

## Mapping of Graveyard Location of The Sultans of State of Perak Aided by ICT Applications

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### ABSTRACT

The Sultan of Perak was the heir of Sultan of Malacca after Perak State was ruled by Sultan Muzaffar who was the son of Sultan Mahmud Shah. The administration of Sultan of Perak grew along Sungai Perak and this can be seen from the tombs located along the Perak River basin from the Lower Perak River to Kuala Kangsar. Due to modernization and environmental changes, most of the graveyards are located at remote places and are difficult to access. This study was conducted to solve the problem of looking for the graveyards' location by using ICT applications. This paper also discusses the application and procedure for mapping of the point of the graveyards' coordinates for the tomb sites which were visited during the conduct of this study. The findings of this study will help the heirs of the Sultanate of Perak, the local authorities and the public to find and access the late Sultans of Perak's graveyards easily and systematically.

**Keywords:** graveyards, Sultan of Perak, coordinates, ICT

### INTRODUCTION

*Makam* or tombs are the burial sites for the dead and in Malaysia, *makam* is defined as tombs or mausoleums for royal families and venerated people such as leaders and warriors. The tombs of the Perak Sultanate are one of the historical heritages of the Malays that still exist and are preserved, and maintained as historical heritage of the state of Perak. These tombs are very important because the Perak Sultanate was the heir of the Malay Sultanate of Malacca that existed in Perak since the 16<sup>th</sup> century. The events and happenings during the reign of a Sultan is an important piece history for the state of Perak and Malaysia. These tombs have also been gazetted by the Museum Department under the Ancient Artefacts Act or *Akta Bendapurba* No.168/1976 (N.A. Halim 1981).

This paper discusses the work of identifying the location of the tombs of the Perak Sultanate around the state of Perak which have been visited and mapped in the Google Earth software to help other users identify the actual location of the Perak Sultanate's tombs. The location of these tombs is important because in the ceremonies of the Perak Sultanate, when a king is to be crowned as the Sultan of Perak, he needs to follow the Ceremony of Visiting the Royal Tombs. He will visit

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the royal tombs and the tomb of Tok Temong which are all located in areas in the vicinity of the state of Perak. However, these tombs are located in several different locations and the routes to the location of these tombs are quite challenging; in addition, it takes time to find them because there are tombs which are located in palm oil plantations, school areas, islands, and areas near the river. These tombs were once located near the basin of the Perak River that was the administrative centre of the previous sultans but because of the migration and exploration of new areas, these tomb sites have been long abandoned. In fact, there are also routes to tombs that have to be accessed via roads of plantations that are privately owned.

### **The Ruling System of the Perak Sultanate**

The Sultanate of Perak began in 1528 after a few years of the fall of the Malay Sultanate of Malacca as a result of the attack by the Portuguese in 1511. Sultan Mahmud Shah who was the ruler of Malacca at the time had escaped and eventually settled in Kampar (Sumatera) and was enthroned as Sultan Kampar. At that time, the Malay Sultanate of Perak did not exist yet, and the state of Perak was administered by a small government that is provincial in nature (Abdul Halim Nasir 2007). The integrity of the Malay rulers of Malacca that brought progress to the illustrious Malacca had spurred the Perak dignitaries at that time, namely Tun Saban together with Nakhoda Kassim, to present themselves to Sultan Mahmud Shah in the state of Kampar, Sumatera, to request that the heir from the Malacca Sultanate govern and become the Sultan in the state of Perak (Fawzi Basri 1986, Buyong Adil 1972). The request was accepted and Sultan Mahmud Shah ordered his son, Raja Muzaffar to set forth to Perak by conferring to him all the royal regalia of the state of Malacca to become the Sultan in Perak.

