Paper Reference(s)

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London Examinations GCE

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Ordinary Level

Advanced Notice of Case Study for Paper 1

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Mr. Raymond is the senior music teacher at Bankside College. He has a large collection of printed sheet music that he keeps in his office. Some of the music is in books and some of it is on loose pages. The music is written for several different instruments and sometimes has words with it. Mr Raymond uses the music in his lessons and for school concerts.

Until recently, Mr. Raymond stored the music in piles of paper and books on his table, on his piano, on the spare chairs, and increasingly, on the floor. It sometimes took an hour or more for him to find the same piece of music for several different instruments.

The storage system is being improved. Mr. Raymond now has shelves that cover one wall of his office. The music has been placed in piles on the shelves and one of his students, Hilary, who is also studying O Level Computing, has agreed to make an index of the music and use it for her O Level project.

Hilary started by interviewing Mr. Raymond to find out his requirements. These were that he wanted the system to be easy to use and that he needed to be able to find music:

- by title
- by genre (classical, jazz, film/TV soundtrack, folk, pop, stage show, traditional, other)
- by instrument (clarinet, electronic keyboard, flute, guitar, piano, recorder, trumpet, viola, violin, xylophone)
- with or without words

Hilary thought that a good solution would be to arrange the music on the shelves in title order and then make a database to hold information about each piece of music.

Hilary started by designing a simple single-table database but decided that it would not work because many of the titles were duplicated several times. She then tried a two-table database.

MUSIC (title, ID)
DETAILS (ID, music book, genre, instrument, words)

Hilary wanted to use the ISBN of each music book for the ID. Unfortunately the loose pages of music did not have an ISBN so she had to invent her own ID system.

There was another problem because some music was suitable for more than one instrument and could fit into more than one genre.

Hilary designed three solutions to this problem.

Solution 1. Using the two-table database, create the genre and instrument fields as Memo fields that can each hold 100 characters of text. This would allow all the relevant genres and instruments to be listed.

Solution 2. Using the two-table database, create a separate field for each genre and instrument.

Solution 3. Create a four-table database:
MUSIC (title, music book, ID)
WORDS (ID, words)
GENRE (ID, classical, jazz, film / TV soundtrack, folk, pop, stage show, traditional, other)
INSTRUMENT (ID, clarinet, electronic keyboard, flute, guitar, piano, recorder, trumpet, viola, violin, xylophone)

Hilary completed the database and Mr. Raymond used it for a while. Mr. Raymond has a number of electronic documents that describe the lives and music of different composers. He asked Hilary if she could make two changes to the database, because he wanted to be able to:

- search for music by composer
- open the electronic documents from the database

Hilary made the first change but said that the second was too difficult for her and suggested opening a simple web site from the database instead.

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