NATIONAL PRACTICAL EXAMINATIONS – SCHOOL YEAR 2022 – 2023

SUMMATIVE/INTEGRATED ASSESSMENT

SINGLE ASSESSMENT FORM

Assessment Detail		Assessment Center Details	
SECTOR:	ICT	**Place of Assessment/ Practical Examinations center:**	
Sub-SECTOR /TRADE:	SOFTWARE DEVELOPMENT		
REQF LEVEL:	5	**Date of Assessment:**	
QUALIFICATION TITLE:	TVET CERTIFICATE V IN SOFTWARE DEVELOPMENT		

1. INTEGRATED SITUATION:

LAVINIA TSS is a school located in Northern Province, Rulindo District, Buyoga sector. It has two sectors and three trades as follow:

- **Sector 1: ICT and Multimedia:**

  -Trade 1: Software development (level3, level 4 and level 5).

  -Trade 2: Networking and internet technology (Level 3, level 4 and level 5).

- **Sector 2: Hospitality and Tourism**

  -Trade 3: Tourism (Level 3, level 4 and level 5).

  In this school, the following activities are carried out by different staff members:

  - The deputy school manager in charge of training records trainees marks and makes report cards,
  - The School Manager controls and manages employees' information,
  - The Secretary registers trainees and manages their information,
  - The Storekeeper manages the school stock,
  - The Shopkeeper manages the production unit.

Because the school is still using traditional method of keeping information where recording of data is done by using papers and books; the school has a problem of difficulty in data accessibility, data insecurity, hard to make reports, and lack of information integrity. To overcome the problems above, the school decided to hire a web application developer to develop a web application and computerize school activities.

TASK1:

The school has hired you as a web application developer to develop a web application for LAVINIA TSS that will manage trainees' results in formative, comprehensive, and summative assessments for first term.

The application allows the Deputy School Manager in charge of training to:

- Create an account, login by using UserName and Password then logout
- Insert, Retrieve, Update, and Delete records from forms of all tables given below.
- Generate a report which will show a trainee's trade and marks for any module.

INFORMATION:

A database called TRAINEES_ASS_MANAGEMENT was designed by the database designer having the following tables:

- Users (User_Id (PK), UserName, Password)
- Trades (Trade_Id (PK), Trade_Name)
- Trainees (Trainee_Id (PK), FirstNames, LastName, Gender, Trade_Id (FK))
- Modules(Module_Id(PK),ModName,ModCredits)
- Marks (Mark_ID(PK),Trainee_Id(FK), Trade_Id(FK), Module_Id(FK),User_Id (FK),Formative_Ass, Summative_Ass, Comprehensive_Ass, Total_Marks_100)

INSTRUCTIONS

- Your work should be saved in your real names in a folder called (FirstName_LastName_National_Practical_Exam_2023) in htdocs for XAMPP or (FirstName_LastName_National_Practical_Exam_2023) in www for WAMP.

- The login is session based.

- The interface must be attractive.

- The forms must be linked to each other.

- After a successful login, the user will be able to record, update, retrieve, and delete records from a table.

- The application gives a way of displaying a report of trainees.

- The application is needed in seven (7) hours.

2. ASSESSMENT CHECKLIST

No	Criteria (C)	Indicator (NIE)	Leaner's Name (1)			Leaner's Name (2)			Leaner's Name (3)			Leaner's Name (4)		
		Index number	------------------------- -------			------------------------- ------			------------------------- ------			------------------------- ------		
		Time Start												
		Time End												
			Y or N	Score Y/NEI	Points (P)	Y or N	Score Y/NEI	Points (P)	Y or N	Score Y/NEI	Points (P)	Y or N	Score Y/NEI	Points (P)
1	Quality of Process (QPC) **(20%)**	**Indicator 1: Tools, equipment and materials are well used**												
		1. XAMPP setup or WAMP Setup is used												
		2. Text editor is used												
		3. Browser is used												
		Indicator 2: Folder is well created												
		1. XAMPP or WAMP is opened												

2.htdocs/www folder is opened											
3.Folder is created											
4.Folder is named											
Indicator 3. CRUD Operations are well performed											
1.TRAINEES_ASS_MANAGEMENT database is created											
2.Tables are created											
3.Records are inserted											
4.Records are displayed											
5.Records are updated											
6.Records are deleted											
Indicator 4 .Data constraints are correctly used											
1. Primary keys are used											

No	Criteria (C)	Indicator (NIE)	Y or N	Score Y/NEI	Points (P)	Y or N	Score Y/NEI	Points (P)	Y or N	Score Y/NEI	Points (P)	Y or N	Score Y/NEI	Points (P)
		2. Foreign keys are used												

