Higher Computing Science

Database Design: Data Dictionary

Exercise 5– Answers

Task 1
A presence check has been used for all mandatory fields marked * (Email, Password, Title, First Name, Last Name, Date of Birth and Contact Number). The presence check will be used to ensure that a value is entered for each of these fields. If of these fields is left blank, the user will receive an error message.

A restricted choice has been used for the Title and Date of Birth fields. Use of a restricted choice will eliminate date entry errors since inly valid options are presented to the user.

Task 2
A presence check has been used. This is used to ensure that search criteria are entered and has not been left blank.

Task 3
A range check has been applied. This ensures that the quantity entered by the user is between 2 and 20 inclusive. If any other values are entered, the user will receive an error message.

Task 4
A length check has been used to ensure that the SCN entered has exactly 9 digits. If the user enters a candidate number with fewer (or more) than 9 digits, they will receive an error message.

A presence check has been used for all mandatory fields marked * (SCN, Date of Birth, Surname, Postcode or Country, Email address, Re-type email address, Terms and conditions). The presence check will be used to ensure that a value is entered for each of these fields. If of these fields is left blank, the user will receive an error message.

A restricted choice is used for the Country field. This will display a list of possible countries and the user simply selects the one country that applies. Use of a restricted choice will eliminate date entry errors since inly valid options are presented to the user.

Task 5
A range check has been applied. This ensures that the estimate grade entered by schools is between 1 and 9 inclusive. If any other values are entered, the user will receive an error message.

Task 6
The Result table has 3 foreign keys, SCN and QualCode. To ensure that referential integrity is met, all values entered into a foreign key must already exist in the matching primary keys. In this case, an SCN must already exist in the Candidate table before it can be entered in the Result table. Also, a QualCode must already exist in the Qualification table before it can be entered in the Result table.

Task 7
The memberID attribute of the Rental table is a foreign key used to link the Member and Rental tables. Before a value can be entered in this field, a matching record must already exist in the Member table. By setting referential integrity, the developer ensures that only known and existing members can make rentals.

Task 8
The albumID attribute of the Photo table is a foreign key used to link the Album and Photo tables. Before a value can be entered in this foreign key, a matching record must already exist in the Album table. By setting referential integrity, the developer ensures that photos can only be stored in albums that have already been created.

Task 9
The Purchase table include the attribute customerID which is the foreign key used to link the Purchase and Customer tables. Before details of a purchase can be recorded, a matching record must already exist in the Customer table. The use of referential integrity ensures that only registered customers can make purchase.