Thus, the entourage of Raja Muzaffar, his wife Tun Terang and his son Raja Mansor Shah had sailed across the Straits of Malacca and when they reached Kuala Sungai Perak, in a place called 'Beting Beras Basah', his ship was stranded on a sandbank and could not move. Suddenly a storm came with rough sea, and various efforts were made but his ship still did not move. Hence, it is there that he exclaimed by uttering these words:

*'Selilit Tanah Minangkabau,  
Selengkung Pulau Perca,  
Dilengkung ular Saktimuna,  
Sebenarnya Aku keturunan Raja,  
Jauhkan segala malapetaka,  
Perpisahan Aku di Selat Melaka'* (Fawzi Basri 1986)

After reciting those words, Raja Muzaffar took his crown and threw it into the sea until the rough sea became calm and the sandbank that appeared was lost from view. It was only after that, that his ship could sail once again and travel upstream until they arrived at Air Mati. It is from the descendents of Sultan Muzaffar Shah that the lineage of the Perak Sultanate has continued to govern until the present day and they are the descendents from the Malay Sultanate of Malacca (Fawzi Basri 1986, Buyong Adil 1972). In the system of throne succession for the Perak Sultanate, the

future Sultan who will be crowned does not follow the system of descendants from the Ruling King to his son, but it is based on rotation as decided by the Dewan Negara (Senate) ([website http:// http://sultan.perak.gov.my/](http://http://sultan.perak.gov.my/)).

## 1. FINDING THE LOCATION OF THE PERAK SULTANATE'S TOMBS



Figure1: The Tomb of Makam Sultan Muzafar Shah III

The administrative centre of the Perak Sultanate initially was founded in Tanah Abang and the administrative centre changes according to the administration of the newly appointed Sultan. When a new Sultan is installed, the Sultan's palace would move and this means that the administrative centre of the ruling Perak Sultanate will also move to a new area. This move also involved the site of the tomb of the Sultan who ruled at that time and this resulted in many of the sites of the Perak Sultanate's tombs being located at different areas. According to Abdul Halim Nasir (2007), during the British rule, the administrative centre of the Perak Sultanate was transferred and maintained in Bukit Chandan, Kuala Kangsar. Based on observation, this tomb site is located in an area near the river and when river erosion occurred, it would affect the tomb site which would fall into the river. As a result of the occurrence of flood and soil erosion, the Malay community that lived near the basin of Perak River have also moved to the areas near the road and the area in which they settled in previously is abandoned and unoccupied. The location of these tombs which is in the area near the river have also resulted in the tombs being left dilapidated and unkempt except for the tombs that are located near the road. There are also tombs which have been moved to other areas because of the occurrence of soil erosion and the tombs had fallen into the river.



Figure 2: Signage to the tombs

While this research was carried out, there were difficulties in finding the location of the tomb sites because these tombs are located in palm oil plantations and old villages that have been abandoned. The authorities have also provided signage that gives the direction to the tombs; however, the routes are not passable because of river erosion. Therefore, we had to find alternative routes and ask the villagers who knew of other ways to get to the tomb sites. We also had to scour the village areas that have long been deserted and plough through abandoned oil palm plantations. While looking for Sultan Tajul Ariffin’s tomb in Pulau Semat, we had to use the boat because the tomb is located on an island.

### PREVIOUS RESEARCH

Studies on the history and location of the Perak Sultanate’s tombs have been widely discussed by many researchers before this. Jeragan Abdul Syukor (1907) began writing about the location of the tombs and the type of gravestones of Perak’s Sultans beginning with the first Sultan of Perak until the 27<sup>th</sup> Sultan. He also listed the location of the tombs of the Sultans of Perak as recorded in Table 1 below.

Table 1 Graveyards List by Location edited from Jeragan Abdul Syukor (1907)

No.	Name	Location
1	Paduka Sri Sultan Mothaffar Shah	Tanah Abang, Ayer Mati, Kuala Kangsar
2	Paduka Sri Sultan Mansur Shah	Kota Lama Kanan, Kuala Kangsar

