Education and Training

CANBERRA COLLEGE
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Assessment Item 1

NATIONALLY RECOGNISED TRAINING

Systems Analysis and Design (11727(T) 11796(A) 1.0

Information Technology 1192(T) 1193(A)

Semester 2, 2018

NAME: _____ **Line: 2IPLS2**

Teacher: Sanjay Sharma **Due Date: 14/9/2018**

TASK CRITERIA	TASK	DUE DATE	WEIGHTING
1, 2, 3 & 4	Practical Test	Week 8	20%

VET Competencies Assessed in this Item:

Code	Competency Title	Core/Elective
ICTICT207	Integrate commercial computing packages	Elective II
ICTICT203	Operate application software packages	Core II
ICTICT202	Work and communicate effectively in an ICT environment	Core II & III
ICTICT209	Interact with ICT clients	Elective II

Criteria assessed in this Item:

Students will be assessed on the degree to which they demonstrate:

1. knowledge, understanding, application, analysis and evaluation
2. planning, designing, creating and implementing
3. communication and interpersonal skills
4. flexible, adaptive and creative thinking

IMPORTANT ASSESSMENT INFORMATION

The following are important factors common to all units of study at the Canberra College. See **Staff and Student Assessment Handbook** for details.

- **ATTENDANCE AND PARTICIPATION**
- **LATE SUBMISSION OF WORK**
- **COMPETENCY – BASED ASSESSMENT**
- **RECOGNITION OF CURRENT COMPETENCIES (RCC) and PRIOR LEARNING (RPL)**
- **NOTIONAL ZEROS**
- **COMPENSATION**
- **CHEATING AND DISHONEST PRACTICE**
- **PLAGIARISM/ELECTRONIC SUBMISSION OF ASSIGNMENTS**
- **MODERATION PROCEDURES**
- **UNIT SCORE CALCULATION (where applicable)**
- **RIGHT TO APPEAL**

Conditions for Item:

- All work is to be an individual effort.
- You will be given 1 period to complete this test.
- You will receive NO teacher assistance.
- This is an “open computer” test, so you may use resources or programs you created or form part of your learning and notes.
- No internal documentation is required in your programs.

Aim:

- To demonstrate your ability to write a Python program on a Raspberry Pi to effectively to monitor and control senor inputs, processing and outputs through its GPIO.

TEST

1. Create a folder called **Systems_Test_Your_Name** (e.g. Systems_Test_Subaru_WRX) in a working folder in you Pi's. You will save all the Python programs (& pictures of circuits) required to answer the questions for this test in this folder.
2. Do the following:

Tertiary

Build the circuit required and then write a program on your Raspberry Pi that simulates a low light alarm:

a. An LDR detects light that falls below a threshold – If it gets too dark, an LED is turned on and **STAYS ON** – (5 marks)
b. A push button resets the system, turning the LED off – until it gets dark again and the system operates as above continuously – (5 marks)
c. Use the temp / humidity sensor to print readings onto the screen, temperature in both Fahrenheit and degrees Celsius – (10 marks)

Accredited

Build the circuit required and then write a program on your Raspberry Pi that simulates a flashing beacon:

a. two LEDs turn on and stays on – (5 marks)
b. a button push makes the LEDs blink alternately, ie when one is on, the other is off – (5 marks)
c. Use the temp / humidity sensor to print readings onto the screen – (10 marks)

Submission

You need to submit **ONE compressed (ZIPPED) folder only** named **Systems_Test_Your_Name** (e.g. Systems_Test_Subaru_WRX), containing all the programs and pictures at the end of the test period.

You must keep an up to date copy of your work in your h: drive at all times as well as a backup on Google Drive.

Systems Test Marking Rubric

Name: _____ **Date:** _____

	Section	Total	Mark
Tertiary	• An LDR detects light that falls below a threshold – (2.5 marks) • If it gets too dark, an LED is turned on and STAYS on – (2.5 marks) • A push button resets the system, turning the LED off – (2.5 marks) • until it gets dark again and the system operates as above continuously – (2.5 marks) • humidity and temp (Fahrenheit and Celsius) data printed on the screen – (4 + 3 + 3 marks)	5+5+10	
Accredited	• two LEDs turn on and stays on – (5 marks) • a button push makes the LEDs blink alternately, ie when one is on, the other is off – (5 marks) • humidity and temp data printed on the screen – (5 + 5 marks)	5+5+5+5	
Total (T course)		20	
Total (A course)		20	

VET Competencies:

Result	Vocational competencies assessed via this task		Aspect of task addressing competency
	BSBOHS201A	Participate in OHS processes	Proper & safe use of Robot & tools to create circuits, equipment & evacuation drills
	ICAICT201A	Use computer operating system and hardware	Logging in correctly, starting app & interfacing computer with Robot
	ICASA203A	Connect Hardware Peripherals	Connecting & setting up interface with IDE & Robot
	ICAICT203A	Operate application software packages	Use of Programming IDE
	ICAPRG301A	Apply introductory programming techniques	Programming Robot to do tasks

Final Comment:

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