CANTERBURY
TECHNICAL INSTITUTE

ASSESSMENT

ICT50715
Diploma of Software Development

Advanced Programming Project

Assessment Code:

DITS-AP-PROJECT-A

ICTPRG505 Build advanced user interface
ICTPRG501 Apply advanced object-oriented language skills
ICTPRG523 Apply advanced programming skills in another language
ICTPRG507 Implement security for applications

Candidate must fill this section:	
Candidate Name:	Jhon Edison Henao
Candidate ID:	CTI2017587
Privacy Release Clause:	"I give my permission for my assessment material to be used in the auditing, assessment validation & moderation Process"
Candidate Signature:	JHON HENAO **Date:** 13-12-18

Assessment Completion Status:				(Trainer Use Only)
Attempt	**Satisfactory**	**Non-Satisfactory**	**Date**	**Assessor's Signature**
Initial attempt	☐	☐		
2nd attempt/*Re-assessment*	☐	☐		

Information for Candidate:

- All work is to be entirely of the candidate.

General Information for this assessment:

- Read the instructions for each question very carefully.
- Be sure to PRINT your FULL name & LAST name in every place that is provided.
- Short questions must be answered in the spaces provided.
- For those activities requesting extra evidence such as: research reports, ESSAY reports, etc. The student must attach its own work formatted in double space, Arial 12 pts.
- All activities must be addressed correctly in order to obtain a competence for the unit of competency.
- If the candidate doesn't understand the assessment, they can request help from the assessor to interpret the assessment.

Re-assessment of Result & Academic Appeal procedures:

If a student at CTI is not happy with his/ her results, that student may appeal against their grade via a written letter, clearly stating the grounds of appeal to the Deputy Principal. This should be submitted after completion of the subject and within fourteen days of commencement of the new term.

Re-assessment Process:

- An appeal in writing is made to the Deputy Principal providing reasons for re-assessment /appeal.
- Deputy Principal will delegate another faculty member of CTI to review the assessment.
- The student will be advised of the review result done by another assessor.
- If the student is still not satisfied and further challenges the decision, then a review panel is formed comprising the lecturer/trainer in charge, the Deputy Principal and the Director of Student Services OR if need be an external assessor.
- The Institute will advise the student within 14 days from the submission date of the appeal. The decision of the panel will be deemed to be final.
- If the student is still not satisfied with the result, the he / she has the right to seek independent advice or follow external mediation option with CTI's nominated mediation agency.
- Any student who fails a compulsory subject or appeals unsuccessfully will be required to re-enrol in that subject.

The cost of reassessment will be borne by the Institute. The external assessor will base his/her judgement based on principles of assessment. These principles require assessment to be reliable, fair, practical and valid.

Academic Appeals

- If you are dissatisfied with the outcome of the re-evaluation process, you have a right to appeal through CTI's complaint / grievance protocol.
- The notice of appeal should be in writing addressed to the Deputy Principal and submitted within seven days of notification of the outcome of the re-evaluation process.
- If the appeal is not lodged in the specified time, the result will stand and you must re-enrol in the unit.
- In emergency circumstances, such as in cases of serious illness or injury, you must forward a medical certificate in support of a deferred appeal. The notice of appeal must be made within three working days of the concluding date shown on the medical certificate.
- The decision of Deputy Principal will be discussed with the PEO and will be final.
- Student would then have the right to pursue the claim through an independent external body as detailed in the students' complaint / grievance policy.

Feedback/Comments:

Acknowledgement

I understand all the above rules, guidelines and feedback for this assessment.

Full Name:	Jhon Edison Henao	Signature:	Jhon Henao	Date:	12-12-18

Submission Details:

The assessment task is due on trainer provided date. Any variations to this arrangement must be approved in writing by your assessor. Submit this document with any required evidence attached. See specifications below for details

Performance objective

The candidate must demonstrate skills, knowledge and understanding and promote the use and implementation of innovative work practices to effect change, as states the units of competency **ICAPRG418A, ICAPRG503A, ICAPRG527A**. Throughout this program you are to demonstrate knowledge in:

- Australian Computer Society Code of Ethics.
- Federal and state or territory legislation and policy relevant to an IT environment relating to:
    Access and equity, copyright and intellectual property and OHS.
- Privacy.
- Organisational communication processes and procedures.
- Organisational requirements for customer service.