3	Paduka Sri Sultan Ahmad Tajuddin	Pulau Tiga, Daerah Perak Bawah
4	Paduka Sri Sultan Tajul Ariffin,	Pulau Semat, Mukim Senggang, Kuala Kangsar
5	Paduka Sri Sultan Alla-Uddin Shah,	Bota, Kuala Kangsar
6	Paduka Sri Sultan Mukkadam Shah,	Negeri Acheh, Indonesia
7	Paduka Sri Sultan Mansur Shah II	Johor
8	Paduka Sri Sultan Mahmud Shah,	Pulau Tiga, Perak Bawah
9	Paduka Sri Sultan Salehuddin,	Negeri Kampar, Sumatera
10	Paduka Sri Sultan MOTHAFFAR SHAH II,	Ayer Mati, Kuala Kangsar
11	Paduka Sri Sultan Muhammad Iskandar	Gerenggong, Pulau Tiga, Perak Bawah
12	Paduka Sri Sultan Allauddin Rahiat Shah	Gerenggong, Pulau Tiga, Perak Bawah
13	Paduka Sri Sultan MOTHAFFAR SHAH III	Mukim Bota, Kuala Kangsar.
14	Paduka Sri Sultan Muhammad Shah	Pulau Tiga, Lower Perak.
15	Paduka Sri Sultan Iskandar Zul Karnain	Pulau Indra Sakti, Bandar, Lower Perak.
16	Paduka Sri Sultan Mahmud Shah	Pulau Besar, Mukim Pasir Panjang Ulu, Lower Perak
17	Paduka Sri Sultan Allauddin Mansur Iskandar Muda Shah	Telok Memali, Mukim Bandar, Lower Perak
18	Paduka Sri Sultan Ahmaddin Shah	Pulau Bota,
19	Paduka Sri Sultan Abdul Malek Mansur Shah,	Telok Memali, Mukim of Bandar, Lower Perak
20	Paduka Sri Sultan Abdullah Moazam Shah	Telok Kepayang, Mukim Pasir Panjang Ulu
21	Paduka Sri Sultan Shahbudin Shah	Tanjong Penanggok, Bandar, Hilir
22	Paduka Sri Sultan Abdullah Muhammad Shah	Durian Sebatang, Hilir (Lower Perak)
23	Paduka Sri Sultan Jaafar Moazam Shah	Telok Kapayang, Pasir Panjang Ulu, Lower Perak.
24	Paduka Sri Sultan Ali-el-Kamal Rahiat Shah	Gedong Siam, Mukim Sayong, Kuala Kangsar
25	Paduka Sri Sultan Ismail Moabeddin Shah	Sekudai, Johor
26	Paduka Sri Sultan Abdullah Muhammad Shah	Bukit Chandan, Kuala Kangsar
27	Paduka Sri Sultan Yusof Sharif-el-din Mofthal Shah	Kampung Lembah, Mukim Sayong, Kuala Kangsar

N.A Halim (1981) has listed the tombs of the Sultanate of Perak beginning with the first Sultan of Perak until the 30<sup>th</sup> Sultan of Perak in his book titled *Tempat-tempat Bersejarah Perak (Historical Places in Perak)*. He also urged visitors who wanted to visit the tombs to ask the local people in the vicinity of the tombs. Meanwhile, Fawzi Basri (1986) in his book titled *Cempaka Sari: Sejarah Kesultanan Negeri Perak (Cempaka Sari: The History of the Perak Sultanate)* also listed the locations of the tombs of the Perak Sultanate from the first Sultan until the 33<sup>rd</sup> Sultan. According to Abdul Halim Nasir (2007), the location of the tombs of the Perak Sultanate is scattered because of the location of the administrative centres which used to change from one place to another.

Nevertheless, research and writing on the determination of the coordinate points of the Sultanate of Perak's tombs has not been conducted by the previous researchers. The use of tools such as GPS that have helped a lot in the work of determining coordinates and location can be used to determine the actual location of these tombs of the Perak Sultanate. The use of software that is simple and easily accessible can also help in the work of finding the location of the tombs. The use of GPS is one of the ways to help determine the actual position with the help of satellites.

## METHODOLOGY

The state of Perak is the oldest state having Malay Sultanate and until the present time, it has a total of 34 Sultans and a total of 21 tomb sites of which their locations have been identified based on the map obtained from the reference of the souvenir book of the Sultan's Birthday that was published by the Office of His Royal Highness Sultan of Perak. Nevertheless, the locations of the tombs are quite vague as the map used a large scale and their locations are not accurate. Before field work was carried out, each tomb was listed based on the names of the villages recorded in the map. Research in the form of fieldwork was carried out at each tomb listed and each coordinate point was taken using a GPS device.

