LAMPIRAN J

BORANG INVENTORI PROJEK PELAJAR

PERKARA	MAKLUMAT *INFORMATION*
Program *Program*	DIPLOMA KEJURUTERAAN ELEKTRONIK (KOMPUTER)
Jabatan *Department*	JKE
Semester/ Tahun *Semester/ Year*	5
Tajuk Projek *Project Title*	CAR PARK SYSTEM BY USING ANDROID APPLICATION
Jenis Projek *Type of Project*	
Kategori Kluster Penyelidikan *Category/ research Cluster*	Tanda " / " pada yang berkenaan: *Please tick " / " where applicable:* [ ] Sains tulen (*Pure Science*) [ ] Sains gunaan (*Applied Science*) [/] Teknologi dan kejuruteraan (*Technology and Engineering*) [ ] Sains kesihatan dan klinikal (*Clinical and Health Sciences*) [ ] Sains sosial (*Social Sciences*) [ ] Sastera dan sastera ikhtisas (*Arts and Applied Arts*) [ ] Warisan alam dan budaya (*Natural Sciences and National Heritage*) [ ] Teknologi maklumat dan komunikasi (*Information and Communication Technology*)
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Penyelia Bersama *Co-Supervisor*	1. Name: No. Identification card:
Abstrak *Abstract*	In the early times the concept of smart cities have gained great popularity. The proposed Smart Parking system consists of an on-site deployment of an IOT module that is used to monitor and signalize the state of availability of single parking space. This paper introduce an IOT based coordinated framework for efficient and easy way of parking the vehicles by checking the availability of slots. This project is proposed to make it an easier experience of finding a free parking space to all drivers. These days, it is extremely difficult to find a free parking space due to the growth of production of vehicles. IR sensor, LCD display, Arduino board ESP8266 WIFI Shield module and an Android

	application are all combined together successfully complete this project. An important contributing factor, the IR sensor, will work to determine the distance to the object of which the threshold is set, meaning that any object pass through within the set threshold would be assumed as a parked vehicle. The information read by the sensor is transferred to an Arduino and with the help of WIFI shield it is then transferred to an Android application. An Android application will display the information to the user whether the parking space is available or unavailable. Such information is very convenient as it allows the driver to know of a free parking space before the driver arrives to the parking lot. This reduces the time consumed and decreases congestion. Furthermore, the Android application is of huge convenience as almost every person uses a smartphone these days.
Keyword *Keyword* (max 5 word)	Programming, electronic , car park , hardware ,application
Objektif Projek *Project Objectives*	i. To allows the driver to immediately locate the best parking slot available. ii. To detect and count the visitor who traversing the entrance. iii. To develop an application for tracking available parking iv. To save time for visitors who is stressing to find the car park. v. To reducing congestion in the parking area.
Skop Projek *Project scope*	i. This car park system device will install at the entrance door. ii. This device can use at the public places such as shopping mall. iii. Using MIT app Inventor to develop the android application. This software use C++ language. iv. Maximum number of car park in this demonstration is only 4. v. In this project more focus on car park entering door to detect the available parking slot.

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Dapatan *Finding* (*500 words max*)	To conclude, the project was interesting and challenging to complete as the knowledge that was earned throughout the years in polytechnic which aimed at building a car parking system which is based on engineering problems. Also, there were some important challenges that were faced, such as having little experience in programming an Arduino and also being able to select appropriate components to build the project. In addition, making the whole project look neat and tidy took a lot of time and effort. Overall, it took a lot of knowledge, skills, patience and motivation to successfully complete the project. Despite all the challenges that were faced, all the motives and objectives that were planned at the very start were achieved. Furthermore, this project could potentially be implemented to a real life parking lot, following some improvements. Some improvements will be discussed in more detail in the recommendations section below.
Cadangan untuk kerja-kerja akan datang *Suggestion for future work* (*500words*)	There are a number of recommendations, which are as follows: ▪ In this project the Android App works only when the user is connected to WiFi (wireless fidelity). This means that the information is of limited availability when the user is further away from the parking lot. Ideally the information should be available to be accessed no matter where the user is. This can be achieved by making the data available on the internet. This means that the user would only need to have internet connection on their mobile device. Furthermore, a website could be created as another alternative. ▪ In this project the IR sensors were used to detect cars. There are many other ways in which the cars could be detected, such as the Earth's magnetic field and ultrasonic detection. Furthermore, load cells and strain gauges could be used, which detect cars based on their weight. Moreover, the forward mounting sensors, camera based detectors and infrared based detectors are another option. The choice of which

	sensors are to be used all depend on the application, location and requirements of the system. ▪ In this project, the barrier safety system was not introduced. It was not one of the objectives of this project, however there was some spare time left; the lecturer recommended it, which made it a possibility. It was attempted, an ultrasonic sensor was installed and a program was being written. However, it was not a success as it was to challenging to complete. In real life situation, this is a vital feature as it prevents the car from being damaged by the barrier and avoiding possible injuries. ▪ The Android App was created successfully as it completely works and looks neat. However, it could be taken into consideration to make the App look more interesting and attractive to the user. More importantly, some features could be introduced such as including car parking opening/closing times, the location of the car parked, the time indicating how long it is parked and a feature to book and reserve a parking space. Moreover, a very useful feature could be introduced which is an automatic payment system such as an automatic bank card payment. This makes a hassle free experience.
Gambar berkaitan projek *Picture related to project* (700kb)	 *Figure 1*  *Figure 2*
Rating/Level	Jabatan/ Politeknik/ Kebangsaan/ Antarabangsa *Departments / Institutes / National / International*

***** *Borang ini perlu diisi oleh pelajar dan dihantar kepada penyelia/ penyelaras projek dalam bentuk hardcopy dan*

softcopy (borang LAMPIRAN J dan gambar hasil projek dalam format jpeg/bitmap) bersama laporan akhir dan hasil projek.