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## PRESERVING RUMAH TIANG 12, KELANTAN THROUGH DIGITAL INFORMATIVE INTERACTIVE EXHIBITION: MUTIA KITA

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### ABSTRACT

"Mutia Kita" is a project dedicated to the digital preservation and presentation of traditional Malay houses, aiming to raise awareness of their cultural and architectural significance. This initiative highlights the importance of safeguarding these heritage structures by creating an interactive digital exhibition designed to engage the community, particularly younger generations. The primary objective of the project is to educate the public on the role traditional Malay houses play in expressing and preserving the identity of Malay culture. By digitising and presenting these houses in an accessible and engaging format, the exhibition offers a deeper understanding of their historical, architectural, and cultural value. The qualitative research methodology adopted includes interviews and case studies of traditional Malay House : Rumah Tiang 12 in Kelantan, which provide valuable insights into these houses' unique features and history. The final product, developed using PowerPoint, serves as an interactive platform where visitors can explore the houses' unique design, context, and conservation efforts digitally. Through this approach, the project is not only accessible to all but can inspire appreciation for traditional Malay houses and foster a collective commitment to their preservation for future generations.

**Keyword:** Traditional Malay house, Rumah Tiang 12, Preservation, Interactive exhibition, interface

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### INTRODUCTION

Traditional Malay houses are among the most significant elements of Malaysia's cultural heritage, showcasing the creative and aesthetic skills of the Malay people. These houses are perfect response to the local climatic conditions and reflect the way of life of their inhabitants. However, the number of these traditional Malay houses is steadily declining, highlighting the need for a more effective approach to their preservation.

'Mutia Kita' is an innovative approach aimed at making the study of traditional Malay houses both engaging and visually captivating for all generations, with a particular focus on the younger audience. This initiative seeks to introduce the rich heritage of Kelantan's traditional Malay houses to the wider community. For this project, a digital interactive exhibition featuring informative content and quizzes was chosen to promote these houses. This project aims to create a digital, informative, and interactive exhibition that promotes a deeper understanding of the importance of traditional Malay houses as they reflect and express the identity of Malay culture through architectural design. The selected house for digitisation is the 'Rumah Tiang 12.'

There are many factors to realise this idea of preserving Rumah Tiang 12. For this project, the objectives are as follows:

1. To identify the crucial information of Rumah Tiang 12 spaces and interior design.
2. To explore the informative, interactive exhibition in enhancing the preservation of Rumah Tiang 12.
3. To recommend a platform for digital informative, interactive exhibition to preserve Rumah Tiang 12.

### LITERATURE REVIEW RUMAH TIANG 12, KELANTAN

Azlan, Shukri, Aziz, and Taib (2021) mentioned that Traditional Malay Houses refer to the vernacular dwellings of the old Malays, the ethnolinguistic group that settled down Sumatra, the coast of Borneo and the Malay Peninsula. Therefore, it is unsurprising that so many diverse architectural styles can be developed in houses regionwide. To ensure that future generations can appreciate, educate themselves on, and comprehend the value of diversity and harmony, preserving the wealth of culture surrounding Malaysian architectural history is crucial.

Rumah Tiang 12 has a distinct architectural structure with distinguishing features and traits, particularly those that take the form of long-roofed residences with *serambi* (verandah). The collections of older, traditional houses built at various times have unique architectural features. The roof shapes and the eight-foot elevation of the floor above the ground level were similar to the way most traditional houses in this part of the region are built. This house feature a single ridge and two roof coverings that run the length of the building.

Rumah Tiang 12 features a few characteristics which are elevated floors above ground level and a single-ridged roof form. Have a long, straightforward gable roof and pairs of *pemeleh* (gable boards), which are typically found at both ends, are its distinguishing features. This house is the oldest, most typical, and simplest type of house (over a century old). Advance addition system that enables extensions and additions of numerous types and variations. Carved panels fitted on the upper section of the side walls of convex and decorative walls. Figure 1 shows the typical types of Rumah Tiang 12 in Taman Mini Malaysia, Melaka, and Figure 2 shows the unique layout of the house.