In this study, the researcher used a GPS device of the Garmin Rino® 650 type, where this device is of high sensitivity that is capable of identifying the coordinate points accurately and it is also equipped with software that can fine-tune maps and road routes. After all the tomb sites have been visited, the names of the Sultans, the coordinate points and the photos of the tomb sites are recorded in one database. The format of the longitude and latitude values obtained from the GPS need to be changed before being entered and tagged in the Google Earth application because the reading on Google Earth is slightly different from the reading on the GPS. In order to solve this problem, some calculations need to be carried out on the value of the reading of minutes on the longitude and latitude points. The conversion method is by multiplying the decimal value of the minute by 60. As an example, on the tomb of Sultan Muzaffar Shah 3, the latitude value on the GPS is 04° 21.218' N. The method of calculation is as the following:

$$0.218 \times 60 = 13.08$$

In the *Google Earth* software, reading of the latitude point 4° 21' 13"

After getting all the readings, the coordinate points obtained from the GPS device need to be converted into a value that is understood by the Google Earth software, namely written in the form of *degrees* (°), *minutes* ('), and *seconds* (") as shown in Table 2 below.

No	Name	Coordinate from GPS		Convert Sexagesimal	
		Latitude (N)	Longitude (E)	Latitude (N)	Longitude (E)
1	Sultan Muzaffar Shah (1528-1549)	4° 18.359'	100° 54.425'	4° 18' 21"	100° 54' 25"
2	Sultan Mansur Shah (1549-1577)	4° 47.441'	100° 56.962'	4° 47' 26"	100° 56' 57"
3	Sultan Ahmad Tajuddin Shah(1577-1584)	4° 11.596'	100° 55.377'	4° 35' 02"	100° 53' 52"
4	Sultan Tajul Ariffin (1584-1594)	4° 35.041'	100° 53.868'	4° 35' 02"	100° 53' 52"
5	Sultan Alauddin Shah (1594-1603)	4° 20.988'	100° 52.977'	4° 20' 59"	100° 52' 58"
6	Sultan Mulkadam Shah (1603-1619)	Died in Aceh, Indonesia			



