Polishing the Action Arena Code

In revising the Action Arena program, I focused on improving structure, readability, and realism in the 2D animation. I reorganized the code into logical modules, separating responsibilities such as input handling, physics updates, and rendering. This modular approach makes the code easier to maintain and extend in the future. I also applied consistent indentation, spacing, and descriptive comments to follow coding best practices. Function names and variables were made more meaningful to clarify their roles in the game.

The changes included refining the physics system with velocity vectors, friction on the paddle, and elastic circle-to-circle collisions. Bricks were enhanced with multiple states and color changes to indicate durability, adding visual feedback and depth to gameplay. I designed the spiral and arc brick patterns to create variety and challenge, encouraging player engagement. My intent behind these adjustments was to provide a fully realized 2D experience with both smooth animation and interactive game mechanics. By approaching the project step by step—focusing first on physics, then visuals, and finally polish—I achieved a balanced and executable program.

Reference  
Gamma, G. et al. (1994). *Design patterns: Elements of reusable object-oriented software*. Addison-Wesley.