

13. A garage offers vehicle services, maintenance, and MOTs. The management uses a relational database to store details of customers, vehicles, appointments and parts.

Sample data from the database tables is shown below.

| Customer |            |             |
|----------|------------|-------------|
| custID   | name       | telNo       |
| 0013     | K Amin     | 05767490813 |
| 0017     | J Atigah   | 05534384344 |
| 0024     | F Hunter   | 05848534323 |
| 0027     | H Moore    | 05583223411 |
| 0039     | L Fletcher | 05748339222 |
| ...      | ...        | ...         |

| Part   |                 |          |       |
|--------|-----------------|----------|-------|
| partID | partName        | quantity | price |
| P001   | Air filter      | 34       | 11.99 |
| P002   | Brake disc      | 21       | 61.99 |
| P003   | Brake pad       | 8        | 68.99 |
| P004   | Oil filter      | 43       | 20.99 |
| P005   | Shock absorbers | 13       | 95.99 |
| ...    | ...             | ...      | ...   |

| Vehicle  |        |          |         |      |
|----------|--------|----------|---------|------|
| regNo    | custID | make     | model   | year |
| HK69 TYR | 0013   | Ford     | Transit | 2019 |
| LR16 JRD | 0017   | Vauxhall | Mokka   | 2016 |
| SO70 KRF | 0013   | Kia      | Creed   | 2020 |
| GL65 ORJ | 0024   | Vauxhall | Adam    | 2015 |
| SC15 YHA | 0017   | Renault  | Clio    | 2015 |
| HR19 JWW | 0024   | Ford     | Focus   | 2019 |
| KK20 DRT | 0039   | Vauxhall | Mokka   | 2020 |
| ...      | ...    | ...      | ...     | ...  |

| Appointment |          |             |        |            |        |
|-------------|----------|-------------|--------|------------|--------|
| applID      | regNo    | description | partID | date       | cost   |
| AP011       | HK69 TYR | Service     | P001   | 24/03/2025 | 169.50 |
| AP015       | LR16 JRD | Maintenance | P002   | 29/03/2025 | 246.83 |
| AP021       | SO70 KRF | Service     | P004   | 30/03/2025 | 78.50  |
| AP020       | HR19 JWW | Service     | P001   | 30/03/2025 | 185.23 |
| AP023       | GL65 ORJ | MOT         |        | 01/04/2025 | 54.95  |
| AP025       | SC15 YHA | MOT         | P005   | 02/04/2025 | 233.74 |
| AP026       | KK20 DRT | Maintenance | P005   | 02/04/2025 | 210.00 |
| ...         | ...      | ...         | ...    | ...        | ...    |



\* X 8 1 6 7 6 0 1 2 2 \*

**13. (continued)**

- (a) The garage wants to use a query to invoice a customer for the work done on their vehicle.

Design a query to display the full name, vehicle registration number and the name of the part for customer 'L Fletcher'.

**2**

|                             |  |
|-----------------------------|--|
| Field(s) and calculation(s) |  |
| Table(s)                    |  |
| Search criteria             |  |
| Grouping                    |  |
| Sort order                  |  |

- (b) Write the SQL statement to display the total value of all parts in stock as shown below.

**2**

|                    |
|--------------------|
| <b>Total value</b> |
| 4411.81            |



## 13. (continued)

**MARKS**

DO NOT  
WRITE IN  
THIS  
MARGIN

- (c) The garage would like to display details of all appointments that cost more than the average appointment cost.
- (i) Write the SQL statement to display the average appointment cost, as shown below.

2

| Average cost |
|--------------|
| 168.39       |

- (ii) The query from part (i) is saved as 'avgCost'. Using this query, complete the SQL statement below to display details of all appointments that cost more than the average cost. The details should be displayed in the order shown below.

4

| regNo    | appID | make     | model   | year | cost   |
|----------|-------|----------|---------|------|--------|
| LR16 JRD | AP015 | Vauxhall | Mokka   | 2016 | 246.83 |
| SC15 YHA | AP025 | Renault  | Clio    | 2015 | 233.74 |
| KK20 DRT | AP026 | Vauxhall | Mokka   | 2020 | 210.00 |
| HR19 JWW | AP020 | Ford     | Focus   | 2019 | 185.23 |
| HK69 TYR | AP011 | Ford     | Transit | 2019 | 169.50 |

```
SELECT regNo, appID, make, model, year, cost
```





**MARKS**

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**13. (continued)**

- (d) At present only one part can be used in a single repair so the database design would require an additional entity called `PartsListing` to be added.

Complete the diagram below showing the cardinality between the `PartsListing` entity and the two existing entities.

**1**