Figure 1: Rumah Tiang Dua Belas in Taman Mini Malaysia, Melaka  
(Source: Abdullah, 2021)

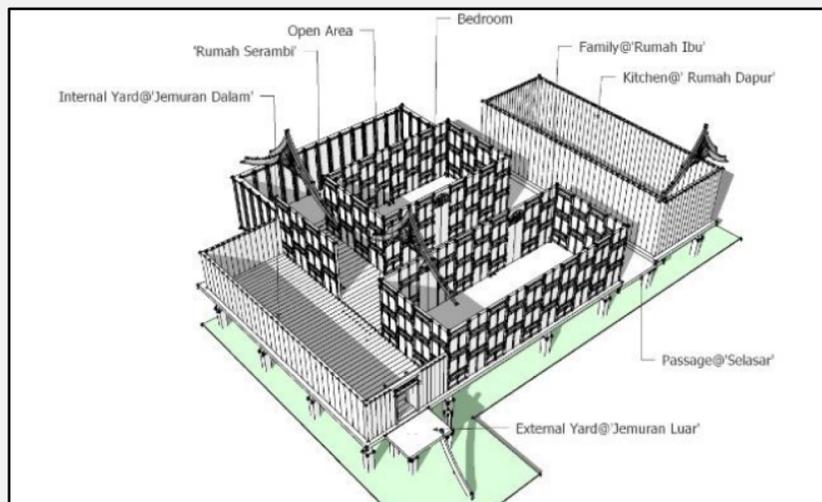


Figure 2: Spatial layout of Rumah Tiang Dua Belas  
(Source: Abdullah, 2021)

## DIGITAL INFORMATIVE INTERACTIVE EXHIBITION

According to Koster (2022), a digital informative interactive exhibition typically incorporates several characteristics to engage and educate visitors in an interactive and immersive manner. Mentioned below are some of the main features of information interactive exhibition:

- i. The exhibition largely focuses on digital content, such as movies, animations, photographs, and interactive features, to enlighten and interest visitors.
- i. The display promotes contact and participation from visitors. To allow visitors to interact with the material and control the exhibits, it might contain touchscreens, interactive displays, augmented reality (AR), virtual reality (VR), motion sensors, and other technologies.
- i. The goal of digital exhibitions is to make information readily available. They might have interactive maps, multimedia guides, search capabilities, or QR codes that users can scan to access related or extra content.

- iv. Exhibitions may provide visitors with personalised experiences. This can include the option to save or save particular material for later reference, content customisation depending on visitor choices, interactive quizzes or surveys to gather information and offer tailored recommendations.
- iv. To engage visitors and improve their learning experience, many digital exhibitions include game-like aspects. This can include activities that promote involvement and memory retention, such as tests, obstacles, puzzles, or interactive games based on the theme of the exhibition.
- iv. To produce a rich and interesting experience, digital exhibitions frequently make use of different sensory elements. To increase the sense of immersion and make the exhibition more memorable, this may comprise audiovisual displays, surround sound, haptic feedback, fragrances, or even temperature and lighting alterations.
- iv. Social media sharing elements are frequently incorporated into digital exhibitions, enabling visitors to tell their friends and networks about their favourite exhibits, experiences, or discoveries. This invites participation outside of the actual exhibition location and fosters online debates and additional research.
- iv. To understand more about visitors' behaviour, preferences, and learning patterns, exhibitions may use data collecting and analytics systems. The content, interaction, and overall visitors' experience of the exhibition can all be enhanced in the future using the data from this survey.

It is important to note that the specific characteristics of a digital informative, interactive exhibition can vary depending on the subject matter, target audience, available technology, and the goals of the exhibition organisers.

## METHODOLOGY

Several data collection methodologies have been employed to collect data and information, ensuring the accuracy and reliability of the findings. The qualitative methods used include case studies, interviews, and software tools. These approaches were chosen to meet the aims and objectives of this project effectively.

The case studies selected for this project encompass both local and international examples. The regional case studies are the National Science Centre in Kuala Lumpur and the National Art Gallery in Kuala Lumpur. The international case studies include the National Museum of Korea in Seoul and the Gallery of Horyuji Treasures in Tokyo. These case studies were selected based on their utilisation of similar digital interactive exhibitions, which align with the approach chosen for showcasing Rumah Tiang 12.

The following method involved interviewing Encik Latif from Galeri Petronas to gather insights on digital exhibitions in determining the most suitable type of exhibition to present Rumah Tiang 12.



## RUMAH TIANG 12 DIGITALIZATION

Rumah Tiang 12 has been digitised to provide a comprehensive view of both the interior and exterior of the house. Figures 5–9 depict the exterior, while Figures 10–18 illustrate the interior.



