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Database Programming (DPG621S) Project Structure

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Course Aims: This course is designed to expose students to database programming techniques and skills needed to **develop secure and different database applications**.

Specific Learning Outcomes:
Upon completion of the course students will, through assessment activities, show evidence of their ability to:

- **Develop database applications and interfaces**.
- **Apply procedural programming techniques** to SQL to optimise queries.
- Design a well-formed eXtensible Markup Language (XML) document that is valid against a given document type definition (DTD) or XML schema.

Comprehensive Learning Outcome:
Apply complex Structured Query Language programming procedures to **develop database systems**.

Projects Structure/Schedule

Instructions to Students

a) The project contributes to your final mark.
b) Please feel free to contact your lecturer if you have any questions or problems regarding the project.
c) The project is to be completed in a group of 5.
d) Each deliverable has a deadline. Please respect and deliver on time.
e) If students are found to have plagiarised, this is a crime, serious actions will be taken. (please read through the Course Outline)

Project Description

- Each group will be allocated a topic.
- Your group development work is confidential and private, as the opposite group with the same topic is your competitor.
- In the end, you will be presenting your work and compete with the other groups on the same topic.
- The best project developed will get good marks.

Topics

Topic 1:	Description: Design and develop an application that will select whether grade 1 learners can be admitted to a school. The learners should have turned 6 before 1st September in the previous year. If the learners have English as a second language, they need to be placed in classes only reserved for them. If English is a first language, then they need to be placed into specific classes reserved for them. If the learners have special needs e.g., need Wheelchair access, the system needs to be able to capture this as well. They may be various other special needs that you need to research and include in your application. The system needs to have an interface for parents and teachers. The application needs to give feedback to both parents and teachers. e.g. parents can know if their application was successful or not. Teachers will know which students are in their classes.
Topic 2:	Description: Design and develop an application for daily student attendance in schools, universities, and institutes. If facilitates to access the attendance information of a particular student in a particular class. This system will also help in evaluating the attendance eligibility criteria of a student. The student attendance system helps teachers to mark the online attendance of students during class & reduce manual work. It is used to track student's attendance, absentee record, attendance history & other related documents.
Topic 3:	Description: Work Integrated Learning (WIL) is the term given to an activity or program that integrates academic learning with its application in the workplace. The practice may be real or simulated and can occur in the workplace, at the university, online, or face-to-face. Design and develop an application for work-integrated learning placement that requires a student to register for an internship or project and enroll in a specific course. Once done, the student should record their company details as well as their supervisor at the workplace. Followed by tracking the students' progress for 3 months before they perform their final presentation.
Topic 4:	Description: Design and develop an application that will track alumni. Alumni tracking system is an online-based application that helps to track university graduates. The aim is to improve the current tracking procedure of university graduates and providing alumni data to college faculties. An alumnus is a former student or pupil of a school, college, or university.
Topic 5:	Description: Design and develop an application focusing on career guidance and counseling an individual's competencies in self-knowledge, educational and occupational exploration, and career planning. It is an application designed to assist individuals in making and implementing informed educational and occupational choices.

Expected Skills (obtained after the project)

Definition of the problem	Usage of tools to solve the problem	Software Validation / Testing
Problem-solving Skills	Research Skills	Communication skills
Leadership skills	Self-confidence	Self-improvement
Programming skills	Self-motivation	Technical skills
Taking initiative	Teamwork	Writing skills

Advice to the Groups

- Before you start with your project, please brainstorm and have discussions in the group to revise and have a common understanding of skills gained from previous courses like Database Fundamentals, etc.
- NOTE: Please do a lot of research (online, library, etc.) and reading.
- Try to handle all project issues such as group members not participating.

Deliverables / Deadlines

- Please respect the deadlines.
- All submissions are done on eLearning (no hard copies, nor email submissions will be accepted).
- NOTE: Only ONE member from the group is uploading the project components.

Project		
Tasks	**Due Date**	**Weight**
User Requirements	30 August 2021	10%
E-R Model	10 September 2021	10%
Logical Design	15 September 2021	10%
Physical Design	15 September 2021	10%
Prototype	8 November 2021	60%