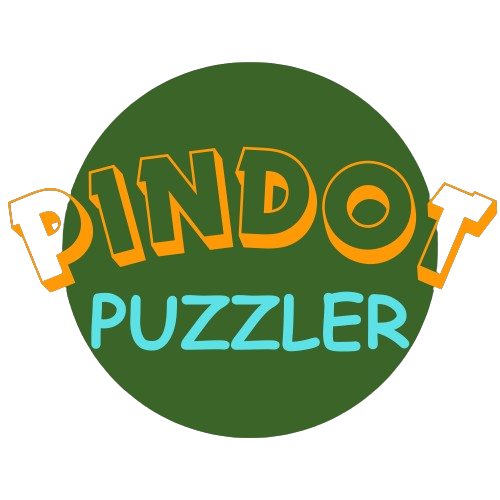
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**Introduction**

Pindot Puzzler is a sliding picture game developed to celebrate Filipino culture and heritage while providing an entertaining gaming experience. This project report outlines the design, development process, and technical decisions behind the creation of Pindot Puzzler.

In Pindot Puzzler, players embark on a virtual tour of the Philippines, solving puzzles set against iconic landmarks, festive celebrations, and stunning landscapes. Our aim is not just to entertain but also to educate, offering players insights into Filipino history, traditions, and natural wonders.

Through simple gameplay mechanics and captivating visuals, Pindot Puzzler aims to spark curiosity and foster a deeper appreciation for Filipino culture. With every puzzle solved, players uncover a piece of the Philippines, fostering a sense of connection and pride in its rich heritage.

**Design**

The design of Pindot Puzzler was centered around creating a visually appealing and culturally immersive experience for players. Key design elements include:

* **Filipino Theme:** The decision to incorporate Filipino themes, such as landmarks, festivals, and landscapes, was made to showcase the beauty and diversity of Filipino culture. This theme was reflected in the artwork, puzzle images, and educational content throughout the game.
* **Challenging Puzzles:** The design of Pindot Puzzler includes a range of three difficulty levels. These levels consist of easy, medium, and hard tiers, each presenting unique sets of images to solve. In the easy level, players are tasked with arranging 9 tiles depicting various animals. Moving up to the medium level, which comprises 16 tiles, players encounter images of Filipino clothing (damit). Finally, the hard level features 25 tiles showcasing stunning landscapes of the Philippines. The sliding puzzle mechanic was deliberately chosen for its simplicity and intuitive gameplay, allowing players to focus on solving puzzles without the burden of complex controls.
* **Educational Content:** To enhance the player experience, educational content about Filipino history, traditions, and landmarks was integrated into the game. This decision was made to provide players with not only entertainment but also an opportunity to learn about the rich heritage of the Philippines.

**Development Process**

The development process for Pindot Puzzler involved several key stages:

* **Conceptualization:** The initial concept for Pindot Puzzler was developed based on the idea of creating a sliding picture game with a Filipino theme. Brainstorming sessions were held to flesh out the concept and determine key features and mechanics.
* **Artwork and Assets:** Artwork and assets were created to bring the Filipino theme to life. This involved designing puzzle images, background art, and UI elements that reflected the cultural elements of the Philippines. This involved Filipino Heros, Filipino history, and UI elements that reflected the cultural elements of the Philippines.
* **Programming:** The game was developed using a combination of Flutter for the UI Design and Dart was used as a programming language, and game development tools. The sliding puzzle mechanic was implemented using a custom algorithm designed to rearrange puzzle pieces based on player input.
* **Testing and Iteration:** Throughout the development process, extensive testing was conducted to identify and address any bugs or issues.

**Technical Decisions**

* **Cross-Platform Compatibility:** One of the primary technical decisions was to ensure cross-platform compatibility for Pindot Puzzler. To achieve this, Flutter was chosen as the framework for development. Flutter allows for the creation of natively compiled applications for mobile, web, and desktop from a single codebase, streamlining the development process and ensuring a consistent experience across different platforms.
* **Custom Sliding Puzzle Algorithm:** A key technical aspect of Pindot Puzzler is the implementation of the sliding puzzle mechanic. To provide a smooth and intuitive gameplay experience, a custom algorithm was developed to handle the rearrangement of puzzle pieces. This algorithm efficiently calculates the valid moves for each puzzle configuration, ensuring that players can solve puzzles with ease while still providing a challenge.
* **Integration of Educational Content:** Another technical decision was the integration of educational content seamlessly into the gameplay experience. This involved designing a system to deliver informational tidbits about Filipino history, traditions, and landmarks at appropriate moments during gameplay. To accomplish this, there are images that are implemented in the application which is displayed to players as they progressed through the game.
* **Performance Optimization:** Performance optimization was a crucial consideration, particularly for mobile devices with varying hardware capabilities. Techniques such as texture atlasing, sprite batching, and memory management were employed to optimize resource usage and ensure smooth performance across a wide range of devices. Additionally, asynchronous loading of assets and level data was implemented to minimize loading times and enhance the overall user experience.
* **Accessibility Features:** Inclusivity was a priority in the development of Pindot Puzzler, leading to the inclusion of accessibility features to accommodate players with different needs. This involved implementing options to mute and unmute the music in the game and choose the difficulty level to ensure that the game is accessible to as many players as possible.