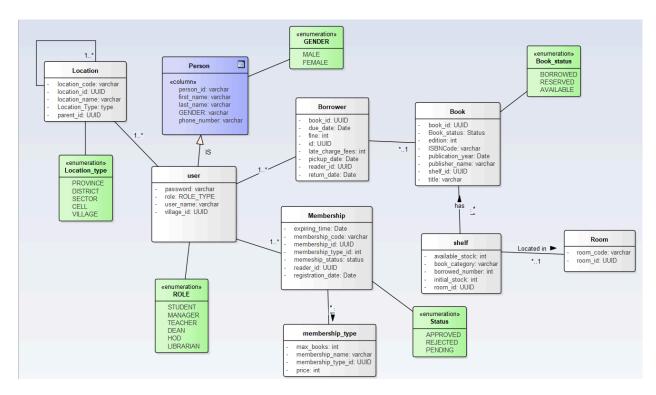PROJECT Exercise /30 pts.

Course: Software Testing and Techniques.

TOPIC: AUCA Library Management System.

Please refer to the picture below and build an application meeting all the requirements.

Create a Java or Maven project and implement the mentioned requirements. You will not need to implement a UI for this project, but you will use Java User Input (Scanner) to insert the data. The person class is the Super Class of User. This class is not created on a database. This system will manage hard copies.

The system will help the institution manage who borrows the books, how many are borrowed, when they should return the books, apply charges in case of late return, and so on.

The fine is initialized to zero at the borrowing date.

Other users apart from the librarian can create accounts and select his/her preferred membership.

Membership:

Gold: 50 Rwf per day, can borrow up to 5 books.

Silver is 30 Rwf per day, and you can borrow up to 3 books.

Striver: 10 Rwf per day, can borrow up to 2 books.

- The database name is auca_library_db. 1 pt.

Requirements:

1.   Implement the code to create locations from Province, District, Sector, Cell, and Village. 3 pts

Write their test cases.

2.   **Write the method that accepts the village id and returns its province name.**

Write its test case. 2 pts.

3.   **Write the method that accepts a person's ID and returns his/her location (province name)**

Write its test case. 2 pts.

4.   Write the method to create an account and hash the password so that it is encrypted.

Write its test case. 3 pts

5.   Write the method to authenticate the user.

Write its test case. 1 pt.

6.   Write the method to register for membership. Write its test case. 2 pts

7.   Write the method for borrowing the book. Write its test case. 2 pts.

8.   Write the method to validate if the user does not borrow more books than his/her membership books. Write its test case. 3 pts

9.   Write the method to assign the book to the shelf. Write its test case. 1 pt.

10. **Write the method to assign the shelf to the room. 1 pt.**

11. **Write the method to check how many books are in a specific room. 2 pts**

12. Write the method that returns the room with a few books. 3 pts

13. Write the method to return the charge fees for late returns. 4 pts

Plagiarism (Sharing codes) is zero in this course, not only in this exercise. Please, don't dare.