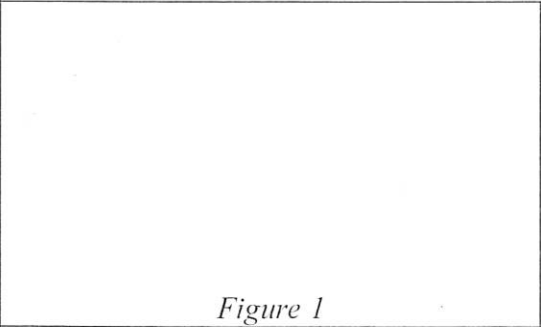
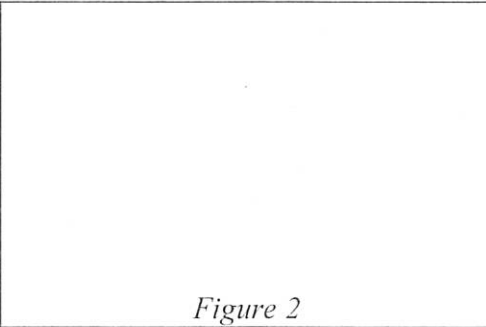


### BORANG INVENTORI PROJEK PELAJAR

PERKARA	MAKLUMAT																
Program <i>Program</i>	Diploma Kejuruteraan Mekanik																
Jabatan <i>Department</i>	Jabatan Kejuruteraan Mekanikal																
Semester/ Tahun <i>Semester/ Year</i>	Jun / 2017																
Tajuk Projek <i>Project Title</i>	<b>PNP-ROBOCON</b> ( <i>Plug &amp; Play Robotic Configuration</i> )																
Jenis Projek <i>Type of Project</i>	<b>Inovasi</b> / Rekabentuk / Penyelidikan																
Kategori Kluster Penyelidikan <i>Category/ research Cluster</i>	<p>Tanda “ / ” pada yang berkenaan: <i>Please tick “ / ” where applicable:</i></p> <table border="1"> <tr><td><input type="checkbox"/></td><td>Sains tulen (<i>Pure Science</i>)</td></tr> <tr><td><input type="checkbox"/></td><td>Sains gunaan (<i>Applied Science</i>)</td></tr> <tr><td><input type="checkbox"/></td><td>/ Teknologi dan kejuruteraan (<i>Technology and Engineering</i>)</td></tr> <tr><td><input type="checkbox"/></td><td>Sains kesihatan dan klinikal (<i>Clinical and Health Sciences</i>)</td></tr> <tr><td><input type="checkbox"/></td><td>Sains sosial (<i>Social Sciences</i>)</td></tr> <tr><td><input type="checkbox"/></td><td>Sastera dan sastera ikhtisas (<i>Arts and Applied Arts</i>)</td></tr> <tr><td><input type="checkbox"/></td><td>Warisan alam dan budaya (<i>Natural Sciences and National Heritage</i>)</td></tr> <tr><td><input type="checkbox"/></td><td>Teknologi maklumat dan komunikasi (<i>Information and Communication Technology</i>)</td></tr> </table>	<input type="checkbox"/>	Sains tulen ( <i>Pure Science</i> )	<input type="checkbox"/>	Sains gunaan ( <i>Applied Science</i> )	<input type="checkbox"/>	/ Teknologi dan kejuruteraan ( <i>Technology and Engineering</i> )	<input type="checkbox"/>	Sains kesihatan dan klinikal ( <i>Clinical and Health Sciences</i> )	<input type="checkbox"/>	Sains sosial ( <i>Social Sciences</i> )	<input type="checkbox"/>	Sastera dan sastera ikhtisas ( <i>Arts and Applied Arts</i> )	<input type="checkbox"/>	Warisan alam dan budaya ( <i>Natural Sciences and National Heritage</i> )	<input type="checkbox"/>	Teknologi maklumat dan komunikasi ( <i>Information and Communication Technology</i> )
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Ahli Kumpulan <i>Group member</i>	1. Name : Muhamad Rabani Bin Abu Hasan No. Identification card: 900106-04-5527 2. Name : Muhammad Khairul Amir Bin Md Arshad No. Identification card: 970728-01-5991																
Penyelia <i>Supervisor</i>	Name: Juliyanna Bte Aliman No. Identification card: 821029-01-6152																
Penyelia Bersama <i>Co-Supervisor</i>	Name: No. Identification card:																
Abstrak <i>Abstract</i>	<p>PNP-ROBOCON (<i>Plug &amp; play Robot Configuration</i>), 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 (<i>Industrial Robotics</i>) and DJM6113 (<i>Industrial Automation</i>). 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.</p>																
Keyword <i>Keyword</i> (max 5 word)	PNP-ROBOCON, robotic configuration, teaching aid																

Objektif Projek <i>Project Objectives</i>	<p>The first objective of this project is to design a teaching aid product, with plug-and-play mechanism, in the form of simple robot.</p> <p>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.</p>	
Skop Projek <i>Project scope</i>	<ul style="list-style-type: none"> <li>i. A product (robot) that have "plug and play" design</li> <li>ii. Robot will only show the geometrical configuration which is Cartesian, cylinder, polar, and jointed arm.</li> <li>iii. Other element of robot are not included</li> <li>iv. The circuit is built by using Arduino R3 base set, to control the movement of the robot's arm</li> <li>v. The robot is design for educational used, not for real load function.</li> </ul>	
IP No		
Dapatan <i>Finding</i> (500 words max)	<ul style="list-style-type: none"> <li>i. Four main configuration can be integrated into two modules</li> <li>ii. Movement of robot (sliding, rotating, etc.) can be easily understand</li> <li>iii. The combination of movement that contain in a configuration can be seen</li> <li>iv. Number of servo motor that can be control is limited to six (by using Arduino Uno)</li> <li>v. Rheostat can act as controller (analog)</li> </ul> <p><b>STRENGTH</b></p> <ul style="list-style-type: none"> <li>i. Cheap</li> <li>ii. Less module used</li> <li>iii. Easy to maintain &amp; reconfigure</li> </ul> <p><b>WEAKNESS</b></p> <ul style="list-style-type: none"> <li>i. Motor unstable (to excessive voltage load)</li> <li>ii. excess movement (vibrate)</li> </ul>	
Cadangan untuk kerja-kerja akan datang <i>Suggestion for future work</i> (500words)	<ul style="list-style-type: none"> <li>i. design an interactive module</li> <li>ii. re-coding for better control</li> <li>iii. re-wiring for better circuit</li> </ul>	
Gambar berkaitan projek <i>Picture related to project</i> (700kb)	 <p style="text-align: center;"><i>Figure 1</i></p>	 <p style="text-align: center;"><i>Figure 2</i></p>
Rating/Level	Jabatan/ Politeknik <i>Departments / Institutes</i>	

\* 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.