7	Sultan Mansur Shah II (1619-1627)	Died in Aceh, Indonesia			
8	Sultan Mahmud Shah (1627-1630)	4° 13.715'	100° 55.432'	4° 13' 42"	100° 55' 25"
9	Sultan Salehuddin (1630-1653)	Died in Kampar, Sumatera, Indonesia			
10	Sultan Muzaffar Shah II (1636-1653)	4° 19.649'	100° 53.655'	4° 19' 38"	100° 53' 39"
11	Sultan Mahmud Iskandar Shah (1653-1720)	4° 11.596'	100° 55.377'	4° 11' 35"	100° 55' 22"
12	Sultan Alauddin Mughayat Shah (1720-1728)	4° 11.596'	100° 55.377'	4° 11' 35"	100° 55' 22"
13	Sultan Muzaffar Shah III (1728-1756)	4° 21.218'	100° 52.910'	4° 21' 13"	100° 52' 54"
14	Sultan Muhammad Shah (1742-1743)	4° 13.715'	100° 55.432'	4° 13' 42"	100° 55' 25"
15	Sultan Iskandar Zulkarnain (1756-1778)	4° 05.762'	101° 00.844'	4° 05' 45"	101° 00' 50"
16	Sultan Mahmud Shah (1770-1778)	4° 08.007'	100° 59.100'	4° 08' 00"	100° 59' 06"
17	Sultan Allauddin Mansur Iskandar Muda Shah (1778-1786)	4° 20.988'	100° 52.977'	4° 20' 59"	100° 52' 58"
18	Sultan Ahmaddin Shah (1786-1806)	4° 20.988'	100° 52.977'	4° 20' 59"	100° 52' 58"
19	Sultan Abdul Malik Mansur Shah (1806-1825)	4° 07.026'	100° 59.627'	4° 07' 01"	100° 59' 37"
20	Sultan Abdullah Muazzam Shah (1825-1830)	4° 09.455'	100° 58.472'	4° 09' 27"	100° 58' 28"
21	Sultan Shahabudin Riayat Shah (1830-1851)	4° 05.968'	101° 00.473'	4° 05' 58"	101° 00' 28"
22	Sultan Abdullah Muhammad Shah I (1851-1857)	4° 01.855'	101° 01.388'	4° 01' 51"	101° 01' 23"
23	Sultan Jaafar Muazzam Shah (1851-1865)	4° 09.456'	100° 58.476'	4° 09' 2"	100° 58' 28"
24	Sultan Ali Al-Mukammal Inayat Shah (1865-1871)	4° 46.392'	100° 57.329'	4° 46' 23"	100° 57' 19"
25	Sultan Ismail Mu'abidin Riayat Shah (1871-1874)	Died in Skudai, Johor			
26	Sultan Abdullah Muhammad Shah II (1874-1876)	4° 45.880'	100° 57.051'	4° 45' 52"	100° 57' 3"
27	Sultan Yusof Sharifuddin Muzaffar Shah (1886-1887)	4° 46.269'	100° 57.710'	4° 46' 16"	100° 57' 42"
28	Sultan Idris Mursyidul Azam Shah (1887-1916)	4° 45.881'	100° 57.041'	4° 45' 52"	100° 57' 2"
29	Sultan Abdul Jalil Karamatullah Shah (1916-1918)	4° 45.882'	100° 57.039'	4° 45' 52"	100° 57' 2"
30	Sultan Iskandar Shah (1918-1938)	4° 45.884'	100° 57.037'	4° 45' 53"	100° 57' 2"
31	Sultan Abdul Aziz Al-Mutasim Bi'llahi Shah (1938-1948)	4° 45.888'	100° 57.029'	4° 45' 53"	100° 57' 1"
32	Sultan Yusuf Izzuddin Shah (1948-1963)	4° 45.887'	100° 57.027'	4° 45' 53"	100° 57' 1"
33	Sultan Idris Al-Mutawakkil Alallahi Shah (1963)	4° 45.878'	100° 57.036'	4° 45' 52"	100° 57' 2"

After getting all the coordinate point values of the tomb sites, the process of tagging the coordinates was performed in the Google Earth software. This Google Earth software is software that can be downloaded for free. This software can be installed on a basic computer that is commonly used. Each user can use this software easily and it does not incur any charges. The user only needs to download the software from the website <https://earth.google.com/> and this software only requires basic computers that use Windows XP operating system and above. After installing this software, the user can find the location of the tomb by merely typing the name of the Sultan in the search box. This software will display the result as typed or searched by the user.

Nevertheless, mapping of the tombs' coordinates only involved the tomb sites around Perak and there are 4 tomb sites that are located outside of Perak of which their coordinate points were not taken. While the study was carried out, 2 tombs were found to be located side by side, namely the tombs of Sultan Abdullah Muazam Shah and Sultan Jaafar Muazam Shah. The site of these tombs is located near Pulau Juar Primary School and the route to these tombs require going through the school gate. The tomb of Sultan Abdullah Muazam Shah was moved because the original site of the tomb had fallen into the river when soil erosion occurred.

There is also the tomb of Raja Ahmad Shah which is located near the river and this tomb is more of a memorial stone. It is said that he died when he fell into the river and his body was never found. In order to commemorate his death, a memorial stone was placed in the area. If a visitor wishes to visit this tomb, the visitor needs to go through the school gate of SRAR Annuriah Addiniah which is located in Kampung Pulau Besar.

