5.3 Exercises for Section 5

Exercise 5.1: Suppose a record has the following fields in this order: A character string of length 15, an integer of 2 bytes, a SQL date, and a SQL time (no decimal point). How many bytes does the record take if:

a) Fields can start at any byte.

b) Fields must start at a byte that is a multiple of 4.

c) Fields must start at a byte that is a multiple of 8.

Exercise 5.2: Repeat Exercise 5.1 for the list of fields: a real of 8 bytes, a character string of length 17, a single byte, and a SQL date.

Exercise 5.3: Assume fields are as in Exercise 5.1, but records also have a record header consisting of two 4-byte pointers and a character. Calculate the record length for the three situations regarding field alignment (a) through (c) in Exercise 5.1.

Exercise 5.4: Repeat Exercise 5.2 if the records also include a header consisting of an 8-byte pointer, and ten 2-byte integers.