

Process & Decision Documentation

Entry Header

Name: Keyan Virani

Goal of Work Session

Briefly describe what you were trying to accomplish during this phase of the assignment.

- Create draggable orbs that bounce off the screen sides

If GenAI was used (keep each response as brief as possible):

Date Used: Feb 23rd

Tool Disclosure: tool name + model/version (example, ChatGPT 5.2)

- Claude Sonnet
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Purpose of Use: Development

Summary of Interaction: Briefly describe what the tool contributed. Do not paste full transcript here, that will be included in the appendix of this document.

Human Decision Point(s): Describe where you overruled, modified, rejected, or redirected the GenAI output, and why.

Integrity & Verification Note: Explain how you checked GenAI output for accuracy, bias, appropriateness, or fit with course concepts.

Scope of GenAI Use: Clarify which parts of the work GenAI did not contribute to. GenAI cannot write the whole assignment without changes.

Limitations or Misfires: Note what the tool did poorly, misunderstood, or could not account for.

Summary of Process (Human + Tool)

Describe what you did, focusing on process rather than outcome. This may include:

- Iteration between drafts or versions

- Discussion with teammates
- Testing and revision
- Moments of uncertainty, failure, or rework

Decision Points & Trade-offs

Describe one or two key decisions you made:

- What options you considered
- What changed
- Why that choice was made

These decisions should align with decision points shown in your visualization (for A1 – A3).

Verification & Judgement

Explain how you evaluated whether your decision or change was appropriate:

Examples:

- Playtesting
- Group discussion
- Peer or instructor feedback
- Comparison with course concepts
- Re-reading assignment criteria
- Ethical, representational, accessible, or global considerations

Limitations, Dead Ends, or Open Questions

Note anything that:

- Did not work as expected
- Was left unresolved
- Required compromise or simplification

Appendix

Keyan: Create a simple webapp using react where on launch, orbs fall from the sky and hit the bottom with gravity. They are heavy. The orbs

bounce and settle. they are pretty large so that they stack on top of each other, there are 8 of them. They can be dragged around and

follow physics rules. They can be bounced off the screen and respond to momentum of drag.

Claude: Created index.html with a physics-based orb simulation. Open it in your browser to see it in action.

Features:

- 8 colorful orbs drop from above with gravity
- Realistic bouncing with energy loss (they settle over time)
- Orb-to-orb collision physics (they stack and push each other)
- Drag any orb with your mouse - it follows physics when released
- Momentum is transferred based on your drag speed
- Orbs bounce off all screen edges
- Touch support for mobile devices

Physics included:

- Gravity (pulls down)
- Bounce restitution (energy loss on impact)
- Air resistance (slows movement over time)
- Friction (slows rolling on floor)
- Mass-based collision response
- Overlap separation (prevents orbs clipping through each other)

Keyan: use full screen. white background. balls spawn on top randomly, so they can stack. there is an error in physics so that balls are going inside each other and bugging

Claude: Fixed. Changes made:

1. Full screen - Canvas now fills the entire window and resizes automatically
2. White background - Clean white background
3. Staggered spawns - Orbs spawn at the top, spaced out vertically so they fall and stack naturally
4. Fixed physics overlap bug - Added 10 collision iterations per frame to properly separate orbs before they clip through each other. Separated the overlap resolution from velocity calculations.

Refresh the page to see the orbs drop and stack properly. They should no longer phase through each other.

Keyan: balls should feel heavy. have balls be stackable, and spawn a little stacked. they can be bigger. if i put a ball on top of two balls that are next to eachother, they should nt split apart.balls are also a bit sticky right now, they shouldnt be.

Claude: Done. Changes made:

1. Heavier feel - Increased gravity to 1.2, reduced bounce to 0.3, balls thud down solidly
2. Bigger balls - Radius increased from 60 to 80
3. Spawn stacked - Balls now start in a pyramid formation (4-3-1) at the top
4. Fixed stacking stability - Balls only bounce when moving fast toward each other. Slow contact uses gentle momentum averaging, so a ball resting on two others won't push them apart
5. Less sticky - Removed air resistance, small velocities now snap to zero instead of lingering

Refresh to see the pyramid drop and settle. Stacking should work properly now.

Keyan: balls are way too fast on drag. after throwing it should correlate to speed of drag.

rihgt now its always too fast

Claude: Done. Changes made:

1. Heavier feel - Increased gravity to 1.2, reduced bounce to 0.3, balls thud down solidly
2. Bigger balls - Radius increased from 60 to 80
3. Spawn stacked - Balls now start in a pyramid formation (4-3-1) at the top
4. Fixed stacking stability - Balls only bounce when moving fast toward each other. Slow contact uses gentle momentum averaging, so a ball resting on two others won't push them apart
5. Less sticky - Removed air resistance, small velocities now snap to zero instead of lingering

Refresh to see the pyramid drop and settle. Stacking should work properly now.

Keyan: balls should bounce when colliding with eachother. the cursor should become a open hand symbol when hovering one. with light text saying [THOW ME!] above the ball being hovered. this is only hovered, not drag. use colors inspired by <https://family.co/>

Evidence of process work:



