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**NATIONAL PRACTICAL EXAMINATIONS FOR TSS**

**LEVEL 5,**

**SCHOOL YEAR 2022-2023**

**SECTOR: ICT AND MULTIMEDIA**

**TRADE: SOFTWARE PROGRAMMING AND EMBEDDED  
SYSTEMS**

**INTEGRATED ASSESSMENT FOR ANDROID MOBILE  
APPLICATION DEVELOPMENT**

**Modules combined:**

**Module: ANDROID MOBILE APPLICATION DEVELOPMENT**

## 1. INTEGRATED SITUATION:

The Energy Utility Corporation Limited (EUCL) is a company providing electricity to its customers. EUCL is looking for a mobile app developer to develop an application to be used in generating prepaid tokens used by their clients.

### TASK

You are hired as a mobile app developer to develop an **android** application in **react native** to be used in generating prepaid tokens used by EUCL's clients. The task details are as follows:

#### A) Clients interface

- i) User enters amount of money and meter number (accept only 6 digits) then the system gives him a token to use.
- ii) The system generates an **eight-digit token**. The token generated by the platform gives number of days to have electricity in the meter, the policy should be as follows: 100 Rwf buys a token that lights only 1 day, less than 100rwf is not allowed, half a day token is not allowed, but users can pay any multiple of 100 and thus get equivalent days BUT should not exceed 5 years (365 days make a year)
- iii) The system allows clients to validate the token, during validation the system displays number of days of lighting, eg a token for 100rwf should light one day.
- iv) The system allows users to check all tokens that were generated against entered meter number.

**Technical specifications:**

- Android application should be built using react native.
- Handle errors and validations, in case of any error or exception users should see relevant message of what went wrong.
- Backend should be developed using java either spring boot or nodejs or firebase
- The database to use should be either firebase, mongdb or MySQL.
- Database must include a table named **purchased tokens** with columns **id** (type: number, length: 11), **meter number** (type: string, length: 6), **token** (type: string, length: 8), **token\_status** (type: enum of values USED,NEW,EXPIRED), **token value days** (type: number, length: 11), **purchased date** (type: date time stamp), **amount** (type: number, length: 11).