## RESULTS

Each coordinate point is tagged in the Google Earth software and labelled with the name of the Sultan and its rotation. The tagging of these points was made on the coordinates of the tombs of the Perak Sultanate which are located in the state of Perak only, and the 4 tombs which are located in Aceh, Sumatera, and Johor were not tagged because they are far away and located outside of Perak. As a result of the mapping, 18 tomb sites are located in the Central Perak district, 11 tomb sites are located in the Kuala Kangsar district, a tomb site in Lower Perak district and a tomb site in the Kinta district as shown in Figure 3 below. After 1876, most of the tombs of the Perak Sultanate are located in a special area in the Royal Mausoleum, Bukit Chandan, Kuala Kangsar. Construction of such a mausoleum as this is timely because the tombs of all the ruling sultans can be placed in a special area. It also facilitates visitors who wish to visit, facilitates the maintenance and monitoring process because these tombs are located in one area that is near mosques or places of attraction.

From the positioning of these coordinate points, it was found that the tomb sites of the Perak Sultanate are located near the Perak River. This shows that the river is the lifeblood in the reign of the Sultanate of Perak that has reached 486 years. The river is used as the source of communication, trade activities, fishing and many others.

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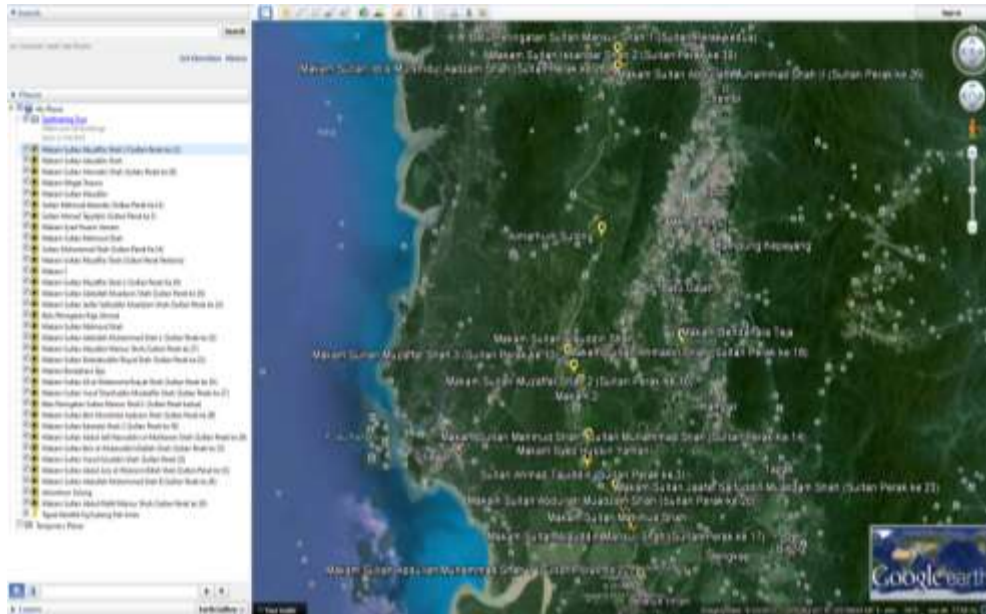


Figure 3: Screenshot from Google Earth Interface

Positioning of the coordinate points of the Sultanate of Perak's tombs in the Google Earth software can help the visitors to identify and to know the actual location of the tombs' sites. By using this software, the users can plan the tomb sites to be visited and identify the routes that can be used should they wish to visit the tomb sites. Another advantage of this software is that it can measure the distance between the existing tombs accurately and view the routes that already exist on the original map. The search process manually and the time taken to find the tombs can also be reduced and it is also cost effective.

## CONCLUSION

The legacy of the Malay Sultanate of Malacca inherited by the Perak Sultanate is evidenced by the result of a good and prosperous reign and governance of the state of Perak. The placement of the tomb sites along the Perak River proves that there was a pattern of reign by the Perak Sultanate that was centred at the basin of the Perak River. These tomb sites have important history for the state of Perak and these historical evidences should be protected in order to safeguard the sovereignty and provide awareness to the younger generation on the importance of the Malay history. Research on the mapping of the tomb sites of the Perak Sultanate in the Google Earth software to a certain extent would be able to assist in locating and mapping of one of the sites of the Malay historical heritage. Through such research, many other future studies can be carried out in order to ensure that the sites of these tombs and other tombs in Perak can be preserved and studied in terms of its history. These areas do not only contain the sites of royal tombs but many other historical relics that can be studied by future researchers.

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