Cambridge International Diploma in ICT
Advanced Level

Scheme of Work

5205
Relational Databases
Optional Module

UNIVERSITY *of* CAMBRIDGE
International Examinations

Introduction

This optional module is about creating a number of tables in a database and establishing relationships between them. Extracting data from these tables and presenting it as clear, attractive reports.

What is assessed in this module?

- data import
- specify field names, types and sizes
- import data into database tables
- save files replacing or creating new as specified
- selecting records using one criterion, multiple criteria; and/or
- sort data on single field and multiple fields
- link tables - create one to many, and one to one relationships
- produce reports on selected fields and grouped data
- summarise data using cross tabs (pivot tables)
- save and print data as specified

Tutor Preparation Required to Deliver this Module

You will need:

- files on disk for the student to use - at least three tables of information with common fields
- documentation showing what the students have to do
- source data from which the students will extract data

Underpinning Knowledge

- reasons for forming relationships between different database tables
- the purpose of using a primary key, and how it relates to the foreign key

General Principles and Procedures

You should prepare your notes for this session to include details of the different types of database relationships e.g. one to many, one to one, and their uses to minimise repetition.

Scheme of Work

Assessment Objectives	Performance Criteria	Classroom Ideas	Resources	Notes
Relational Databases				
Session Plan One				
• create a new database file • import data into a database table using a common interchange format • define field names, types and sizes for the table • sort records • save data • print data from tables	1.1.1 1.2.1 1.2.2 1.3.1 3.2.1 3.2.2 4.1.1 4.1.2 4.1.3 5.1.1	• input specified data into a spreadsheet, and save as CSV file • import the CSV file into a new blank database • format the table as specified • sort records	• provide data to be entered into a spreadsheet • provide instructions on how to save the data as a CSV file, and import it into a table in a blank database • include details of field names, field types and sizes to be used • give details of sorting to be used • instructions for printing data • instructions for saving data	• explain the main features of a database, ie records, fields, data types, queries and reports • provide a design for a simple database • demonstrate how data can be manipulated within a database, and extracted to create reports • demonstrate methods available for printing data from tables

Assessment Objectives	Performance Criteria	Classroom Ideas	Resources	Notes
Session Plan Two				
• extract simple lists using queries • create reports with grouped data • create summary reports • save data • print data	4.1.1 4.1.2 4.1.3 4.2.1 5.1.1	• use queries to extract data • produce reports, grouping data as specified • print the data • save data	• use the database from session plan one • give details of selection criteria to be used • instructions for format of reports • instructions for printing data • instructions for saving data	• describe different methods available for printing data i.e. tables, queries, reports, relationships, screen shots • demonstrate how data can be extracted to create reports • describe different ways of summarising data, i.e. Pivot table, count, sum, average, first
Session Plan Three				
• create a new database file • define field names, types and sizes for the table • extract and sort information • create queries • create reports • save data • print data	1.1.1 1.2.1 1.2.2 3.1.1 3.1.2 3.2.1 3.2.2 4.1.1 4.1.2 4.1.3 4.2.1 5.1.1	• use exercise 1	• exercise 1 documentation • provide details of sorting required • provide various queries using one criterion and multiple criteria • instructions for the creation of reports using the tables and selecting specific fields only, grouping or summarising the data	• student to enter data as shown in the documentation • demonstrate the problems associated with a flat file database, and how they can be overcome by using a relational database.

Assessment Objectives	Performance Criteria	Classroom Ideas	Resources	Notes
Session Plan Four				
• create a new database file • define field names, types and sizes for two tables • extract and sort information • create queries • create reports • save data • print data	1.1.1 1.2.1 2.1.1 2.1.2 3.1.1 3.1.2 3.2.1 3.2.2 4.1.1 4.1.2 4.1.3 4.2.1 5.1.1	• use exercise 2	• exercise 2 documentation • provide details of sorting required • provide various queries using one criterion and multiple criteria • instructions for the creation of reports using the tables and selecting specific fields only, grouping or summarising the data	• explain the concept of primary and foreign keys, and relationships • demonstrate the method used to link tables by using relationships
Session Plan Five				
• undertake Relational Databases Specimen paper	all	• use for assessment of student	• specimen assignment	• provide required documentation and resources as required by the assignment
Session Plan Six				
		• debrief	• marked papers, for return to each student	
Session Plan Seven				
• undertake Relational Databases Assessment		• Relational Databases Assessment		