			Leaner's Name (1) …………………………			Leaner's Name (2) …………………………			Leaner's Name (3) …………………………			Leaner's Name (4) …………………………		
	Index number		…………………………			…………………………			…………………………			…………………………		
No	Criteria (C)	Indicator (NIE)	Y or N	Score Y/NEI	Points (P)	Y or N	Score Y/NEI	Points (P)	Y or N	Score Y/NEI	Points (P)	Y or N	Score Y/NEI	Points (P)
2	Quality of Product (QPD) **(60%)**	**Indicator 1 :Front end and Database are well integrated**												
		1 Connection between web pages and database is established												
		Indicator 2: CRUD operations are properly applied												
		1.Records are inserted												
		2.Records are retrieved												
		3.Records are updated												
		4. Records are deleted												

		Indicator 2: User authentication and authorization is well done												
		1 Login form is created												
		2 User account is created												
		3 Session is established												
		4 Login is working												
		5 Logout button is created												
		6 Logout button is working												
		7 Session is destroyed												
		Indicator 3: Attractiveness of interfaces is appropriately applied												
		1.Background colors are used												
		2.Font colors are used												

No	Criteria (C)	Indicator (NIE)	Leaner's Name (1)			Leaner's Name (2)			Leaner's Name (3)			Leaner's Name (4)		
	Index number		....			....			....			....		
			Y or N	Score Y/NEI	Points (P)	Y or N	Score Y/NEI	Points (P)	Y or N	Score Y/NEI	Points (P)	Y or N	Score Y/NEI	Points (P)
3	Relevance (REL) **(5%)**	**Indicator 1: Instructions are well respected**												
		1. Report of trainee's trade, marks of a single module is generated												
		2. Folder is created in his/her name												
		3. Application files are saved												
		4. Task is completed												

		within 7 hours									
4	Right Attitud es (RA) **(5%)**	**Indicator 1: Professional behaviour is well demonstrated at the workplace**									
		1. Respect for others is shown									
		2. Dress code is respected									
		Indicator 2: Professional ethics is properly applied.									
		1.Computer is not locked									
		2.XAMPP/W AMP is not uninstalled									
		3.Text editor is not uninstalled									
		4.Web browser is not uninstalled									
		Indicator 3: Appropriate									

		language is well used												
		1.Polite language is observed												
		2.Body language is observed												

			Leaner's Name (1)			Leaner's Name (2)			Leaner's Name (3)			Leaner's Name (4)		
	Index number		....			....			....			....		
No	Criteria (C)	Indicator (NIE)	Y or N	Score Y/NEI	Points (P)	Y or N	Score Y/NEI	Point s (P)	Y or N	Score Y/NEI	Points (P)	Y or N	Score Y/NEI	Points (P)
5	Oral questions (OQ) **(10%)**	**1.Quality of process**												
		Qno1 :												
		Qno 2:												
		Qno 3:												
		2.Quality of product												
		Qno1 :												
		Qno 2:												
		Qno 3:												
		3.Relevance												
		Qno1 :												

		Qno 2:							
		Qno 3:							
		4.Right Attitude							
		Qno1 :							
		Qno 2:							
		Qno 3:							

6.Pre-determined conditions

1. Have Laptop or desktop computer with installed tools such as :XAMP or WAMP, Text editor and browser (1 for each trainee)
2. Electricity or generator
3. Lightning rod
4. Safety equipment like fire extinguisher and first aids kit.
5. Computer lab/smart classroom with chairs/desks and tables
6. Enough light in the working room
7. Special needs:

    ❖ An assistant to read for those trainees who cannot see
    ❖ An assistant to write (type on machines) for those who cannot write
    ❖ Assistance for those who cannot speak or/and hear, the assessor will give written oral questions to read and then the trainee will also write the responses by themselves.

8. Trainees should be given an integrated situation one hour before starting the exam in order to read it and understand the instructions.
9. The trainee is not allowed to go out of the examination room before the task is completed. The trainee is allowed to move out of the examination room if accompanied by the assessor for any special case.

7.Oral questioning items for each criterion

1 QUALITY OF PROCESS/2MARKS (Choose one question)
1.   What is Local Development Server did you use?
2.   What text editor did you use in designing your web application?
3.   Explain CRUD operations.

2. QUALITY OF PRODUCT/2MARKS (Choose one question)
1.   Differentiate front end from back end of web application.
2.   What have you done to protect your web application from unauthorized users?
3.   What is the importance of your application to a Deputy School Manager in charge of Training?

3. RELEVANCE/2MARKS (Choose one question)
1.   Who is the user of the web application you developed?
2.   Why have you saved your work in htdocs/www?
3.   Where did you save your project?

4.RIGHT ATTITUDE/2MARKS (Choose one question)

1.   How tools, materials, and equipment are handled?
2.   Why is it important to maintain Software Development professional ethics at workplace?
3.   Why do we need to install an antivirus on any computer?

8. Answer of Oral questions

1. QUALITY OF PROCESS/2MARKS (Choose one question)

1. What is Local Development Server have you used?

   Answer: Local Development Servers: XAMPP server or WAMP server

2. What text editor have you used in designing your web application?

   Answer: The text editor I have used is:

   - Sublime Text or
   - Notepad or
   - Notepad++ or
   - EditPlus or
   - Visual studio code or
   - Brackets

   Explain CRUD operations.

