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2022**

“Sustaining the
Resilient, Beautiful and Safe Cities
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“ Sustaining the Resilient, Beautiful and Safe
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THE MORPHOLOGY OF SPATIAL COMPOSITION HIERARCHY FOR KUTAI HOUSE

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Abstract

The purpose of this article is to find out how morphology affects the spatial hierarchical transformation of Kutai House. The main problem of spatial morphological change occurs due to several factors human behaviour and community social for space using. The objectives of this research are, to determine the spatial layout and analysis the factors and analyse of morphology affects the spatial hierarchical transformation for Kutai House. The method used is descriptive analysis and exposed to the results of field investigations. The result obtained from this research is the change of the internal spatial hierarchy of Kutai houses. The spatial hierarchy of traditional Malay houses can be determined from the public space, then space, semi-public, semi-private, and private space. The Kutai house was selected as a case study, using quantitative methods to assign the components of space found in Malay houses to determine the nature, function, and morphology change of space. At the end of the study, the spatial hierarchy of traditional Malay houses can be determined from the public space, and then space, semi-public, semi-private, and private space can be determined. The transition space from semi-public to semi-private indicates a change in the social interaction between residents and guests, the morphology of the space occurs to meet the needs of privacy at home and social relationships outside. The impact of spatial morphology for this research is the main result for the further study.

Keywords: *Morphology of Spatial Composition, Spatial Hierarchy, Transition of Space*

INTRODUCTION

Malaysia consists of 14 states, each of which has different ethnic, religious and cultural landscapes. The influence of the culture has resulted in a variety of traditional house architectural styles (Hosseini et al., 2012), which have their own hierarchical meaning and symbolic meaning behind each element of the space. However, this study only covers the transitional space management level of the Kutai house in Perak Tengah District, Perak State. The locals in Perak have their own identity, especially in expressing architectural style. With their profound knowledge in building traditional Malay houses and cultural influences, Kutai houses exist. *Rumah Kutai* or Kutai House is a traditional house type of Malays. It is an indigenous architecture in Perak and has existed since 1800. These houses can be found mainly

along in three areas along the Perak River. Kuala Kangsar, Perak Tengah and Pasir Salak (Khairudin K.F., 2018).

The sustainability of Islam can be observed by establishing a good relationship. This relationship can be called as *hablumminallah* (the relationship between man and Allah (God), *hablumminannas* (the relationship between man and man) and *hablumminal'alam* (the relationship between man and environment). The concept of the triangular relationship between God, man and the environment are regarded as a profound element in the formation of traditional houses, especially in the architectural elements of the traditional Malay house environment, especially for Kutai houses (A. Majid, 2017). Supported that the Malay traditional environment is the interaction between human, natural environment, and culture, which is then translated into the spatial design of houses and their surroundings (Ibrahim. I., 2020). In the traditional Malay house environment, the spatial hierarchy becomes an important unit.

A hierarchy is formed due to various factors. For example, the study of human behaviour in space and the study of living space are useful because it can better understand Allah, the relationship between humans and the environment: the literature The review shows that the sense of privacy can be determined by studying the cultural landscape of houses, spatial layout, hardscape, and home gardens, and studying the dimensions of appropriate analysis and interpretation theories, to determine the society of traditional Malay houses (such as Kutai houses along the Perak River) interactive adaptability and determine the transition space.

