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| **National University of Computer and Emerging**  **Sciences** |
| In Lab Exercise 6  “Stored Procedures” |
| Database Systems Lab |
| Spring 2023 |

Department of Computer Science FAST-NU, Lahore, Pakistan

**You are given a script.sql, create database, tables and populate data in your db.**

1. Write a procedure named "**getUnenrolledStudents**" that takes in no parameters. The procedure should retrieve all the students who are not enrolled in any course and display their information.
2. Write a procedure named "**updateStudentAge**" that takes in **parameters** for "studentID" and "newAge." The procedure should update the age of the student with the given ID in the "Students" table.
3. Create a procedure named "**deleteStudent**" that takes in a **parameter** for "studentID." The procedure should delete the student record with the given ID from the "Students" table and all his enrollment information.
4. Write a procedure named "**getCourseStudents**" that takes in a **parameter** for "courseID." The procedure should retrieve all the students enrolled in the course with the specified courseID and display their names and majors.
5. Create a procedure named "**getStudentInfo**" that takes in a **parameter** for "studentID." The procedure should retrieve the student's information, including their name, age, rollNo, major, and the courses they are enrolled in, with their respective departments, and display them.
6. Write a procedure named "**getMostPopularCourse**" that takes in an **optional parameter** for "department." The procedure should retrieve the course with the most enrollments in the specified department and display the course's information, including the course name, instructor, and the number of students enrolled in the course, and display them. If no department is specified, ‘CS’ should be taken as default value.
7. Create a procedure named "**calculateCourseGPA**" that takes an **input parameter** for "courseID" and an **output parameter** for "averageGPA." The procedure should calculate the average GPA of all the students enrolled in the specified course and store the result in the output parameter.
8. **ALTER** the above procedure and display the average GPA of all the students in the "Students" table.
9. Write a procedure named "**getCourseEnrollmentCount**" that takes in a **parameter** for "courseID." The procedure should retrieve the total number of students enrolled in the course with the specified courseID and display the count.
10. Create a procedure named "**getCourseWithoutGrades**" that retrieves all the courses that have no grades recorded in the "Grades" table and displays their details.