Level 3 Develop software using SQL (Structured Query Language) (7540-360)

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Systems and Principles
Assignment guide for Candidates
Assignment A

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Level 3 Develop software using SQL (Structured Query Language) (7540-360) Assignment A

Introduction – Information for Candidates

About this document

This assignment comprises all of the assessment for Level 3 Develop software using SQL (Structured Query Language) (7540-360).

Health and safety

You are asked to consider the importance of safe working practices at all times.

You are responsible for maintaining the safety of others as well as your own. Anyone behaving in an unsafe fashion will be stopped and a suitable warning given. You will **not** be allowed to continue with an assignment if you compromise any of the Health and Safety requirements. This may seem rather strict but, apart from the potentially unpleasant consequences, you must acquire the habits required for the workplace.

Time allowance

The recommended time allowance for this assignment is **4 hours**.

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Candidate instructions

Candidates are advised to read **all instructions** carefully before starting work and to check with your assessor, if necessary, to ensure that you have fully understood what is required.

Time allowance: 4 hours

Assignment set up: A scenario is provided in the form of requests for services required.

This assignment is made up of **one** task

- **Task A** - requires candidates to create and test scripts to fulfil the requirements specified.

Scenario

A company, Omega Systems, have their Head Office in America and operate other branches in several locations. You work as an IT Assistant accessing the company database, fulfilling requests for information and services from other departments or branches. Your job involves writing and testing SQL scripts to provide the information and services required.

The following requests have been received today, via e-mail, from the Accounting and Personnel Departments and the IT Manager.

	Accounting Department Requirements
Request 1	List the last name, first name and employee number of all programmers who were hired on or before 21 May 1991 sorted in ascending order of last name.
Request 2	List the department number, last name and salary of all employees who were hired between 16/09/87 and 12/05/96 sorted in ascending order of last name within department number.
Request 3	List all the data for all jobs where the maximum salary is greater than 15000 sorted in descending order of the maximum salary.
Request 4	List the last name, first name, job id and commission of employees who earn commission sorted in ascending order of first name within last name.
Request 5	Which jobs are found in the IT and Sales departments?
Request 6	List the last name of all employees in departments 50 and 90 together with their monthly salaries (rounded to 2 decimal places), sorted in ascending order of last name.
Request 7	Show the total salaries figure for one month displayed with no decimal places.

	Personnel Department Requirements
Request 8	Show the total number of employees.
Request 9	List the department number, department name and the number of employees for each department that has more than 2 employees grouping by department number and department name.
Request 10	List the department number, department name and the number of employees for the department that has the highest number of employees using appropriate grouping.
Request 11	List the department number and name for all departments where no programmers work.
Request 12	Add the following new job IT_ANAL, System Analyst, 10000, 15000
Request 13	Update all the maximum salaries for jobs with an increase of 1000.
Request 14	List all the data for jobs sorted in ascending order of job id.
Request 15	a) The job history for employee number 102 is no longer required. Delete this record. b) List all the data for job history sorted in ascending order of employee number.
Request 16	Produce a list of employees showing percentage raises, employee numbers and old and new salaries. Employees in departments 20 and 10 are given a 5% rise, employees in departments 50, 80, 90 and 110 are given a 10% rise and employees in other departments are not given a rise.

	IT Manager Requirements
Request 17	Create a new view for manager's details only using all the fields from the employee table. Apply a CHECK constraint.
Request 18	Show all the fields and all the managers using the view for managers sorted in ascending order of employee number.
Request 19	Grant the authority to all other users to access the view for managers for SELECT statements only.
Request 20	Create an index named LOC_POSTAL_CODE on the Postal Code in the locations table. Provide a printout showing that the index has been created.

Task A

In this task you are required to plan testing and write and test scripts to fulfil the requirements specified by the Accounting Department, Personnel Department and the IT Manager.

1 Prepare a test plan to carry out the testing of the SQL scripts.

2 Prepare the test scripts to be used with the test plan.

3 Use the test plan and test scripts to carry out the tests and record results of testing in a test log comparing the expected results to the actual results. The test scripts must be saved with an appropriate name eg Request1.

4 Provide evidence of testing i.e. printout of script file and output which must be cross-referenced to the correct test number.

Note

- Candidates should produce the following for their Assessor:
  - Test plan.
  - Test data (scripts).
  - Test log.
  - Cross-referenced evidence of testing i.e. printout of script file and test output to show test results.
- At the conclusion of this assignment, hand all paperwork to the test supervisor.
- Ensure that your name is on all documentation.
- If the assignment is taken over more than one period, all paperwork must be returned to the test supervisor at the end of each sitting.

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