RELATIONAL DATABASES

CONTINUOUS ASSESSMENT

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- DESIGN AND DEVELOP A DATABASE IN MYSQL
- THE DATABASE CAN BE FOR ANY BUSINESS, ORGANIZATION, OR VOLUNTARY GROUP.
- INDIVIDUAL ASSESSMENT – WORK ON YOUR OWN TO DESIGN AND IMPLEMENT DB.
- TWO DELIVERABLES
  - DESIGN IN WEEK 7: SUNDAY 28TH OCT.
  - IMPLEMENTATION IN WEEK 12: SUNDAY 9TH DEC

DELIVERABLE 1: DESIGN DOCUMENT

THIS DOCUMENT SHOULD CONTAIN

- A TITLE PAGE, TABLE OF CONTENTS, PAGE NUMBERS AND
- A BUSINESS DESCRIPTION THAT OUTLINES THE BUSINESS/ORG/CHARITY/CLUB, INCLUDING FUNCTIONS, RULES AND PROCESSES INVOLVED IN THE BUSINESS. THIS DESCRIPTION SHOULD EXPLAIN ALL ELEMENTS OF THE BUSINESS THAT ARE BEING MODELLED. IT NEEDS TO BE APPROXIMATELY A PAGE IN LENGTH.
- AN ENHANCED ENTITY RELATIONSHIP MODEL EER, THERE SHOULD BE 6 OR MORE ENTITIES IN THE DIAGRAM WITH ASSOCIATED KEYS, ATTRIBUTES, CONSTRAINTS AND RELATIONSHIPS IDENTIFIED. DIAGRAM TO BE DRAWN USING CONVENTIONS TAUGHT IN CLASS.

DELIVERABLE 2: IMPLEMENTATION DOCUMENT

THIS DOCUMENT SERVES AS THE REPORT OF YOUR IMPLEMENTATION OF THE MODELLED DATABASE FROM YOUR DESIGN DOCUMENT.

- ANY CHANGES TO THE DESIGN SINCE SUBMITTING THE DESIGN DOC ARE TO BE DETAILED.
- NORMALISED LIST OF TABLES WITH ATTRIBUTES FROM THE EER (3NF)

  E.G. STUDENT(STUDENT_NUM, STUDENT_NAME, ADDRESS, MATURE)
- TABLE MAPPING : DETAILED DESCRIPTION OF EACH TABLE, IDENTIFYING DATA TYPES, SIZE AND CONSTRAINTS FOR EACH COLUMN ON EACH TABLE.

DELIVERABLE 2: IMPLEMENTATION DOCUMENT TABLE MAPPING

Sample Table mapping
Table name: Student

Field	Type	Size	Null/Not Null	Default	Constraints	Description
StdNo	char	8	Not Null		PK	Unique student number
Name	char	20	Not Null			Surname followed by first name
Address	char	100				College address
Mature	char	1		N	Y or N	States if student is greater than 24 years old in year 1.

DELIVERABLE 2: IMPLEMENTATION DOCUMENT

- SQL IMPLEMENTATION MUST ALSO BE INCLUDED IN THE SUBMISSION
  - THE SQL YOU WROTE TO CREATE ALL OF YOUR TABLES AND ASSOCIATED CONSTRAINTS, AND INSERT DATA IS TO BE SAVED IN A FILE WITH .SQL EXTENSION.
  - THE SQL YOU WROTE TO QUERY THE DATABASE MUST BE INCLUDED IN THE IMPLEMENTATION DOCUMENT, FOR EACH QUERY YOU MUST SAY WHO IN THE ORGANIZATION WOULD USE THE QUERY AND FOR WHAT PURPOSE.

