Task 2: database design and development (part A)

Gnome Sweet Gnome is a company that sells garden gnomes.

The owners want to create a relational database to store details of their customers, orders and garden gnomes. They have appointed a database developer to do this.

The developer asked employees about the features they would like in the completed database. The following is a summary of their responses.

I would like to view the details of the gnomes in order of popularity.

I want to see all orders including the date of the order.

I want to be able to produce a list of customers who have placed orders in a particular month.

I need to be able to find customer's details so that the company can contact them about special offers.

I would like to make changes to customer information.

I need to be able to view the total cost of each order.

I would like to give details of gnome names, descriptions and prices to the customers.

I would like to add new gnomes to the database as we get new stock.

2a A database needs to be created with four entities: Customer, CustOrder, GnomePurchase and Gnome.

Using the information gathered from the employees' comments, identify two additional functional requirements of the database.

(2 marks)

- Check your answers carefully, as you cannot return to part A after you hand it in.
- When you are ready, hand part A to your teacher or lecturer and collect part B.

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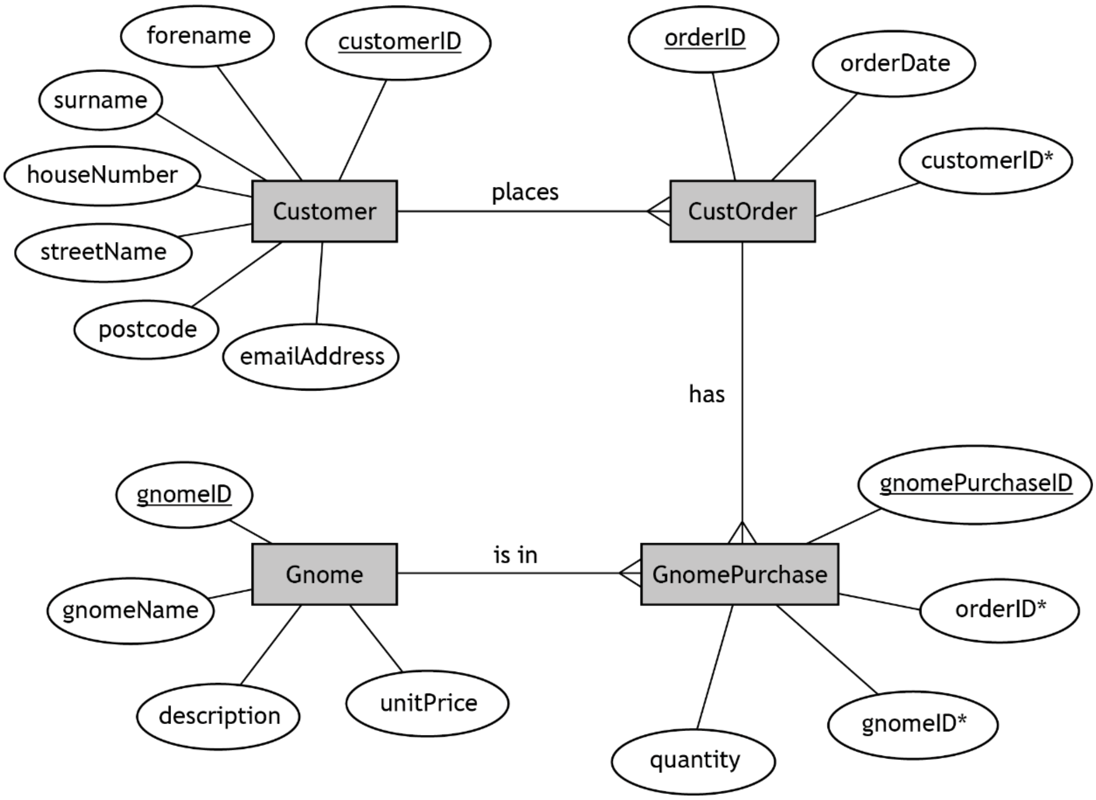
Task 2: database design and development (part B)

Following further analysis, the entity-relationship diagram below is created.



This design is then implemented.

Your teacher or lecturer will provide you with a completed database.
This is a relational database with the following tables.

gnomeSales database			
Customer	**CustOrder**	**GnomePurchase**	**Gnome**
customerID	orderID	gnomePurchaseID	gnomeID
forename	orderDate	orderID*	gnomeName
surname	customerID*	gnomeID*	description
houseNumber		quantity	unitPrice
streetName			
postcode			
emailAddress			

2b Gnome Sweet Gnome would like to produce a list showing the number sold for each gnome with the word ‘solar’ in the description.

Implement the SQL statement to produce the following output.

(5 marks)

gnomeName	Total gnomes sold
Coimin	21
Maximilian	19
Danny	15

Print evidence of the implemented SQL statement and the output produced.

2c A discount voucher will be sent to customers who bought three or more of the most expensive gnome available, in a single order.

Implement the SQL statement(s) to produce the output shown below.

(4 marks)

emailAddress	orderID	Quantity
melina.santiago@coolmail.com	ord0061	5
maha.weber@yeehaa.com	ord0097	4

Print evidence of the implemented SQL statement(s) and the output produced.

2d A query is designed to add 20% VAT to all orders. The query is tested using order ord0024. The expected output is shown below.

Note: the database environment you use might output the total as 248.4

forename	surname	Total to Pay (£)
Sandy	Kerr	248.40

The SQL statement shown below is implemented.

```
SELECT forename, surname, (quantity * unitPrice * 1.2) AS [Total to Pay £]
FROM Customer, Gnome, GnomePurchase, CustOrder
WHERE CustOrder.orderID="ord0024"
AND Customer.customerID=CustOrder.customerID
AND CustOrder.orderID=GnomePurchase.orderID
AND Gnome.gnomeID=GnomePurchase.gnomeID;
```

The query to test the above SQL statement is provided with the database. When run, the actual output does not match the expected output.

Amend the query to produce the expected output as shown above.

(2 marks)

Print evidence of the amended SQL query and the output produced.

2e A customer requests a copy of a previous order for an insurance claim.

Evaluate the accuracy of output when running a new query to produce a copy of the original order by:

(i) explaining why the copy of the order may not reflect the price paid at the time

(1 mark)

(ii) describing how the database could be amended to rectify this

(1 mark)

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