

Pearson **Higher Nationals in** **Computing**

Unit 4: Database Design & Development

Assignment Brief
Number: 1



Higher National Certificate/Diploma in Computing

Assignment Brief

Student Name/ID Number	
Unit Number and Title	4: Database Design & Development
Academic Year	
Unit Tutor	
Assignment Title	Database Design & Development
Issue Date	
Submission Date	
IV Name & Date	

Submission Format

Part 1: The submission is in the form of an individual written report. This should be written in a concise, formal business style using single spacing and font size 12. You are required to make use of headings, paragraphs and subsections as appropriate, and all work must be supported with research and referenced using the Harvard referencing system. Please also provide a bibliography using the Harvard referencing system. The recommended word limit is 2,000–2,500 words, although you will not be penalised for exceeding the total word limit.

Part 2: The submission is in the form of a fully functional relational database system demonstrated to the Tutor; and an individual written report and PowerPoint presentation.

Part 3: The submission is in the form of a witness statement of the testing completed by the Tutor; technical documentation; and a written report.

Unit Learning Outcomes

- LO1 Use an appropriate design tool to design a relational database system for a substantial problem.
- LO2 Develop a fully functional relational database system, based on an existing system design.
- LO3 Test the system against user and system requirements.
- LO4 Produce technical and user documentation.

Assignment Brief and Guidance

Assignment brief

Trinity Music School is a privately run music school based in Colombo. They want you to supply them with a database to keep records of their classes, and the teachers teach on these classes, which students are in each class and what instruments need to be rented for the class.

Musical instruments are supplied to each class so that students do not have to buy their own. A class will rent a number of musical instruments of the same type. Each type of musical instrument is supplied by one company. The rental for each type of musical instrument is for a particular number of those instruments for a particular period.

Each class has number of students. A student may be in more than one class. Students are classified by type as Full_Time, Part_Time or Part_Time_Evening.

A teacher may teach in more than one class, and a class may have more than one teacher.

Below are the samples of the paper records currently kept by **Trinity Music School**.

Class Records

- Class Code
- Instrument Taught
- Teachers
- No of instrument rented
- Start date/End Date/Timing

Instrument Type Records

- Instrument Type Code
- Instrument Name
- Supplier Company
- Contact No

Student and their Class Records

- Student Name
- Student Type
- Class Attended

Part 1

The trinity music school requesting to develop computerized system to handle the institutional records. They requesting to develop relevant small system to maintain their records.

You are working as Database Designer for the XYZ Company. Your Manager has asked you to produce a report based on the given following instructions

1. The design of the relational database system using appropriate design tools and techniques. It should contain at least four interrelated tables. Need to draw relevant diagrams (ERD, Use case diagram, Data Flow Diagram...)
2. Clear information about users of the system and system requirements.
3. Data Normalization up to third normal form
4. Interface Designs , Dialog Designs and Message Designs and output designs for fully functional System

Your manager would like a separate report on your assessment of the effectiveness of the design in relation to user and system requirements.

Part 2

Once the designs have been accepted by your manager you have been asked to develop fully functional database system. He ask you to provide another report including the followings.

- Evidence for the user Interfaces, output and data validations
- Create tables using SQL Commands
- Provide the following Queries from the database systems
 1. Student details with No of student registration for given month
 2. Total Income received for a given month form the student
 3. Student details with their playing instruments
 4. Filter the student's records based on the registration date
 5. Show only the Part time classes

Create a 10 min PowerPoint presentation to Evaluating the effectiveness of the database solution in relation to user and system requirements, and suggest improvements.

Part 3

Once the system has been developed your manager ask you to produce a test report according to the following instructions.

- Produce the test plan and test case according to the expected result and actual result
- Use sample test data
- Testing against the user and system requirements

You should explain the how the sample test data items are effective in testing

Finally your manager instruct you to produce the following documentations which will be given to the Trinity Music School.

- Technical Documentation
- User Documentation

The documentation should be easy to understand and graphical representation in relevant places are highly recommended.

User Documentation need to include the diagrams to show data movements and the dataflow.

Learning Outcomes and Assessment Criteria		
Pass	Merit	Distinction
LO1 Use an appropriate design tool to design a relational database system for a substantial problem		
P1 Design a relational database system using appropriate design tools and techniques, containing at least four interrelated tables, with clear statements of user and system requirements.	M1 Produce a comprehensive design for a fully functional system which includes interface and output designs, data validations and data normalisation.	D1 Assess the effectiveness of the design in relation to user and system requirements.

LO2 Develop a fully functional relational database system, based on an existing system design		LO2 & 3 D2 Evaluate the effectiveness of the database solution in relation to user and system requirements, and suggest improvements.
P2 Develop the database system with evidence of user interface, output and data validations, and querying across multiple tables.	M2 Implement a fully functional database system which includes system security and database maintenance.	
P3 Implement a query language into the relational database system.	M3 Assess whether meaningful data has been extracted through the use of query tools to produce appropriate management information.	
LO3 Test the systems against user and system requirements		
P4 Test the system against user and system requirements.	M4 Assess the effectiveness of the testing, including an explanation of the choice of test data used.	
LO4 Produce technical and user documentation		
P5 Produce technical and user documentation.	M5 Produce technical and user documentation for a fully functional system, including diagrams showing movement of data through the system, and flowcharts describing how the system works.	D3 Assess any future improvements that may be required to ensure the continued effectiveness of the database system.