



DESIGN OF VISUAL ASSETS AND SUPPORTING ELEMENTS OF THE SAUPGEN GAME

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Abstract

Purpose: designing character design assets, items, obstacles, and background for the development of the Saupgen game.

Research methods: research starts from determining the visual style based on the game concept, media, and user segmentation. After that, visual study processes are collected into a moodboard, brainstorming is carried out to get appropriate visuals in the form of design sketches, and then the visualization stage using a computer/laptop device.

Findings: through the process of visual study, brainstorming, and visualization, suitable design assets were obtained in the form of boy character assets in typical. The character assets resulted in a design of a boy wearing traditional Balinese clothing, namely udeng and kamen. The collected letter item assets and obstacle assets used gadgets and game consoles. For the background assets, the chosen atmosphere was a beautiful Balinese rural panorama environment with mountains, coconut trees, and temple buildings.

Implications: Obtain game visual assets that are suitable for the children's market segmentation.

Keywords: visual assets, game, soupngen, vector design

1. INTRODUCTION

Visual asset design is a fundamental component in digital game development, particularly Android-based two-dimensional games. Visual assets serve as the primary elements that build the identity, atmosphere, and gaming experience desired by the designer[1]. In the context of game design, visual assets include characters, environments, icons, user interfaces, and supporting elements such as animation and typography[2].

Theoretically, visual asset design is based on graphic design principles and visual perception theory. Applying Gestalt theory to game design helps players understand the game's context more quickly through visual order and unity[3]. The visualization process is crucial to realizing this, ensuring players can easily understand every message and sign in the game. Vector art is a popular choice for visualizing game visual assets, based on observations on Google Play. This is because vector art techniques and GPU



optimization have proven effective in producing efficient assets that are compatible with the limitations of Android devices[4].

The importance of visual assets in 2D Android-based games lies in their ability to build emotional engagement and enhance the user experience. Studies show that the quality of visual assets directly impacts player satisfaction and game appeal [5][6]. Well-designed visual assets also strengthen the narrative, make navigation easier, and increase players' retention of the characters and the game world[7].

Beyond technical aspects, visual assets also serve as a means of conveying cultural and local values. Research on Android-based educational games emphasizes the integration of traditional visual elements as an effort to preserve local culture [8]. This is in line with global trends that emphasize the importance of visual representation that is authentic and relevant to the social context [9][10].

Android-based games, like Saupgen, require visual assets that are not only aesthetically appealing but also technically lightweight in order to run optimally on a wide range of devices [11]. Therefore, the visual asset design process must simultaneously consider artistic, technical, and functional aspects. With a systematic approach, visual assets can become a significant differentiating factor in the increasingly competitive mobile gaming industry [12].

2. RESEARCH METHODS

Designing game assets starts with determining the visual style based on the game concept, media, and user segmentation. In designing game assets for the Saupgen game, the style used is a vector design style. Next, collect data related to the vector style used in existing games. Apart from that, it is also supported by conducting literature studies in journals and proceedings related to games and vector design styles. The results of the visual study process are collected into a moodboard. After that, brainstorming is carried out to get appropriate visuals in the form of design sketches, and then enter the visualization stage using a computer/laptop device.

3. FINDINGS

Designing the visual assets for the Saupgen game begins with defining the game's basic concept, including its visuals. The Saupgen game is intended as an educational medium for learning Balinese vocabulary based on literature for first-grade elementary school students. Based on this, Balinese culture is the primary focus of the game, and therefore, Balinese cultural elements will be prioritized in the game's visuals.

Based on this basic concept, a visual study was conducted online to determine which Balinese cultural elements could be used in the visual assets, particularly for the game's characters and backgrounds. A collection of images, including photos, vectors, and typography that align with the game's concept, was neatly compiled into a moodboard. This was followed by brainstorming to produce basic sketches. These were then digitized in vector processing software, Adobe Illustrator, to create vector designs. The design asset creation process is divided into four parts: character assets, background assets, obstacles, and supporting assets.

