POLITEKNIK
MALAYSIA

BORANG INVENTORI PROJEK PELAJAR

PERKARA	MAKLUMAT *INFORMATION*
Program *Program*	DET5A
Jabatan *Department*	JABATAN KEJURUTERAAN ELEKTRIK
Semester/ Tahun *Semester/ Year*	SEMESTER 5
Tajuk Projek *Project Title*	DESIGN A FINGERS EXERGAME TO IMPROVE FINE MOTOR SKILL FOR AUTISTIC CHILDREN USING ARDUINO
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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Abstrak *Abstract*	Autism is a lifelong developmental disability that affects how people perceive the world and interact with others. Most of these children have difficulty with

	fine motor skills which typically struggle with handwriting and fine activities in their routine life such as buttons, zips, laces and cutlery. Because fine motor activities encompass so many routine functions, a fine motor delay can have a measurable negative impact on a person's ability to handle daily practical tasks. This project proposed a simple fine motor exercise aid plus game (exergame) for autistic children who discover from fine motor difficulties. The proposed exergame will blinking randomly and user need to bend their finger accordingly. It will notify to the user, whether they bend the right finger or not. The system is realized using Arduino, which is programmed to control all the operated circuit. It is shows that this project successfully combines the use of the small muscles in the hands, in accordance with what the children's eyes see and very helpful in strengthening the finger muscles of autistic children.
Keyword *Keyword* (max 5 word)	Exergame, fine motor skills autistic children
Objektif Projek *Project Objectives*	1. To design and develop an exercise tools for finger bend with different strength. 2. To combine electrical elements into this exersice tool with LED light and sound system to attract and gain attention from the autistic children. 3. To develop a source code using arduino that can control the overall function of exersice finger that can attract the autism children.
Skop Projek *Project scope*	1. This project is focusing the autism children age between 7 – 12 years

	old that have fine motor skills development problem. 2. The emphasis is only given on movement of right hand fingers. 3. The main controller is using arduino mega to control the overall system.
IP No	In progress
Dapatan *Finding* (*500 words max*)	This exergame can operate depends on the programmed that has been setup. Led model will blinking with 3 mode cycles; sequence , random and display. It is show that this exergame can attract children with autism to use this product as their exercise therapy.
Cadangan untuk kerja-kerja akan datang *Suggestion for future work* (*500words*)	1. Hand place at static position 2. Use more suitable surface for hand exercise use suitable component designed box 3. Use more suitable sound that can accept by autistic children
Gambar berkaitan projek *Picture related to project* (700kb)	 Figure 1 Figure 2
Rating/Level	Jabatan/ Politeknik/ Kebangsaan/ Antarabangsa *Departments / Institutes / National / International*