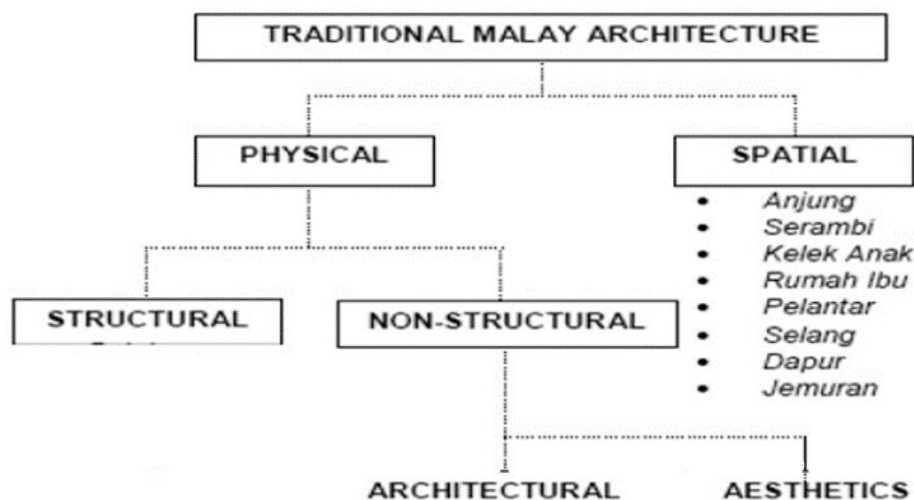
The research objective is to determine the factor, change morphology transition hierarchy of space for the Kutai house. The scope of this study covers traditional houses Perak Malay, along the Perak River in Bota, Perak Tengah district. Furthermore, the study also identifies some sample criteria to facilitate the researchers, get a sample of the study. The Kutai house is among the important criteria in the selection of the sample, because it has been classified among the types of the oldest traditional Malay houses in the district of Perak Tengah.

LITERATURE REVIEW

There are several references used in spatial elements of traditional Malay houses. With reference to Figure 1, they were listed spatial elements and further explain in detail below.

Figure 1

Decorative Elements of Traditional Malay House.



Source: Mohd Sabrizaa A.R & Sufian C.A. (2013)

Malay Traditional House

According to (Ariffin, 2004), in Perak, they have the old traditional houses dubbed Kutai House. Development of technology and modernization, construction of a traditional Malay house had been forgotten and the existing house already unoccupied again on the determinants of mortality and migration. However, due to age and traditional features that have made it's more interesting to study.

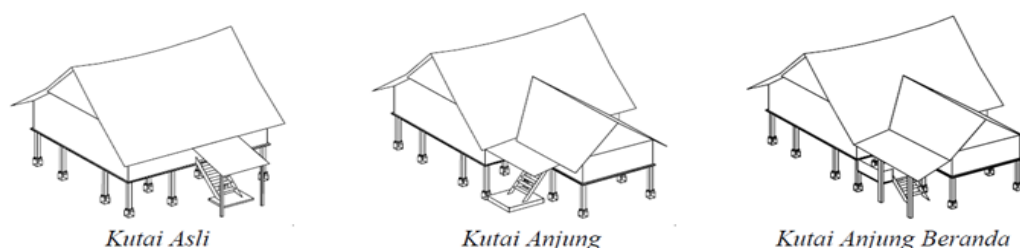
Kutai House

Kutai House is a traditional type of traditional Malay houses in Perak and has existed since the 1800s, so the name "Kutai" means old (Mohd Sabrizaa A.R., 2017) and it is the oldest type of the traditional Malay houses in Perak. These houses are mainly distributed in Sungai Perak in three regions. Kuala Kangsar, Perak Tengah and Pasir Salak. In this study, the researchers only focused on Bota sub region in Perak Tengah. Every Kutai house that was first built more than 200 years ago must face the river, and the building, location, size and layout of the house must strictly comply with Undang-Undang99. The traditional Kutai house consists of only one called "rumah ibu" (main house). The roof of "Rumah Ibu" is very high. It can also play a role in the front hall and a room or as a foyer. There is a space of the room, the serambi belakang and serambi depan in Rumah Ibu, which may be necessary for female family members. Rumah ibu is strictly a private and semi-private space based on the situation, because according to Malay custom, only the owner and close relatives can enter the space. The floor of the house is about two meters above the ground and is usually made of wood. There is a gap of about 2 cm on the floor, so the house will not float in the flood. The interesting thing about Kutai houses is that these pillars are not planted underground, but placed on a base made of cut stone, brick, or concrete. These pillars are placed on the base, rather than fixed or nailed with cement, it is surprising that these houses can stand upright after so many years (Norhasandi Mat, 2012). The purpose of building the Kutai house is to lift the whole building and move it to another area. Initially, the roof of the house was long and high, made of sago (rumba wood) or nipah palm. Today, many Rumah Kutai owners have replaced palm roofs with zinc roofs because it is easier to maintain. At the same time, the walls are made of plant strips (bamboo or kelarai) from timber panelled planks which sometimes include carvings. The traditional Rumah Kutai has two entrances, one entrance is for men and the other entrance is for women. The height of the sliding doors is low, so guests must bow when entering the house to show respect to the homeowner (Vicinity Media Corporation Sdn Bhd, 2006).

