

## Question 1: Practical - mini project

### Problem statement

Foward is a Software Developer in **SASO Office**. He is working under the supervision of Mr Thabang, a Senior Developer at **SASO Office**.

Mr Ronaldo is a supervisor of all Tutors. The office is normally big, with around 20 to 100 tutors per semester under his care. This makes it challenging for him to know the tutors closely. He conjures up an idea of a web application that will help him know the tutors better. First, he wants to take photos of the individual students, store them in a local drive, then perform the following tasks through the envisaged web application:

1. Persist or store the details of each tutor in the database. A tutor has a **photo, name, age, gender, stuff number**, and a **list of subjects** each tutors. The photo must be read from the local drive. A tutor can support **one, two, three, four**,... subjects. The number of subjects done by the tutor is not known in advance. Each persisted record must also include the **timestamp**.
2. Search for a tutor in the database using the **stuff number** as the search key. If found, the **photo** of the tutor, **name, age, gender, stuff number** and the list of subjects the tutor is supporting must be displayed. If not found, an appropriate message must be displayed.
3. View all the tutors in the database. Again, for each tutor, the **photo, name, age, gender, tutor number** and a **list of subjects** the tutor is supporting must be displayed.
4. Delete or remove a specific tutor from the database using the **stuff number** as the search key.
5. Determine and display the **number of tutors** stored in the database.

Mr Thabang also wants the Administrator to have access to the database. A admin must be able to perform the following tasks:

1. Get the total number of **males** and **females** constituting the office.
2. Get the average **age** of males.
3. Get the average **age** of females.
4. Get the **youngest** tutor. Display only the **photo, name, age, gender, age** and **list of subjects** the tutor support.

This means the web application must have two roles, a **supervisor** and a **admin**. Mr Thabang task Foward with the responsibility of creating a **database-driven, secured** web application to meet the needs or requirements of Mr Ronaldo.

### To do:

Assuming that you are Foward, create the web application for **SASO**. as per the requirements above. When creating the database use the following data:

- Username: **app**
- Password: **123**
- Database name: **TutorListDB**

The login details of a supervisor are as follows:

- Username: **supervisor**
- Password: **123**

Those of the administrator are as follows:

- Username: **admin**
- Password: **123**

**Given files:**

You are given five (5) tutors photos that you can use to test your web application. Find them in the zipped file titled **photos.zip**.

**Submission reminder**

Please submit your work as follows:

**Question 1:**

Send the following files to the Lecturer's PC:

- WAR file.
- Database (or tables).
- Zipped project(s).
- Any other files relevant to your project.