And skills in:
- Communication skills to liaise with internal and external personnel on ethical and privacy, operational and business-related matters.
- Learning skills to update personal ethical and privacy knowledge through professional development literacy skills to apply standards and legislation to policy and procedure development and monitoring.
- Planning and organisational skills to plan, prioritise and monitor own work.
- Research skills to gain and maintain current industry privacy and ethical information.
- Technical skills to perform application and system security and storage management.

Assessment description:

You will undertake **computer based test** based on class lectures and activities in this Practical Activity.

Procedure:

1 You will need to follow instructions below and address all activities required.
2 This is an individual activity where each candidate will be assessed individually;
3 Complete all activities and submit assessment evidence (including these papers) to your assessor the date specified above (see submission details).
4 Referencing : All findings from the internet or other sources must be referenced as per standards laid by APA referencing guide at: http://www.usq.edu.au/library/help/referencing/apa

Specifications/Conditions:

Your assessor will be looking for evidence of:
- Analyse legislation and standards relating to professional conduct and privacy in the IT industry
- Contribute to the development of a code of ethics and monitor the workplace to ensure code of ethics is being applied and is appropriate
- Contribute to the development of a privacy policy and monitor the workplace to ensure the policy is being applied and is appropriate.
- Relevant organisational policies, legislation and standards documentation.
- Industry codes of practice.

Assessment Details

Units covered in this project:

ICTPRG418 Apply intermediate programming skills in another language
ICTPRG527 Apply intermediate object-oriented language skills
ICTPRG501 Apply advanced object-oriented language skills
ICTPRG523 Apply advanced programming skills in another language
ICTPRG505 Build advanced user interface
ICTPRG507 Implement security for applications

Project time-frame:

Two (2) terms, eighteen (18) weeks divided into two (2) parts:
- **Part A** (Term 1, 8 weeks) – Intermediate Programming
    - (ICTPRG418, ICTPRG527).
- **Part B** (Term 2, 10 weeks) – Advanced Programming
    - (ICTPRG501, ICTPRG523, ICTPRG505, ICTPRG507)

Problem Scenario

A company named Logic Peripherals Australia (LPA) has decided to invest in a new computer software package to manage the sales and stock of their computer peripheral line to rollout across their corporate network an internet web site. The new system they require will be a customised application to manage the following:

- Stock (Computer Peripherals)
- Sales & Invoicing
- eCommerce web site store with payment gateway

The project will be divided into three sections with the following user interfaces:

- **Desktop application**
    - This application will be used for internal intranet management of the system and will only be accessible on the corporate network or via VPN access. This interface will have full access to the system core with all features.
- **Mobile Application**
    - The mobile application will be used for external management of the system and will have limited access to only allow management of the stock, sales and invoicing, system administration level will not be available through this interface.
- **eCommerce web site store**
    - This is the end point interface for the customer to purchase products (computer peripherals) via the internet and will have no access to the system manage core.

All system data will need to be stored on a centralised database server that is accessible from all interfaces. Each section of the software package will need to be developed with a graphical user interface (GUI) and connect to the centralised database server.

A system administration section will be required to allow system administrators full access to the core system, only system administrators will have the required access level to manage system users and any other admin tasks available.

Development Schedule and tasks

The development schedule is divided into two (2) parts, intermediate and advanced. The advanced part is the main core design of system; this is referred to as the advanced alpha stage and will need to be completed by the end of term two (2).

Advanced Alpha Phase Development Schedule:

Week	Tasks
1	**A. Mobile application design (Android):** Create the android mobile application with the following requirements: 1. Design a logo for the application that represents the "LPA eComms" application. 2. Create a new android development project with a suitable name, "Lpamapp" is recommended. 3. Using the android WebView library build an interface shell for the mobile web interface designed in the intermediate phase of the project and use the webserver address as the URL where the web interface is located. 4. Create a splash screen activity for the application with a 5 second delay before loading the main activity (WebView page). 5. Compile (Build) the application.
2	**B. Web Interface Optimisation for Mobile application design:** Optimise the Web Interface with the following requirements: 1. Create code in JQuery to modify the page format for mobile interfaces based on the width of the screen resolution in portrait or landscape. 2. Disable any default zooming feature.
3	**C. Log file:** Create code for a logging and exception handling system in the web interface with the following requirements: 1. Create code in PHP to capture the following information: ➢ System Errors. ➢ System activity (eg. User login, page access) 2. Create code in PHP to read in an existing log file or create one if it does not exist then write/append log information to a file named "***lpalog.log***" in a "***log***" directory of the web application.
4	**D. eCommerce web site:** Create an eCommerce web site to allow the sales of LPA's products with the following requirements: 1. Main home page – consisting of the following: ▪ a page header that is global to all pages ▪ a menu system for navigation within the application ▪ a page body for main home page content ▪ a page footer that is global to all pages 2. Product catalog page – consisting of the following: ▪ a page header that is global to all pages ▪ a menu system for navigation within the application

