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Project Report: Juan Run Game

The Juan Run game is a simple yet engaging endless runner game built using the Flutter framework and the Flame game engine. The player controls a character named Juan that runs endlessly, avoiding mythical creatures. This is sequel of our project named "Lakbay" from Human Computer Interaction (HCI). This report outlines the design, development process, and technical decisions made during the creation of the game.

Design:

Game Concept: The game is designed as an endless runner where the player controls a character named Juan Dela Cruz.

User Interface: The user interface includes menus such as the main menu, pause menu, game over menu, and settings menu, providing options for starting the game, pausing, adjusting setting for sound and effects.

Graphics: Simple pixelated graphics are used for the game elements including the Juan character, mythical creatures , and backgrounds, ensuring a smooth gameplay experience.

Gameplay Mechanics: The gameplay involves the Juan automatically running forward, with the player tapping or pressing keys to jump over obstacles.

Development Process:

Technologies Used: Flutter for building the UI, Flame for game development, Hive for local data storage.

Widget Architecture: The game utilizes various Flutter widgets for structuring the UI components such as MaterialApp, Scaffold, and custom widgets for menus and HUD elements.

Game Loop: Flame's GameWidget is used to handle the game loop, updating the game state and rendering frames.

Overlay System: Flame's overlay system is leveraged to manage different screens and menus within the game, such as the main menu, pause menu, and game over menu.

Data Persistence: Hive is used for local data storage, allowing player data and settings to be saved and retrieved across sessions.

Technical Decisions:

Initialization: `WidgetsFlutterBinding.ensureInitialized()` is used to ensure all bindings are initialized before initializing Hive and Flame, especially important for handling platform channels.

Hive Integration: Hive is initialized with the application documents directory, ensuring data persistence across app launches.

Fixed Resolution Camera: A fixed resolution camera is used to maintain consistent gameplay experience across different screen sizes.

UI Theming: Default theme settings are applied for consistent styling of UI elements like buttons.

Controlled Game Widget: `GameWidget<JuanRun>.controlled()` is used to control the game's loading process and overlay management.

The Juan Run game is a successful implementation of an endless runner game using Flutter and Flame. By following a clear design, leveraging appropriate technologies, and making sound technical decisions, a polished and enjoyable gaming experience has been achieved.

Explain the reasoning behind chosen theme, mechanics and filipino elements

Our theme is centered around the old Philippines, showcasing the national personification of the Philippines and popular mythical creatures from Filipino folklore. We chose this theme to revive the rich folklore of the Philippines, where characters from movies and traditional stories, known as "kwentong matatanda," remain vivid in our memories. Our main character is Juan Dela Cruz, a fictional character revered for his supernatural abilities and his role as a protector against creatures like the aswang.

In addition to Juan Dela Cruz, we feature mythical creatures such as the Kapre, a tree giant characterized by its tall, dark, hairy, and muscular appearance, often noted

for its strong body odor and penchant for sitting in tree branches while smoking. Another creature in our lineup is the manananggal, a mythical being capable of separating its upper torso from its lower body, sporting fangs and wings reminiscent of a vampire. Lastly, we include the tiyanak, a vampiric creature in Philippine mythology that disguises itself as a toddler or baby.

In this game, players take on the role of Juan Dela Cruz, navigating him through a challenging world filled with enemies. Juan starts his journey with 5 lives, symbolizing his resilience and determination to overcome the challenges ahead. The player's objective is to help Juan evade these enemies by timing his jumps carefully. Each successful jump earns points, while colliding with an enemy results in the loss of a life.