Type of Kutai House

Kutai house has a basic house form and roof form, (Talib, 2004) studied the changes in Kutai houses from 1817 to 1935. Throughout the year, the Kutai house has evolved from the basic shape of the house plan to a house with some additional space-according to local needs. Basically, there are three different kinds of Kutai houses, namely *Kutai Asli* (KO), *Kutai Anjung* (KA) and *Kutai Anjung Beranda* (KAB) in Figure 2. From this change, materials and construction methods may change due to the suitability of the house.

Figure 2
Type of Kutai House.



(Ariffin, 2004)

Space Hierarchy

The definition hierarchy according (Wastuty, 2008) is the difference from a form in space. The intensity of the interests of a space can be seen from the pen or function of the space. In addition, the meaning and formality of space can be a condition for a hierarchy. According to Wahyuni (2020) the structure of space and the value of space depending on the needs of the perpetrators of activities in space. The hierarchy of space becomes an important unit in the part of the house. Hierarchy is formed because of various factors, (Wahyuni, 2020). The space hierarchy by can be explained that the ranking of space can determine the importance of a space. This rating can be assessed from large to small, short high, more or less, and by measurements from the centre to the edge, a little to a lot often used not often used to measurements in solid voids, (Clark, 1986). Space Hierarchy becomes a unity that cannot be separated from the building's spatial pattern. There are changes that occur in space in buildings over time, including the space hierarchy, (Wahyuni, 2020).

Morphology

The definition morphology is the study of the shapes and arrangement of parts, to determine their function, their development, and how they may have been shaped by evolution, (Webster, 2020). Another definition related with morphology, explained by (Purwanto, 2013) study the development of physical forms in urban areas related to building architecture, open space circulation systems and infrastructure. Morphology is broader than typology because it involves changes in forms that occur in evolution, transformation, metamorphosis or morphogenesis. Morphology is the study of forms and shapes of residential environments, (Carmona, 2012). Form means a form that can be observed and is a configuration of several objects, while a shape is a geometric feature or external shape and outline of an object in, (Damayanti, 2017). These characteristics influence the changes in the space environment, economy, and social activities in the house. Besides that, the morphology hierarchy of space analysis can help identify the transformation of the transition of space and the evolution of form and building structure. Physical changes play a significant role in morphology (M. Lazim, 2020).

METHODOLOGY

The objectives of the study are to determine the spatial layout and analysis the factors and analyse of morphology affects the spatial hierarchical transformation for Kutai House. The method of this research is through observation the spatial space and in deep interview session, conducting surveys and get referrals from sources related to the Malay race and locals. 11 houses with interview owner of the building were sampled for this study. Limitation for this

sample by selecting Kutai house only in Perak Tengah District. The sample is selected according to the criteria (Table 1) that have been set as follows:

Table 1
Sampling selection criteria.

Sample Details	Requirements
Age	More than 100 years old.
Type of House	Only Kutai House was selected in this research
Authenticity	Minor modification without affecting the original layout
Accessibility	By a mutual understanding with only the owners. Restricted to private residential compounds.
In-sight sources	Reliable secondary sources to validate information of the original condition of the selected samples.

Source: (Khalid, 2014)

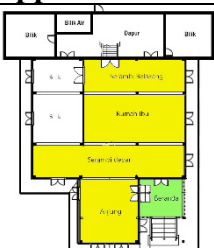

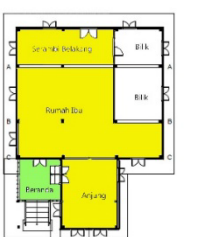
Assessing the Variation of Space Layout for the Kutai House.

The method of obtaining data will use the "correlation theory" method introduced by (Wilson D. & Sperber, 2004). By this method, researchers will use more semi-structured depth in interviews to obtain intangible data for 11 owners of the Kutai House.

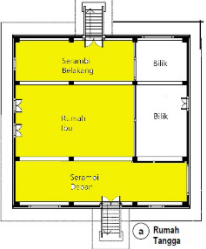
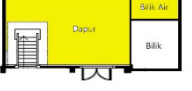

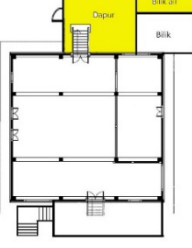



RESULTS

Generally, researchers can discover the spatial elements and hierarchical structure in all the houses visited through interviews and observation studies. The following table shows a list of the spatial hierarchy of the 11 Kutai houses in this research.

