



NATIONAL PRACTICAL EXAMINATIONS FOR TSS LEVEL

5,

SCHOOL YEAR 2022-2023

SECTOR: ICT AND MULTIMEDIA

**TRADE: SOFTWARE PROGRAMMING AND EMBEDDED
SYSTEMS**

**INTEGRATED ASSESSMENT FOR RESTFUL SERVICES
AND WEB APPLICATIONS DEVELOPMENT**

Modules combined:

1. SFPGI301 GRAPHIC USER INTERFACE DESIGN
2. SFPWI301 DEVELOPMENT OF WEB USER INTERFACE
3. SFPWP301 WEB APPLICATION DEVELOPMENT USING PHP
4. SFPWJ301 WEB APPLICATION DEVELOPMENT USING JAVASCRIPT
5. SFPAD501 APPLICATION DEPLOYMENT
6. SFPST501 SOFTWARE TESTING

1. INTEGRATED SITUATION:

Rwanda TVET Board (RTB) is a government institution established in 2020 by the presidential order No N° 123/01 of 15/10/2020 published in Official Gazette N° 32 bis of 19/10/2020. It was established under the Ministry of Education, to be at the fore-front of all efforts to promote TVET from level one (1) to level (5) of the Rwanda TVET Qualification Framework. The institution wishes to have an **Equipment Distribution System** to register employee with information showing the department and laptop assigned to them, details of the table are as follows:

Employee Laptop: id, firstname, lastname, national identity, telephone, email, department, position, laptop manufacturer, Model, serialNumber

Example: 101, Samanta, ISHIMWE,12000710913307, 0788888888, samanta@gmail.com,Human resource, Manager, HP, envy, 3400

TASK:

As a full stack developer, you have been hired to develop for them equipment distribution system with these minimum features:

Admin interface:

1. Allow user to sign up with email as the username and set a password and confirm it using postman.
2. Design a login page in figma to be used as login
3. Design a form using figma to be used while adding employees into the above mentioned table
4. Using figma, design a page with pagination to show registered employees
5. Allow signed up user (in step 1) to login into the system using web interface you designed.
6. Implement form designed in step three (3) and as a signed in user add at least three (3) records into the system
7. Implement page designed in step four (4), display all record saved in the system

Technical specifications:

1. You should design the mockup (login page, form to register employees, table to display registered employees) of this system first using figma.
2. You should build frontend in react.js.
3. You should build backend using one of two languages, node.js, php (any framework).
4. User data (names, username, password) should be added manually without front end interface. You can use postman/DBMS.
5. Managing Employee information provided above should be performed using the front end developed.
6. You should either use MySQL or Postgresql as your DBMS
7. You should document your backend APIs with swagger UI
8. You should use JWT in authorization and authentication
9. Apart from Signup and login APIs others should be accessed by a logged in admins.
10. Ensure record are displayed in a paginated manner
11. Handle exceptions and validations properly
12. Handle CORS and any other common web security attacks properly
13. Good looking and responsive system wins more points

Time

The allocated timing is 4hours.