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# **Integrated/Summative assessment**

**Modules combined (Code and Name of the module):**

1. **SFDDD501-Database Development**
2. **SFDWD401- Website and Database integration**
3. **SFDWA501-Web Application Development**
4. **SFDDW401-Website development**
5. **SFDSF401 Basics and fundamentals of database**

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| --- |
| **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:**   -Trade1: 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 database designer to design a database model and a web application developer to develop a web application to computerize the school activities. |

**INTEGRATED SITUATION**

**TASK4: Contractual Employees Recruitment management**

Suppose that the school has hired you as a web application developer to develop an application for LAVINIA, develop a web application to manage the **LAVINIA TSS** contractual employees’ recruitment information.

The application allows the School Manager 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 **LAVINIA TSS** contractual employees recruitment information.

**INFORMATION**:

A database called LAVINIA**\_**RECRUITMENT\_MANAGEMENT was designed by the database designer having the following tables:

* Admin (UserId(PK), UserName, Password)
* Position (PostId(PK), PostName)
* CandidatesResult(CandidateNationalId(PK), FirstName, LastName, Gender, DateOfBirth, PostId(FK), ExamDate, PhoneNumber, Marks)

**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 user-friendly.
* 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 recruited contractual employees.
* The application is needed in seven (7) hours.

**2. Materials**

**2.1. Consumables materials**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **SN** | **Item** | **Technical specifications** | **Measuring Unit** | **Quantity** | **Unit price** | **Total cost** |
| 3 | Pens | Bic | 1 | 1 | 300 | 300 |
| 4 | Main power source | REG electricity or Generator | 1KWH | 1KWH | 2680 | 2680 |

**3. Tools**

**3.1. First choice tools**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **SN** | **Item** | **Technical specifications** | **Measuring Unit** | **Quantity** | **Unit price** | **Total price** |
| 1 | XAMPP | X64 bit | 1pack | 1 | - | - |
| 2 | Browser | First-choice | 1pack | 1 | - | - |
| 3 | CSS framework | Bootstrap 5.0 | 1pack | 1 | - | - |
| 4 | Windows 10 | X64 bit | 1pack | 1 | - | - |
| 5 | Text editor | Sublime Text 2 | 1pack | 1 | - | - |

**3.2. Alternatives tools**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **SN** | **Item** | **Technical specifications** | **Measuring Unit** | **Quantity** | **Total price** | **First choice that it can replace** |
| 1 | Wamp | X64 bit | 1pack | 1 | 0 | Xampp |
| 2 | Browser | Google Chrome | 1pack | 1 | 0 | MS Edge |
| 3 | CSS framework | Bootstrap 4.0 | 1pack | 1 | 0 | Bootstrap 5.0 |
| 4 | Windows 7 | X64 bits or x32 bits | 1pack | 1 | 0 | Windows 10 |
| 5 | Text editor | Notepad++ | 1pack | 1 | 0 | Sublime Text 2 |

**4. Equipment**

**4.1. First choice equipment**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **SN** | **Item** | **Technical specifications** | **Measuring Unit** | **Quantity** | **Unit price** | **Total price** |
| 1 | Computer desktop | RAM:4GB or above  Hard disk:500GB or above  Processor:1.6GHz or above  Screen resolution:1366x768 or above | 1pc | 1 | 340000 | 340000 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **SN** | **Item** | **Technical specifications** | **Measuring Unit** | **Quantity** | **Total price** | **First choice that it can replace** |
| 1 | Computer laptop | RAM:4GB or above  Hard disk:300GB or above  Processor:1.3GHz or above  Screen resolution:1366x768 or above | 1pc | 1 | 280000 | Computer desktop |

**4.2. Alternatives equipment**

**5.Checklist**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| No | Criteria  ( C ) | Indicator  (NIE) | Y | N |
| 1 | Quality of Process (QPC) **(20%)** | **Indicator 1:** **Tools, equipment and materials are well used** | | |
| *1. XAMPP setup or WAMP Setup is used* |  |  |
| *2. Editor is used* |  |  |
| *3. Browser is used* |  |  |
| **Indicator 2:** **Folder is appropriately 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* |  |  |
| *2. Foreign keys are used* |  |  |
| 2 | Quality of product **(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 3:** **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 4 :** **Attractiveness of interfaces is appropriately applied** | | |
| *1.Background colors are used* |  |  |
| *2.Font colors are used* |  |  |
| 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 attitude (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/WAMP 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 used* |  |  |
| *2: Body language is used* |  |  |
| 5 | Oral questions (OQ) **(10%)** | **Quality of Process** | | |
| *Qno1 :* |  |  |
| *Qno 2:* |  |  |
| *Qno 3:* |  |  |
| **Quality of Product** | | |
| *Qno1 :* |  |  |
| *Qno 2:* |  |  |
| *Qno 3:* |  |  |
| **Relevance** | | |
| *Qno1 :* |  |  |
| *Qno 2:* |  |  |
| *Qno 3:* |  |  |
| **Right Attitude** | | |
| *Qno1 :* |  |  |
| *Qno2:* |  |  |
| *Qno 3:* |  |  |

**6.Pre-determined conditions**

1. Have Laptop or desktop computer with at least 10GB free space on local disc C and with installed tools such as XAMP or WAMPP, 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.

1. Trainees should be given an integrated situation one hour before starting the exam in order to read it and understand the instructions.
2. 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)**
2. What is Local Development Server did you use?
3. What text editor did you use in designing your web application?
4. Explain CRUD operations.
5. **QUALITY OF PRODUCT/2MARKS (Choose one question)**
6. Differentiate front end from back end of web application.
7. What have you done to protect your web application from unauthorized users?
8. What is the importance of your application to a Deputy School Manager in charge of Training?
9. **RELEVANCE/2MARKS (Choose one question)**
10. Who is the user of the web application you developed?
11. Why have you saved your work in htdocs/www?
12. 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?

**7. 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

1. 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

1. 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

**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.

1. What activities have you done well?

**Answer:** The activities that I have done well are:

* + Creating database
  + Creating tables in the database
  + Inserting data into table through the HTML forms
  + Connecting database to the webpage
  + Retrieving data from database to the browser
  + Updating data from database to the user interface
  + Deleting data from database through the webpage
  + Creating a login
  + Generating the reports

1. What is the importance of your application to the School Manager?

**Answer:**

The importance of my application to the school manager is to manage the **LAVINIA TSS** contractual employees’ recruitment information.

**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 **school manager.**

1. Why have you saved your work in htdocs/www??

**Answer:**

In order to access your website

1. 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

1. Why is it important to maintain Software Development professional ethics at workplace?

**Answer:**

**Workplace ethics protect company assets**

1. 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** |
| 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.