Table 2
List of Hierarchy Layout of Space for 11 of Kutai Houses Perak Tengah District.

Sub District of Perak Tengah	Sample ID	Type of Kutai House	Hierarchy and transition (Based on site visit and interview)			The transition of space is connected by a door:-
			Private	Semi-private /Public	Public	
			WHITE	YELLOW	GREEN	
			Upper Floor		Ground Floor	
Bota	BT1	KAB			Private: Bilik, Semi Private: Dapur, Bilik Air, Rumah Ibu, Serambi & Anjung Public: Beranda	
Bota	BT2	KAB			Private: Bilik, Semi Private: Rumah Ibu, Serambi belakang & Anjung	

Sub District of Perak Tengah	Sample ID	Type of Kutai House	Hierarchy and transition (Based on site visit and interview)			The transition of space is connected by a door:-
			Private	Semi-private /Public	Public	
			WHITE	YELLOW	GREEN	
			Upper Floor		Ground Floor	
					Public: Beranda	
Bota	BT3	KO			Private: Bilik, Semi Private: Rumah Ibu, Dapur, Ruang tamu, Serambi depan & Serambi belakang Public:	
Bota	BT4	KO			Private: Bilik, Semi Private: Rumah Ibu, Dapur, & Serambi depan & belakang Public:	
Bota	BT5	KAB			Private: Bilik, Semi Private: Dapur, Ruang Tamu, Rumah Ibu, Serambi belakang, depan & Anjung. Public: Beranda.	
Bota	BT6	KA			Private: Bilik, Semi Private: Rumah Ibu, & Serambi. Public: Dewan	
Bota	BT7	KAB			Private: Bilik, Semi Private: Rumah Ibu, Serambi depan & belakang Public: Beranda	

Sub District of Perak Tengah	Sample ID	Type of Kutai House	Hierarchy and transition (Based on site visit and interview)			The transition of space is connected by a door:-
			Private	Semi-private /Public	Public	
			WHITE	YELLOW	GREEN	
			Upper Floor		Ground Floor	
Bota	BT8	KO			Private: Bilik, Semi Private: Rumah Ibu, Dapur, Bilik Air, Serambi depan & belakang. Public:	
Bota	BT9	KO			Private: Bilik, Semi Private: Rumah Ibu, Bilik Air, Dapur, Serambi depan & belakang. Public:	
Bota	BT10	KA			Private: Bilik, Dapur Semi Private: Rumah Ibu, Selang, Dapur, & Bilik Air. Public: Ruang - Tengah & Beranda	
Bota	BT11	KO			Private: Bilik, Semi Private: Dapur, Selang & Rumah ibu Public:	

Sources: (Khalid, 2022)

According to Table 2 above, data analysis showed that the relationship between space and the determination of the hierarchy layout space can be gathered from observations and interviews made. The transition of space is connected by a door in determining the level of the hierarchy of space in the Kutai house. The hierarchy and transition for this research was divide to 3 space hierarchy, public, semi-public/semi-private and private areas. The public space is open to everyone, including the owner, family, and guests with permission. The owner and family are the only ones who have access to the semi-public/semi-private space. To maintain privacy, only the owner has the right to be in a private space. Refer to characteristic information data from Table 2, the determination of related data for the transition hierarchy of the space according to the type of Kutai house can be referenced in Table 3 for data finding and Figure 3 for data analysis.

