Level 3 Develop software using SQL (Structured Query Language) (7266/7267-310)

e-Quals
Assignment guide for Candidates
Assignment D
About City & Guilds
City & Guilds is the UK’s leading provider of vocational qualifications, offering over 500 awards across a wide range of industries, and progressing from entry level to the highest levels of professional achievement. With over 8500 centres in 100 countries, City & Guilds is recognised by employers worldwide for providing qualifications that offer proof of the skills they need to get the job done.

City & Guilds Group
The City & Guilds Group includes City & Guilds, ILM (the Institute of Leadership & Management) which provides management qualifications, learning materials and membership services, NPTC which offers land-based qualifications and membership services, and HAB (the Hospitality Awarding Body). City & Guilds also manages the Engineering Council Examinations on behalf of the Engineering Council.

Equal opportunities
City & Guilds fully supports the principle of equal opportunities and we are committed to satisfying this principle in all our activities and published material. A copy of our equal opportunities policy statement is available on the City & Guilds website.

Copyright
The content of this document is, unless otherwise indicated, © The City and Guilds of London Institute 2007 and may not be copied, reproduced or distributed without prior written consent.

However, approved City & Guilds centres and learners studying for City & Guilds qualifications may photocopy this document free of charge and/or include a locked PDF version of it on centre intranets on the following conditions:

- centre staff may copy the material only for the purpose of teaching learners working towards a City & Guilds qualification, or for internal administration purposes
- learners may copy the material only for their own use when working towards a City & Guilds qualification

The Standard Copying Conditions on the City & Guilds website also apply.

Please note: National Occupational Standards are not © The City and Guilds of London Institute. Please check the conditions upon which they may be copied with the relevant Sector Skills Council.

Publications
City & Guilds publications are available on the City & Guilds website or from our Publications Sales department at the address below or by telephoning +44 (0)20 7294 2850 or faxing +44 (0)20 7294 3387.

Every effort has been made to ensure that the information contained in this publication is true and correct at the time of going to press. However, City & Guilds’ products and services are subject to continuous development and improvement and the right is reserved to change products and services from time to time. City & Guilds cannot accept liability for loss or damage arising from the use of information in this publication.

City & Guilds
1 Giltspur Street
London EC1A 9DD
T +44 (0)20 7294 2800
F +44 (0)20 7294 2400

www.cityandguilds.com
learnersupport@cityandguilds.com
About this document
This assignment comprises all of the assessment for Level 3 Develop software using SQL (Structured Query Language) (7266/7267-310).

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.
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 **three** tasks

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

**Scenario**

A company, SimTech Computing, have their Head Office in America and operate other branches in several locations. You work as an IT Database 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 and fax, from Finance, Human Resources and the Database Administrator.

<table>
<thead>
<tr>
<th>Finance Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Request 1 List the last name, first name and employee number of all employees that have a last name starting with S.</td>
</tr>
<tr>
<td>Request 2 List the last name, first name and employee number of all stock clerks who were hired on or before 26 Aug 1998 sorted in ascending order of last name.</td>
</tr>
<tr>
<td>Request 3 List the department number, last name and salary of all employees who were hired between 15/11/98 and 07/12/99 sorted in ascending order of last name within department number.</td>
</tr>
<tr>
<td>Request 4 List the last name, job and commission percentage of employees where the commission percentage is less than or equal 15% sorted in descending order of commission percentage.</td>
</tr>
<tr>
<td>Request 5 Which jobs are found in the Administration and Human Resources departments?</td>
</tr>
<tr>
<td>Request 6 List the last name of all employees in the Marketing and Sales departments together with their monthly salaries (rounded to 2 decimal places), sorted in ascending order of last name.</td>
</tr>
<tr>
<td>Request 7 Show the average salaries figure for one month displayed with no decimal places.</td>
</tr>
</tbody>
</table>
### Human Resources Requirements

<table>
<thead>
<tr>
<th>Request</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>Show the total number of employees in the Finance department.</td>
</tr>
<tr>
<td>9</td>
<td>List the last name, first name, hire date and salary of all employees in the UK sorted in ascending order of last name.</td>
</tr>
<tr>
<td>10</td>
<td>List the department number, and the highest salary of the department with the highest average salary.</td>
</tr>
<tr>
<td>11</td>
<td>List the department number and name for all departments where no marketing representatives work.</td>
</tr>
<tr>
<td>12</td>
<td>Add the following new job SA_CLERK, Sales Clerk, 9000, 12000</td>
</tr>
<tr>
<td>13</td>
<td>Update all the maximum salaries for jobs with an increase of 2000.</td>
</tr>
<tr>
<td>14</td>
<td>List all the data for jobs sorted in ascending order of maximum salary.</td>
</tr>
<tr>
<td>15</td>
<td>Produce a list of employees showing percentage raises, employee numbers and old and new salaries. Employees in departments 80 and 90 are given a 6% rise, employees in departments 20 and 190 are given a 12% rise and employees in other departments are not given a rise.</td>
</tr>
</tbody>
</table>

### Database Administrator Requirements

<table>
<thead>
<tr>
<th>Request</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>The database administrator has found the following entity-relationship diagram. He thinks that the diagram is incorrect. Check the diagram and draw a corrected diagram.</td>
</tr>
<tr>
<td>17</td>
<td>Create a new view for manager’s details only using all the fields from the employee table. Show all the fields and all the managers using the view for managers.</td>
</tr>
</tbody>
</table>
| 18      | a) Drop the manager’s view.  
           b) Recreate the manager’s view so that the salary field is no longer included.  
           c) Use the ALTER statement to compile the manager’s view. |
| 19      | Show all the fields and all the managers using the view for managers. |
| 20      | Print a copy of the data dictionary entry for the table employees |
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 as necessary 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.
6 Level 3 Assignment D Version 2.0 Develop software using SQL (Structured Query Language) (7266/7267-310)