ROYAL ST. GEORGE'S COLLEGE — ADVANCED COMPUTER ENGINEERING SCHOOL

SHORT INDEPENDENT STUDY PROJECT PROPOSAL

TUESDAY, JUNE 30, 2020 — COURSE: ICS4U

Use this page to submit a proposal for your **Independent Study Project**. You have read the underlying philosophy of the activity (http://darcy.rsgc.on.ca/ACES/ISPs/Hardware.html), explored various topics of pursuit and have understood the assessment criteria (http://darcy.rsgc.on.ca/ACES/ISPs/ISPEvaluation.docx).

1. **YOUR NAME:** _____ **2. PROJECT TITLE:** _____

2. **PROVIDE A BRIEF DESCRIPTION OF YOUR PROJECT WITHIN EACH OF THE THREE DOMAINS.**

HARDWARE: _____

_____

_____

_____

SOFTWARE: _____

_____

_____

_____

DESIGN: _____

_____

_____

_____

_____

3. **WHY DID YOU SELECT THIS PROJECT?**

_____

_____

_____

NOTE: BE SURE TO CHECK ALL THE APPLICABLE BOXES ON THE REVERSE.

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Please check all boxes corresponding to the concepts and skills you intend to exploit in this project.

Hardware Components	Software Techniques	Power	Skills
□ resistors	□ High-Level	□ Batteries	□ reading a schematic
□ capacitors	□ Assembly	□ AC/DC Adapter	□ through hole soldering
□ potentiometers	□ Arrays	□ Transformers	□ surface mount
□ transistors	□ Structs	□ coils/chokes	soldering
□ diodes	□ bitwise operators	□ 12V	□ printed circuit board
□ push buttons	□ I^2C (TWI)	□ 24V	layout and manufacturing
□ switches	□ Libraries	□ solar	□ DMM Debugging
□ LDRs	□ ADC	□ manual	☑ CAD
□ thermistor	□ PWM	□ Peltier tiles	□ 3D printing
□ temperature sensor	□ Serial Comm. (ISP)		□ acrylic fabrication
□ proximity sensor	□ Debouncing	□ OTHER	☑ Word
□ IR (infrared)	□ LookUp Table		□ Excel
□ Radio Frequency (RF)	□ Polling		□ Time-management
□ Bluetooth	□ Persistence of		□ Fritzing
□ OpAmps	Vision		□ Presentation Overview
□ voltage regulators	□ Interrupts		☑ video creation
□ MOSFETs	□ Recursion		☑ technical writing
□ surface mount parts	□ ISP		
□ Logic ICs (40xx)	□ EEPROM		□ OTHER
□ shift registers	□ Processing		
□ Specialty ICs	□ Charlieplexing		
(555,MSGEQ7, H-Bridge,	□ Timing related		
LM3914, etc.)	□ UML Design		
□ Real Time Clock (RTC)			
□ ATtiny85	□ OTHER		
□ LEDs (single, Bi, RGB)			
□ 7-segment display			
□ Alphanumeric display			
□ Bargraph			
□ LED Matrix			
□ LCD Panel			
□ Graphics Panel		**Design Tools**	**Engineering Fields**
□ DC motor		□ ViaCAD	□ electrical
□ servo motor		□ Fusion	□ computer
□ stepper motor		□ 3D Print	□ mechanical
□ solenoid		□ Laser Acrylic	□ software
□ microphone			
□ audio line in		□ PCB (Eagle)	□ OTHER
□ speaker		□ PCB (Other)	
□ magnets			
□ perma-proto board		□ OTHER	
□ custom PCB			
□ OTHER			