**Tiny Racing**

**Game Overview:**

**Genre**: 2D Racing Game

**Theme**: Player will control tiny creatures that race through unconventional environments like kitchen counters, gardens, or bookshelves.

**Main Goal:** Be the first to cross the finish line while avoiding obstacles and using power-ups to gain an advantage.

**Core Features:**

1. **2D Racing Mechanics:**

* Players control tiny creatures with basic movement (left, right) and jumping.
* A "speed boost" mechanic allows players to go faster temporarily.

1. **Obstacles:**

* Players must avoid environmental obstacles like spilled water, crumbs, fallen books, and small holes.
* Obstacles cause players to slow down or get stuck momentarily.

1. **Power-Ups and Traps:**

* Power-ups scattered along the track give players advantages like speed boosts, temporary invincibility, or jumping boosts.
* Traps can be dropped to sabotage opponents, like sticky honey that slows down others or small holes that make them fall off the track.

1. **Dynamic Tracks:**

* Racetracks based on everyday environments like a kitchen counter (with utensils and food), a garden (with leaves, puddles, and rocks), or a bookshelf (with books and small toys).
* Multiple paths and shortcuts to add variety and strategy to the race.

1. **Multiplayer:** (Optional)

* Up to 4 players can race against each other.
* AI-controlled opponents if there are fewer than 4 players.

**Note: AI-Controlled bots must be in the game if not multiplayer** (Pratham)

Distribution

* Get yourself Assigned instead of those team member roles…

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| **Team Member-1:** Player Controls and Mechanics   * Task: Implement core movement mechanics (left, right, jump) and the speed boost. * Files/Areas: Focus on the Player class and any related physics/movement code. * Communication: Make sure to inform others if new variables or methods need to be accessed globally. | **Team Member-2:** Obstacles and Power-ups   * Task: Design and implement environmental obstacles and power-ups (speed boosts, invincibility). * Files/Areas: Work on Obstacle and PowerUp classes and ensure they can be added easily to tracks. * Communication: Ensure consistent interfaces so the player and level design teams can integrate easily. |
| **Team Member-3:** Track Design and Dynamic Environments   * Task: Create the level layouts, including multiple paths, dynamic elements, and interactive obstacles like moving utensils or falling books. * Files/Areas: Work on the Track class or scenes and level design files. * Communication: Coordinate with the obstacle/power-up team for seamless integration. | **Team Member-4:** AI Opponents and Multiplayer (Optional)   * Task: Implement AI-controlled opponents and multiplayer mechanics (if applicable). * Files/Areas: Focus on the AIPlayer class or MultiplayerManager, ensuring AI reacts to obstacles, power-ups, and dynamic environments. * Communication: Coordinate with the player controls and level designers for AI integration and pathfinding. |