SUBMISSIONS

- **DELIVERABLE 1, SUNDAY 28TH OCT**
  - WORD/PDF DOCUMENT SUBMITTED THROUGH MOODLE
  - EER MODEL CAN BE HAND DRAWN, OR TAKE A PHOTO OF THE DRAWING AND INSERT INTO WORD/PDF DOC.
- **DELIVERABLE 2, SUNDAY 9TH DEC**
  - ZIP FILE SUBMITTED THROUGH MOODLE CONTAINING:

    WORD/PDF DOCUMENT OF NORMALIZED TABLES, TABLE MAPPING, SQL QUERIES AND USE

    .SQL FILE OF CREATE TABLE AND INSERT STATEMENTS

GENERAL BREAKDOWN

- 30%: ANALYSIS AND DESIGN OF A RELATIONAL DATABASE
    - REPORT TO INCLUDE BUSINESS SCENARIO DESCRIPTION, RULES AND PROCESSES IDENTIFIED, EER DIAGRAM.
- 20%: IMPLEMENTATION OF A RELATIONAL DATABASE
    - REPORT TO INCLUDE NORMALISED TABLES, TABLE MAPPING DETAILS, SQL STATEMENTS USED TO CREATE EACH TABLE AND ASSOCIATED CONSTRAINTS, AND POPULATE TABLES WITH DATA.
    - REPORT SHOULD ALSO INCLUDE FREQUENTLY USED QUERIES APPROPRIATE TO THE BUSINESS SCENARIO.

GRADING SPECTRUM

EER Diagram	DDL SQL	DML SQL	Result
Simple EER	Basic Create table Insert	Basic SELECT statements	Baseline 40-50
EER with super/sub types normalised	Basic Create, insert, update	Basic SELECT statements with single row queries	Good 50-60
Extensive EER with super/sub types normalised	Advanced Create, insert, update, constraints	Advanced SELECT statements with multi row queries	Excellent 60-70
Extensive EER with super/sub types recursive relationship Historical modelling	Advanced Create, insert, update, access, Constraints, triggers	Advanced SELECT statements with single row queries, group by and having clause	Outstanding 70+

MARKING SCHEME

- <40% (FAIL): POOR ANALYSIS AND DESIGN CONDUCTED AND REPRESENTED IN THE SUMMARY REPORT. VERY FEW ENTITIES IDENTIFIED WITH LIMITED RELATIONSHIPS ESTABLISHED. WEAK BUSINESS DESCRIPTION WITH FEW BUSINESS RULES IDENTIFIED. IMPLEMENTATION OF TABLES AND RELATIONSHIPS BUT WITH ERRORS.
- 40 - 50%: SUMMARY REPORT CONTAINS ADEQUATE DETAILS ON ANALYSIS AND DESIGN OF THE RELATIONAL DATABASE. SUFFICIENT ENTITIES, ATTRIBUTES AND RELATIONSHIPS IDENTIFIED AND MODELLED. MAJORITY OF RELATIONS NORMALISED TO 3NF. STUDENTS HAVE IMPLEMENTED ALL ENTITIES AND RELATIONSHIPS. SQL QUERIES ARE BASIC AND LIMITED IN BUSINESS USE.
- 50-69%: SUMMARY REPORT WELL WRITTEN WITH DETAILS ON EACH STAGE OF THE PROCESS. GOOD ANALYSIS AND DESIGN CONDUCTED AND DOCUMENTED WITH GOOD QUALITY EER DIAGRAM. BUSINESS RULES WELL DOCUMENTED. IMPLEMENTATION OF ALL ENTITIES AND RELATIONSHIPS WITH CONSTRAINTS AND GOOD QUALITY SAMPLE DATA INSERTED TO ALL TABLES. SQL QUERIES USING MULTI ROW FUNCTIONS APPROPRIATE FOR THE BUSINESS.
- 70% OR MORE: SUMMARY REPORT VERY WELL WRITTEN WITH ADDITIONAL MATERIAL INCLUDED AND RESEARCH CONDUCTED. STUDENTS HAVE DEMONSTRATED ALL THE ABOVE TO A HIGH LEVEL OF PROFICIENCY (E.G., ANALYSIS, DESIGN AND IMPLEMENTATION). IN ADDITION THE STUDENT HAS DEMONSTRATED INDEPENDENT LEARNING BY ADDING SOME FUNCTIONALITIES THAT HAVE NOT BEEN COVERED DURING THE CLASSES OR LABS