	- a page body for the listing of the products the following minimum components: ➢ Product name ➢ Product description ➢ Quantity ➢ Product price ➢ Add to cart button - a search option to allow listing of filtered products - a page footer that is global to all pages - Create code to add products to a cookie when the add to cart button is clicked.
5	**D. eCommerce web site (Continued…)** 3. Customer registration page – consisting of the following: - a page header that is global to all pages - a menu system for navigation within the application - a page body for the listing of the products the following minimum components: ➢ a First name label and text field ➢ a Last name label and text field ➢ an address label and text field ➢ a Phone Number label and text field ➢ a Username label and text field ➢ a Password label and text field ➢ a Confirm Password label and text field ➢ a Register button ➢ a Cancel button - a page footer that is global to all pages.
6	**D. eCommerce web site (Continued…)** - Customer login page – consisting of the following: - a page header that is global to all pages - a menu system for navigation within the application - a page body with the following minimum components: ➢ a dialog window that is centered on the screen ➢ a caption on the dialog title bar "Customer Login" ➢ a user name label and text field within the customer login dialog ➢ a password label and text field with the text field masked within the user login dialog ➢ a login button within the customer login dialog - a page footer that is global to all pages.
7	**D. eCommerce web site (Continued…)** 4. Checkout page – consisting of the following: - a page header that is global to all pages - a menu system for navigation within the application - a page body with the following minimum components: ➢ a table to list products added to the cart with the following

	minimum columns: ▪ Product Code (lpa_stock_ID) ▪ Product Name (lpa_stock_name) ▪ Price (lpa_stock_price) ▪ QTY with field to change quantity ▪ Amount ▪ Total row at the bottom of the table to sum values in the amount Column. ➢ an update button ➢ a confirm button ▪ a page footer that is global to all pages.

8	***D. eCommerce web site (Continued…)***
	     5. Checkout Payment page – consisting of the following:
	       ▪ a page header that is global to all pages
	       ▪ a menu system for navigation within the application
	       ▪ a page body with the following minimum components:
	        ➢ a First name label and text field
	        ➢ a Last name label and text field
	        ➢ an address label and text field
	        ➢ a Phone Number label and text field.
	        ➢ A Payment Option label and drop down select with (PayPal, VISA, MasterCard, Direct deposit)
	        ➢ a Pay Now button.
	        ➢ a Cancl button.
	       ▪ a page footer that is global to all pages.
	
	       If customer has logged in then all the above fields should be filled in automatically, except for the payment option, else redirect the customer to the customer login page.
	
	     6. Checkout complete page – consisting of the following:
	       ▪ a page header that is global to all pages
	       ▪ a menu system for navigation within the application
	       ▪ a page body with the following minimum components:
	        ➢ a message displaying the that payment is successful and the order in now complete.
	        ➢ a close button.
	       ▪ a page footer that is global to all pages.
	
	       This page needs to clear the cart cookie and save all invoice data to the invoices and invoice items tables in the LPA database.

9	***E. Implement encrypted login:***
	     Implement password encryption as follows:
	     1. Create code in PHP to hash the password string with salt using Blowfish algorithm:
	       ▪ Password must be stored in the database in an encrypted string.
	     2. Create code in PHP to verify password hash:
	       ▪ Password must be retrieved from database in an encrypted string.

Alpha Testing Phase	
10	***F. Finalisation of project development:*** As the development life cycle, has now reached the final stage operate the system with live data and make any necessary maintenance adjustments before the beta stage release (Submit project for assessment)

Assessment Submission Details

This assessment requires the following evidence:

- The assessment cover sheet (first two pages of the document) filled in with:
  - Your Name
  - Student Number
  - Date
- All created documents/source code/reports for this assessment.
- A **zip** or **7z** compressed archive containing the completed cover sheet and all relevant assessment documentation for this assessment.

Submitted electronically via instructions from you assessor/instructor.