Table 3

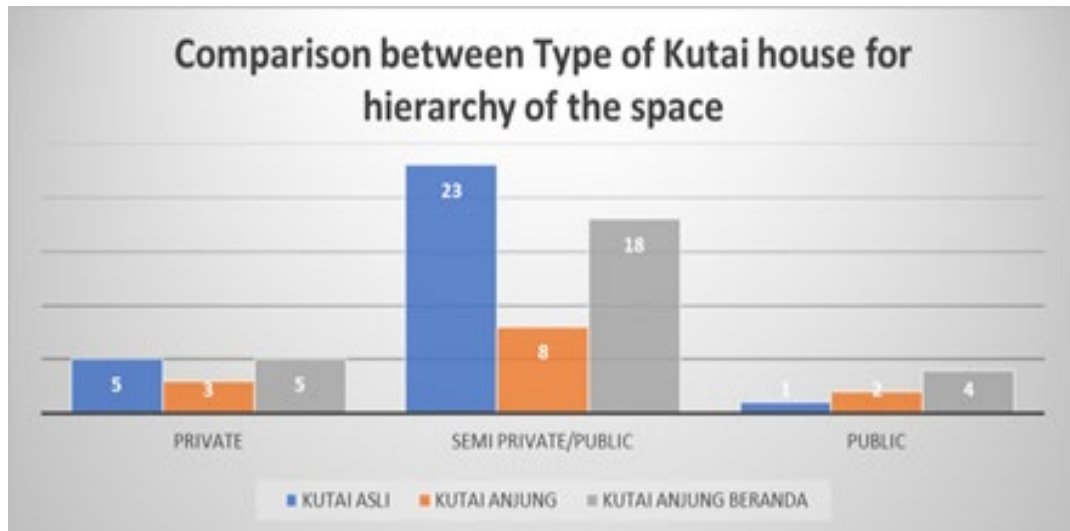
Analysis of hierarchy layout of space for selected Kutai houses (KO, KA & KAB) in Bota, Perak Tengah.

KUTAI ASLI																	
Sample ID	Private				Semi Private/Public												
	Bilik	Dapur	Bilik Mandi	Serambi	Dapur	Bilik Air	Rumah Ibu	Serambi	Ruang Tamu	Selang	Bilik Air	Anjung	Tandas	Beranda	Ruang Tengah	Dewan	Rumah Ibu
BT3	1				1		1	2	1			1					
BT4	1						1	2				1					
BT8	1					1	1	2				1					
BT9	1				1	1	1	2				1					
BT11	1				1					1							1
	5	0	0	0	3	2	4	8		1	1	0	4	0	0	0	1
	5				23										1		
KUTAI ANJUNG																	
Sample ID	Private				Semi Private/Public												
	Bilik	Dapur	Bilik Mandi	Serambi	Dapur	Bilik Air	Rumah Ibu	Serambi	Ruang Tamu	Selang	Bilik Air	Anjung	Tandas	Beranda	Ruang Tengah	Dewan	Rumah Ibu
BT6	1						1	2								1	
BT10	1	1			1	1	1			1		1			1		
	2	1	0	0	1	1	2	2		0	1	0	1	0	0	1	1
	3				8										2		
KUTAI ANJUNG BERANDA																	
Sample ID	Private				Semi Private/Public												
	Bilik	Dapur	Bilik Mandi	Serambi	Dapur	Bilik Air	Rumah Ibu	Serambi	Ruang Tamu	Selang	Bilik Air	Anjung	Tandas	Beranda	Ruang Tengah	Dewan	Rumah Ibu
BT1	1				1	1	1	2				1		1			
BT2	1			1			1					1		1			
BT5	1				1		1	2	1			1		1			
BT7	1						1	2				1		1			
	4	0	0	1	2	1	4	6		1	0	0	4	0	4	0	0
	5				18										4		

Sources (Khalid,2022)

Figure 3

Comparison between type of Kutai house for the hierarchy of the space




By referring from Figure 3, there are 5 sample Kutai Asli type (sample id BT3, BT4, BT8, BT9, & BT11), 2 sample Kutai Anjung type (sample id BT6 & BT10), and 4 for Kutai Anjung Beranda type (sample id BT1, BT2, BT5, & BT7) for this research is indicating about braid between the hierarchy layout and transition of space.

For the Kutai Asli house, the classification for semi-private/public space is the highest result which includes (*dapur, bilik air, rumah ibu, serambi, ruang tamu, selang, tandas, Anjung & bilik air*) followed by private space (*bilik, dapur, bilik mandi, and serambi*) and public space (*beranda, ruang tengah, & dewan*). Based on this result, the space layout for this type of house is smaller than other types of houses that have added space. Because of that, there are many spaces that are designed to be semi-public or private for certain occasions. For the Kutai Anjung house, the classification for semi-private/public space is the highest result, the private space and public space have the same result in second place. based on this result, the space layout for this type of house is bigger than Kutai Asli House with additional space like *Anjung* for certain occasions. For the Kutai Anjung Beranda house, the classification for semi-private/public space is the highest result, followed by public space and the private space. based on this result, the space layout for this type of house is bigger than another type of Kutai house with additional public space like *Anjung and Beranda* for certain occasions.

