the gravity of the bubbles surrounding it.

# Interact

In interact mode, you can click and drag on bubbles to move them around.

A bubble being interacted with will not be affected by other bubble’s gravity, but it will still be able to effect other bubbles with its own gravity.

When letting go of a bubble, it will try and maintain the last measured velocity while being moved by the mouse.

# Settings

Clicking the “S” key will open the settings window, where different options can be found.

Here you can manually select the mode and change values about spawn able objects. Values that were not compatible (eg putting a letters where a number was expected) will result in the default value being taken.

# Pre-sets

In the pre-sets window, you can choose different scenes. Clicking any of the buttons will restart the simulation with the selected scene.

If a button shows red when hovering over it, it means that that pre-set is still in development and cannot be used yet.

# Hotkeys

Enter: (Mass action) While in rocket mode, will cause all rockets to take off. While in explode mode, will cause all the bubbles to explode.

Tab: Cycles through the modes

S: Opens settings

P: Opens the pre-sets window (clicking one of the pre-set buttons will reset the program with the new scene)

Esc: Resets the program

Space: Pauses the program

Number Keys: Speeds up the program to the speed of the number pressed (pressing 4 will make the program run at 4 times the speed)

< >: Speeds up the timer from 0.1 times speed to 1 times speed. This takes care of how many milliseconds there are between timer ticks (the framerate)