

## # Potion Volume Simulation (Unity 2022.3.21f1)

This Unity project is an interactive simulation designed to teach the concept of **\*\*volume for cubes and cuboids\*\*** through a visual potion-filling activity. Students can select a shape, customize its size, and fill it using a virtual tap with real-time feedback, animations, and voice-overs.

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## ## Project Setup

### ### Prerequisites

- Unity Editor **\*\*2022.3.21f1\*\*** (2D Template)
- [DOTween](<http://dotween.demigiant.com/download.php>) (Free Tweening Library)
- TextMeshPro (enabled by default in modern Unity projects)

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## ## How to Run the Project

1. **\*\*Clone or Download\*\*** this repo into your Unity Projects folder.
2. Open it in Unity Editor (**\*\*2022.3.21f1\*\***).
3. Make sure the following packages are ready:
  - TMP\_Text (TextMeshPro)
  - DOTween (see below)
4. Navigate to `Scenes/Welcome.unity` and press **\*\*Play\*\***.

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## ## Setting Up DOTween (Required)

1. Open Unity → **\*\*Tools → Demigiant → DOTween Utility Panel\*\***
2. Click **\*\*Setup DOTween...\*\***
3. Done! You're ready to animate fills and UI.

If DOTween is not installed:

- Go to **\*\*Window → Package Manager → My Assets\*\***
- Search for **\*\*DOTween\*\*** → Import

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## ## 🎮 Scenes Overview

| Scene | Purpose |

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| `Welcome.unity` | Start screen + intro VO |

| `CustomizeShape.unity` | Select cube/cuboid and dimensions |

| `FillPotion.unity` | Interactive filling scene |

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## ## 🎯 Key Features

- Shape selection with real-time preview
- Visual potion fill using slider or auto mode
- Cube/cuboid enters with animation from spawn point
- Tap bucket shows pre-filled volume
- Sync'd audio VOs: Welcome → Instruction → Success
- Feedback on perfect fill using shimmer particles
- DOTween used for UI text and transform animation

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## ## 🔗 Inspector Setup Tips

In ``FillPotionScene``:

- Assign these manually in the Inspector:

- ``cubeObject``, ``cuboidObject``
- ``cubeFillOverlay``, ``cuboidFillOverlay``
- ``spawnPoint``, ``targetPoint``
- ``bucketFillOverlay``, ``shimmer``, ``AudioSource``
- UI: ``fillSlider``, ``startPourButton``, ``resetButton``, ``valueLabel``, ``feedbackText``
- AudioClips: ``voReady``, ``voPouring``, ``voPerfect``

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## ## 📁 Folder Structure