Figure 5: Perspective view 1 of Rumah Tiang 12



Figure 6: Perspective view 2 of Rumah Tiang 12



Figure 7: Perspective view 3 of Rumah Tiang 12



Figure 8: Left view of Rumah Tiang 12



Figure 9: Right view of Rumah Tiang 12



Figure 10: Serambi of Rumah Tiang 12



Figure 11: Left view of Rumah Ibu



Figure 12: Right view of Rumah Ibu

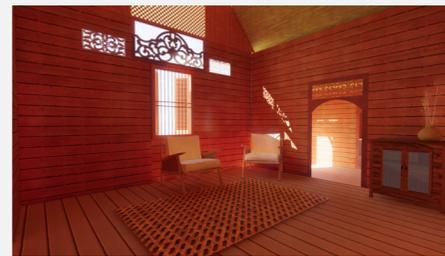


Figure 13: Left view of Rumah Tengah



Figure 14: Right view of Rumah Tengah

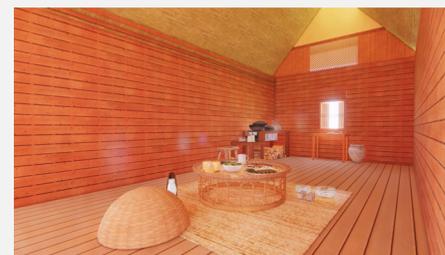


Figure 15: Dining area of Rumah Tiang 12



Figure 16: Rumah Dapur overview in Rumah Tiang 12



Figure 17: Selasar of Rumah Tiang 12



Figure 18: Jemuran of Rumah Tiang 12

## PRODUCT MAKING

The product development began with research into the available information on Rumah Tiang 12 and digital interactive exhibitions. The digitalisation of the house was initiated using SketchUp for modeling and Enscape for rendering. Following this, the design of the informative, interactive exhibition commenced, with three design proposals being prepared. The best proposal was selected, and the chosen design was further developed. The final outcome was then compiled in a PowerPoint presentation.



Figure 19: Research on Rumah Tiang 12



Figure 20: Digitalising Rumah Tiang 12 using SketchUp and Enscape



Figure 21: Informative exhibition preparation of Rumah Tiang 12 in PowerPoint Presentation

## SKETCHUP DRAWING

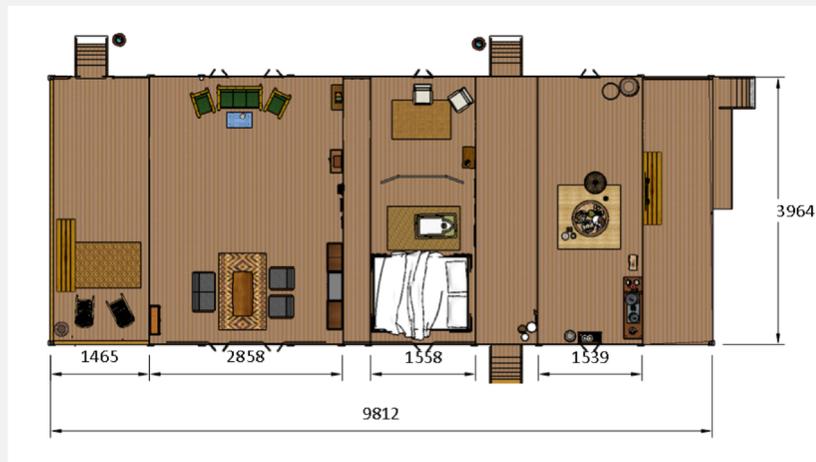


Figure 22: Floor Plan of Rumah Tiang 12



Figure 23: Front View

Figure 24: Rear View

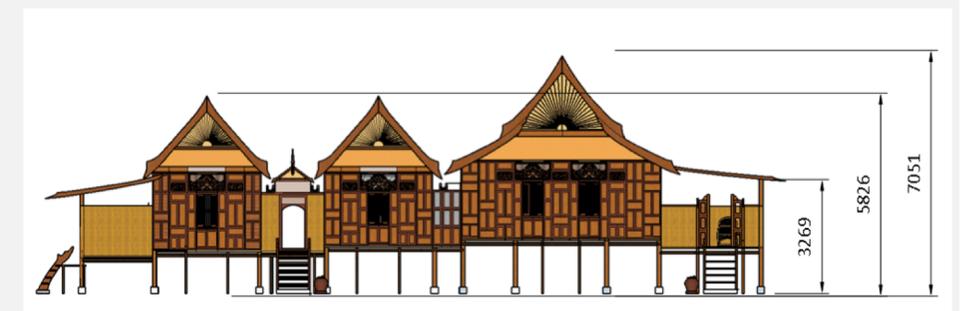


Figure 25: Left View



Figure 26: Right View

## FINAL INTERFACE DESIGN

After careful consideration, Design 2, which featured a cartoon-style approach, was selected. However, the final design incorporates several enhancements and modifications over the original Design 2. These developments include graphic elements that align more closely with the traditional Malay identity. Figures 27-31 depicted the final interface design for "Mutia Kita"

