LAMPIRAN J

POLITEKNIK MALAYSIA

BORANG INVENTORI PROJEK PELAJAR

PERKARA	MAKLUMAT
Program *Program*	Diploma Kejuruteraan Mekatronik
Jabatan *Department*	Jabatan Kejuruteraan Mekanikal
Semester/ Tahun *Semester/ Year*	Jun / 2017
Tajuk Projek *Project Title*	**PNP-ROBOCON** (*Plug & Play Robotic Configuration*)
Jenis Projek *Type of Project*	**Inovasi** / Rekabentuk / Penyelidikan
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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Abstrak *Abstract*	*PNP-ROBOCON (Plug & play Robot Configuration), is a robot design to help the understandings towards the 4 main configurations of robotic movement. Those four are Cartesian, Cylinder, Polar, and Jointed Arm. PNP-ROBOCON consist of one main platform and two interchangeable module, which can show the movement of all four main configuration. Arduino UNO R3 is used to be the mainframe of PNP-ROBOCON, while the movement are powered by servo motor (SG90). At Politeknik Merlimau Melaka (PMM), there are two subjects that need the understanding of robotic movement configurations which are DJF 5042 (Industrial Robotics) and DJM6113 (Industrial Automation). Currently, there are no such robots or any other application at PMM that can help the understanding towards the subjects. This project aim to help the lecturers to give more understanding to the students and also helps the student to see clearly what they learn. We kindly propose PNP-ROBOCON to be part of learning tools at PMM as a teaching aid.*
Keyword *Keyword* (max 5 word)	PNP-ROBOCON, robotic configuration, teaching aid

Objektif Projek *Project Objectives*	The first objective of this project is to design a teaching aid product, with plug-and-play mechanism, in the form of simple robot. The second one is to build a simple plug-and-play robot which has one base as the controller, four different modules that can be used to explain four main geometrical configurations which are cartesian, cylinder, polar, and jointed arm.	
Skop Projek *Project scope*	i. A product (robot) that have "plug and play" design ii. Robot will only show the geometrical configuration which is Cartesian, cylinder, polar, and jointed arm. iii. Other element of robot are not included iv. The circuit is built by using Arduino R3 base set, to control the movement of the robot's arm v. The robot is design for educational used, not for real load function.	
IP No		
Dapatan *Finding* *(500 words max)*	i. Four main configuration can be integrated into two modules ii. Movement of robot (sliding, rotating, etc.) can be easily understand iii. The combination of movement that contain in a configuration can be seen iv. Number of servo motor that can be control is limited to six (by using Arduino Uno) v. Rheostat can act as controller (analog) **STRENGTH** i. Cheap ii. Less module used iii. Easy to maintain & reconfigure **WEAKNESS** i. Motor unstable (to excessive voltage load) ii. excess movement (vibrate)	
Cadangan untuk kerja-kerja akan datang *Suggestion for future work* *(500words)*	i. design an interactive module ii. re-coding for better control iii. re-wiring for better circuit	
Gambar berkaitan projek *Picture related to project* (700kb)	*Figure 1*	*Figure 2*
Rating/Level	Jabatan/ Politeknik *Departments / Institutes*	

* *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.*