   Answer:

CRUD is the acronym for CREATE, READ, UPDATE and DELETE. These terms describe the four essential operations   for creating and managing persistent data elements, mainly in relational and NoSQL databases.

- The CREATE operation adds a new record to a database.
- READ returns records (or documents or items) from a database table (or collection or bucket) based on some search criteria

- UPDATE is used to modify existing records in the database.
- DELETE operations allow the user to remove records from the database

Answer:

- I have developed webpages using text editor
- I have saved my pages to htdocs of XAMPP or www of WAMP in local disk
- I have created database and tables through XAMPP in PHPMyAdmin
- I have connected my webpages to the database in order to manipulate data through webpages.

2.QUALITY OF PRODUCT/2MARKS (Choose one question)

1. Differentiate front end from back end of web application.

   Answer: The front-end of a web application refers to part of the web application that the user interacts with directly while the back-end of a web application is a part that the user can't see and interact with.

2. What have you done to protect your web application from unauthorized users?
   Answer:
   I have created a login form which allows a user to gain access to a web application by entering the username and password.

3. What is the importance of your application to a Deputy School Manager in charge of Training?

   Answer:

   The importance of my application to the Deputy school manager in charge of training is to manage the trainees' results in formative, comprehensive, and summative assessments for first term.

3.RELEVANCE/2MARKS (Choose one question)

1. Who is the user of the web application you developed?
   Answer:
   The user of my web application is the **deputy school manager in charge of training.**
2. Why is it important to maintain Software Development professional ethics at workplace?
   Answer:
   Workplace ethics protect company assets

3. Where did you save your project?

   Answer:

   The project is saved in:

   - **www** when you use WAMP server or
   - **htdocs** when you use XAMP server

4.RIGHT ATTITUDE/2MARKS (Choose one question)

1. How tools, materials, and equipment are handled?

   Answer:

   - The Power cables should be arranged securely.
   - We handle material by using dustbin
   - We handle equipment by using spray material.
   - Connect tools to the related ports.
   - We handle equipment by using soft clothes

2. Why is it important to maintain Software Development professional ethics at workplace?
   Answer:

Workplace ethics protect company assets

3. Why do we need to install an antivirus on any computer?

Answer:

- Block spam and ads

- Defense against hackers and data thieves
- Ensures protection from removable devices
- Protects your data and files
- Firewall protection from spyware and phishing attacks
- Limit the access of websites to enhance web protection
- Protects your password
- Cost-effective

Summary of Marks per Criterion

	Criteria	Marks
	Criteria	**Marks**
1	Quality of Process	**(20%)**
2	Quality of Product	**(60%)**
3	Relevance	**(5%)**
4	Right Attitudes	**(5%)**
5	Oral Questioning	**(10 %)**
Result		**/100**
	Criteria	**Marks**
1	Quality of Process	**(20marks)**
2	Quality of Product	**(60marks)**
3	Relevance	**(5marks)**
4	Right Attitudes	**(5Marks)**
5	Oral Questioning	**(10 marks)**
Result		**/100**

Note:

For each criterion, marks have to be detailed basing on the number of elements of indicators in the checklist as well as on the oral questioning format given above.

4. COMPUTATION OF SCORES

FORMULA:

1. In the assessment forms, assessment criteria have specific indicators with elements to be checked. They are marked either Y or N with the following meaning:
   Y means Yes and it is equivalent to 1 point and N means No and it is equivalent to 0 point
2. Points (P) in each **criterion** (C) result is equal to the number of Y divided by the **total number of elements in all indicators** (NEI) for that criterion, multiply by the **percentage** (C%) assigned in each criterion based on the case scenario in the table above multiplied by one hundred (100). Computation of points is up to two (2) decimal places.
$$P = Y/NEI*(C\%)* 100$$
   Eg: Y= 11/12 in QPC, 12/12 in QPD, 3/4 in REL, 8/9 in RA, 2/4 in OQ
   For QPC, $P = \frac{11}{12} * 20\% * 100 = \frac{220}{12} = 18$
   etc……. for each criterion
3. The initial result of one assessor is equal to the sum of all criteria results.
   Result = QPD + QPC + REL + RA + OQ
4. The final result (FR) is the average of the results from the three panel of assessors. FR is up to two (2) decimal places.
   FR = (Ass1Res + Ass2Res + Ass3Res)/3
   For more details, find appendix in rules and regulations

Score computation table

S/N	Criteria	Leaner's Name (1)	Leaner's Name (2)	Leaner's Name (3)	Leaner's Name (4) ....
		Points (P)	**Points (P)**	**Points (P)**	**Points (P)**
1	Quality of Process (20%)				
2	Quality of Product (60%)				
3	Relevance (5%)				
4	Right attitudes (5%)				
6	Oral questions (10%)				
	Result/100				

Assessor:

Name	Institution	Qualification	Phone	Signature

Note: All pages should have initial signature of the assessor

Done on ...., 2023 at (hour): .... Examinations center:

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