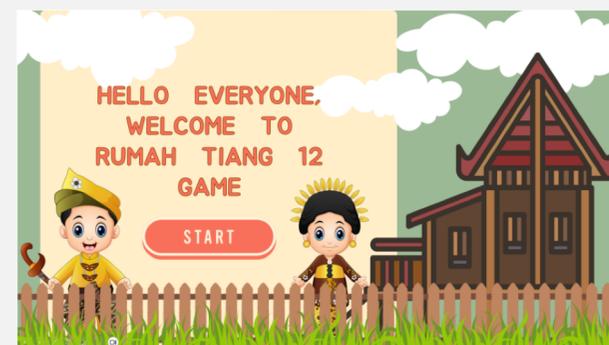


Figure 27: Welcoming pages



Figure 28: First Section



Figure 29: Second Section



Figure 30: Last Section



Figure 31: Bonus Section

## SUPERIMPOSE INTERACTIVE EXHIBITION

The interactive exhibition comes to life on electronic devices like laptops and tablets, featuring touch screen functionality for an immersive and engaging user experience. Figure 32 illustrated the welcome pages of the Rumah Tiang 12 digital informative interactive exhibition.

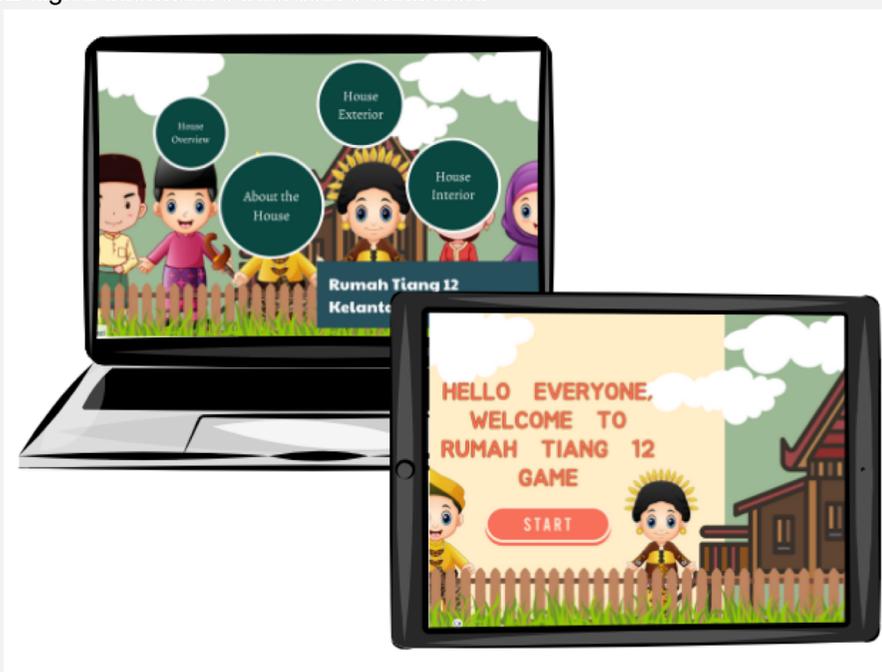


Figure 32: Final product in displayed

## CHALLENGES AND LIMITATION

This project encountered several limitations, including a restricted sample size due to difficulties in data collection, potentially affecting the overall findings. The absence of primary sources also limited the range of insights, as the abandoned Rumah Tiang 12 could only be studied through secondary sources. Furthermore, the limited prior research on digital interactive exhibitions, a relatively new concept in galleries and museums, contributed to a lack of available data for the study.

## CONCLUSION

Conserving traditional Malay houses is essential for preserving Malaysia's cultural heritage, architectural significance, and environmental sustainability. These houses embody the nation's history and identity, showcasing exceptional craftsmanship, sustainable design, and a deep connection with nature. To ensure their continued existence and appreciation for future generations, efforts should prioritise documentation, physical preservation, and raising public awareness. In cases where these houses have been abandoned, modern approaches such as digitising traditional Malay houses can offer new opportunities for engagement. By presenting this data in a digital format, communities can be drawn to explore and appreciate these historical structures. In this project, Rumah Tiang 12 has been digitally transformed into an interactive exhibition inspired by observations of local exhibits where people are more attracted to interactive experiences than traditional displays. Through this project, it is hoped that traditional Malay houses, particularly those that have been abandoned or are at risk of being lost, will gain greater recognition, especially among younger generations. Additionally, this digital form offers an accessible and cost-effective alternative for people to explore Rumah Tiang 12 without needing to visit the physical location.

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