

2 A shop repairs electronic devices, for example mobile phones and tablet computers. The shop owner stores the data about the repairs using a file-based approach.

(a) Give **one** limitation of using a file-based approach to store the data **and** explain how a relational database addresses this limitation.

Limitation

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Explanation

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[3]

(ii) The table shows sample data for the table REPAIR_PART.

| PartID | RepairNumber | Quantity |
|------------|--------------|----------|
| ACD128SA | 0022 | 3 |
| PPOR543DWW | 0022 | 1 |
| TR453 | 0023 | 1 |
| PPOR543DWW | 0023 | 2 |
| WED5 | 0024 | 5 |

Write a Structured Query Language (SQL) script to define the table REPAIR_PART.

Include constraints (restrictions) on the data that can be entered into each field where appropriate.

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[5]

(iii) Suppliers send invoices to the company for the parts that are used. A new table, INVOICE, stores the data about each invoice and whether it has been paid or not.

The design for the table INVOICE is shown:

INVOICE(InvoiceID, SupplierID, AmountDue, Paid, DatePaid)

The table shows sample data for the table INVOICE.

| InvoiceID | SupplierID | AmountDue | Paid | DatePaid |
|-----------|------------|-----------|-------|------------|
| 000001 | JK675 | 22.50 | TRUE | 01/01/2024 |
| 000002 | WR443 | 358.99 | FALSE | |
| 000003 | JK675 | 10.21 | FALSE | |

Write an SQL script to return the total amount due to the supplier with the ID of JK675 for all the invoices that have **not** currently been paid.

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(c) Complete the table by writing a definition for each of the database terms.

| Term | Definition |
|-----------------------|----------------|
| Referential integrity | |
| Candidate key | |
| Tuple | |

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