The character assets consist of one main character who acts as a representative of the player in playing the Saupgen game. The character is depicted as a Balinese child

wearing clothing that is characteristic of Balinese identity. This character selection is based on the primary segmentation approach, namely, elementary school children. The visual preparation of this character is based on traditional Balinese clothing commonly worn on Thursdays and certain days. To provide a relaxed and modern impression, the clothing and color provisions are also taken from the typical Balinese children's game, *dolanan*, which can be seen in the moodboard below. It can be seen in several sources that some people wear clothing that is characteristic of Bali, such as *udeng*, *kamen* worn higher than the knee. To support the process of creating the character vector design, the use of similar vector images that visualize Balinese children's characters was also collected.



Figure 1. Visual study of character
[Source: author documentation]

Based on the visual analysis of the characters above, there are graphic idioms that can be represented as visual characters in the game through clothing elements, namely wearing a t-shirt, a *kamen* above the knee, and a *udeng* (traditional head covering). The colors used take references from traditional game clothing to give a fun and cheerful impression. The use of *udeng* and *kamen* was chosen to strengthen regional identity and local wisdom. The use of the *kamen* on the character is made higher than the knee in accordance with the visual references obtained. The choice of warm colors, such as blue

and red to purple represents enthusiasm, joy, and challenges in the game. The results of the brainstorming produced the following character design.



Figure 2. Character assets
[Source: author documentation]

The next visual assets are items and obstacles. The asset item in question is something that players collect to complete the game. Meanwhile, an obstacle asset is something that hinders the player, which, if hit will make the player fail. For the process, the items collected are in the form of words in Balinese, so the manufacturing process only uses the Grobol font and uses brown with white strokes. For obstacles, taking ideas from modern games is one of the problems children have in learning, so sources were chosen in the form of cellphones, several game consoles and the figure of an angry teacher. Literacy in its creation was collected from various sources on the internet. Starting from looking for examples of obstacles, cellphone literacy, game consoles, both photos and vector.



Figure 3. Visual study of item asset dan obstacle assets
[Source: author documentation]

Based on brainstorming, the Tajog in-game item asset was determined to be a star. The star visual is designed with gradient colors as its accent. There will be two obstacle assets: a chicken and a rock. The rock obstacle is created with a large, round rock visual. This shape was chosen because the rock will be animated rolling. The rock visual is dominated by the use of gray with minimal shading. The chick obstacle is created with a basic round shape based on the obtained reference. The chicken visual is designed without legs, because in the game, the chicken will be animated moving quickly left and right to ward off players.



Figure 4. Item and obstacle assets
[Source: author documentation]

Background assets are images of the background environments in the Saupgen game. A visual study was conducted to collect several images from similar game layouts, namely endless runners adapted for Saupgen. The backgrounds were designed with a

Balinese panorama in mind, creating a beautiful and tranquil atmosphere to create a comfortable environment for players. The Balinese rural panorama was chosen because the beautiful natural atmosphere is a hallmark of Bali.



Figure 5. visual study of background
[Source: author documentation]

As a result of the brainstorming session, it was decided that the game's environment would be a pristine Balinese village setting. Mountains, hills, coconut trees, and temple buildings are powerful objects that depict the natural Balinese rural atmosphere. The visual forms of the objects used are kept simple with repeating patterns.



Figure 6. background assets
[Source: author documentation]

There are also supporting assets and interface designs that will be used in the game later, such as buttons, notifications, game titles, and other assets that will be used.



Figure 7. Supporting assets
[Source: Penulis]

The visualization results of using game visual assets in compiling game pages are as follows:

Table 1. Implementation Aset

No.	Image	information
1		Home



4. CONCLUSION

The visual assets of the Saupgen game were designed through a visual study process by collecting photos and existing design visuals from various sources. The results of the visual study were followed by brainstorming to produce the required visual assets. All visual assets were created in vector style, ranging from characters, items, obstacles, to backgrounds. The character assets resulted in a design of a boy wearing traditional Balinese clothing, namely udeng and kamen. The collected letter item assets and obstacle assets used gadgets and game consoles. For the background assets, the chosen atmosphere was a beautiful Balinese rural panorama environment with mountains, coconut trees, and temple buildings. Most of the coloring, shading, and dimensioning techniques were done using solid color techniques, and some used gradient colors. It is hoped that the resulting visuals will suit the game's target

segmentation, elementary school children, support the game design, and help elementary school children play while learning later.

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