Generally, the spatial composition of Rumah Kutai is affected by several factors, which also determine the scope of the building components and the composition of the space existing in the house. The components of the public space in the Kutai house include *Serambi, or Beranda, Rumah Ibu, Selang and Dapur* (refer Table 4).

Table 4
Composition of spaces in Rumah Kutai.

Composition of Space	Function (Finding)	Public (Green)	Owner, family & guest
		Semi Public/ Semi Private (Yellow)	Owner & family
		Private (White)	Owner
<i>Serambi, Anjung or Beranda</i>	<p>Based on analysis data from interviews session, the function <i>Serambi, Anjung or Beranda</i> are specialist for men activities and that's where male guests sit during feasts and for performing other activities. At night this space is used as a bed for young children.</p>		
<i>Rumah Ibu</i>	<p>Based on analysis data from interviews session, the function for <i>Rumah Ibu</i>, there is a porch and sometimes even a small room, but there is only room space, and rooms are reserved for young girls. In the past, there were no restrictions on the entire hall, and enough space was left between the <i>Serambi</i> borders, the space in the middle was only for women, and the threshold height was limited to 5 cm. The level is different from the floor between the porch and the living room.</p>		
<i>Selang</i>	<p>Based on analysis data from interviews session, the function for <i>Selang</i> is addition space to the hall or passage between the two buildings, it is also a place for women to talk or carry out various activities. In the past, there were no roofs and walls in this area, this space could be used for drying fabrics and rainwater harvesting. Girls in ancient times were used as washing areas. This space is usually called a shelf hose or a hose clothesline behind its roof and walls and is called a partition or a ventilation area.</p>		
<i>Dapur</i>	<p>Based on analysis data from interviews session, the space for <i>Dapur</i> is smaller than <i>Rumah Ibu</i> (a single house that usually does not use a foyer). It is used as a place for cooking, and any kitchen utensils stored there can be used for cooking. A ladder and platform are on the edge of the kitchen door decked and it is often used by women to the river or to the well for the purpose of taking water, bathing and so on. Today the ladder not using anymore, because all the unit already install water supply pipping.</p>		

Sources: (Khalid, 2022)

CONCLUSION

The morphology private space hierarchy for Kutai house is in the room that has the highest intensity of activities carried out in the room by all family members. In general, the

family room becomes a hierarchy in the house. *Rumah Ibu* strictly spatial transitional transformation has changed from public to semi-public, and only the owner and close relatives can enter the space with permission from owner. This space becomes the center of activity such as chatting, watching television, receiving guests, and other activities. The intensity of activities with public space in each house is different. Some houses that do not have an *Anjung* or *Beranda* will make the *Rumah Ibu* a public space for social activities. From the research done, the space of the *Rumah Ibu* is rarely used due to changes in the spatial morphology for the Kutai house. This is due to factors such as the increase in household appliances, the addition of additional space, the condition of the timber floor, which is not strong, the increase in family members as well as health factors impacting the change in the hierarchy of the *Rumah Ibu* which is always on the upper floor not being used. The spatial morphology of the Kutai house has an impact on the level of underutilization of the *Rumah Ibu*, according to observations and interviews. This effect will also make the *Rumah Ibu* less functional and less well-maintained.

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Tuan,

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Perkara di atas adalah dirujuk.

2. Adalah dimaklumkan bahawa pihak kami ingin memohon kelulusan tuan untuk mengimbas (*digitize*) dan memuat naik semua jenis penerbitan di bawah UiTM Cawangan Perak melalui Repositori Institusi UiTM, PTAR.

3. Tujuan permohonan ini adalah bagi membolehkan akses yang lebih meluas oleh pengguna perpustakaan terhadap semua maklumat yang terkandung di dalam penerbitan melalui laman Web PTAR UiTM Cawangan Perak.

Kelulusan daripada pihak tuan dalam perkara ini amat dihargai.

Sekian, terima kasih.

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Saya yang menjalankan amanah,

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27.1.2023

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