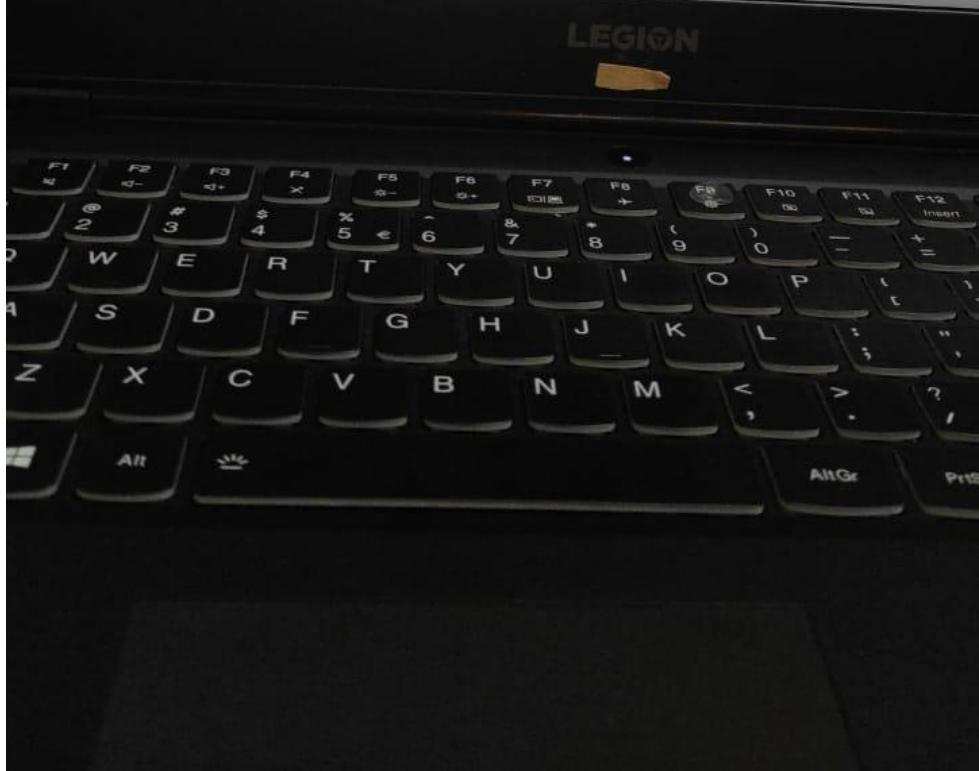


Write the table definition for the **Order** table in SQL, using appropriate Data types and necessary constraints as given in the description.

```

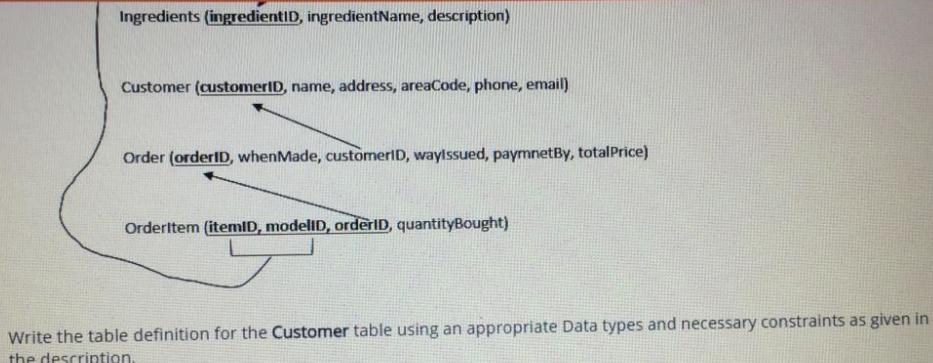
create table Order
(
    orderID char (6),
    whenMade varchar(50),
    customerID char(6),
    wayIssued varchar(50),
    paymentBy varchar(50),
    totalPrice float,
    constraints Order_Pk primary key(orderID),
);

```



Write the table definition for the **Order** table in SQL, using appropriate Data types and necessary constraints as given in the diagram.

```
CREATE TABLE Order
(
    orderID INT,
    whenMade DATE,
    customerID INT,
    wayIssued STRING CHECK (wayIssued = 'phone' OR wayIssued = 'email'),
    paymentBy STRING CHECK (paymentBy = 'credit card' OR paymentBy = 'cash'),
    totalPrice MONEY,
    CONSTRAINT Order_PK PRIMARY KEY(orderID),
    CONSTRAINT Order_FK FOREIGN KEY (customerID) REFERENCES Customer(CustomerID)
);
```



Write the table definition for the **Customer** table using an appropriate Data types and necessary constraints as given in the description.

```
|
```

Following description and the schema is about a company which sells food items online. Analyze them and answer the questions.

1. Table **Item** contains items available. Attribute **Description** describes the item. Attribute **Picture** contains an URL of a picture of the item.
2. Table **Ingredient** contains the materials used in an item.
3. Items may be sold in different size of portion. These sizes are defined in table **ItemType**. Each item has different model identifiers (ModelID). ModelID has values like 'BIG', 'SMALL', etc. The price of an item depends on the size.
4. Table **Contents** describes what ingredients comprise the item.
5. Table **Customer** contains customer data. Customers have numeric identifiers. Areacode indicates the area within the city. The format of Areacode has only 3 digits like A01, A02, B01, etc. Phone numbers and email-addresses are text fields. A customer must specify a phone number for contact.
6. Table **Order** contains information about the Orders. Orders have numeric identifiers. The time the order was made is recorded in column Whenmade. Column CustomerID contains the identifier of the customer that made the order. Attribute Wayofuse defines the media used in placing the order. It can be only through phone or email. PaymentBy defines how the order is to be paid or has been paid. Only credit card or cash method is allowed. TotalPrice determines the amount to be paid.
7. Table **ItemOrdered** defines what has been ordered. The attributes ItemID and ModelID identify the form of item ordered, and Quantity specifies the number of units ordered.

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Section 17
17 yet answered
Flag question

Apply your knowledge on Conceptual modelling and complete the sentence with the missing word.

1. A single entity can participate in a relationship with itself. It is named as a/an [] recursive relationship.
2. In a hospital database patients can be specialized into OPD patients and Ward patients using a/an [] relationship.
3. Employee Entity and Spouse Weak Entity in an HR database participates in a/an [] relationship.

Next page

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Apply your knowledge on Conceptual modelling and complete the sentence with the missing word.

1. A single entity can participate in a relationship with itself. It is named as a/an [] relationship.
2. In a hospital database patients can be specialized into OPD patients and Ward patients using a/an [] relationship.
3. Employee Entity and Spouse Weak Entity in an HR database participates in a/an [] relationship.

Moodle ← → × C | ① | A

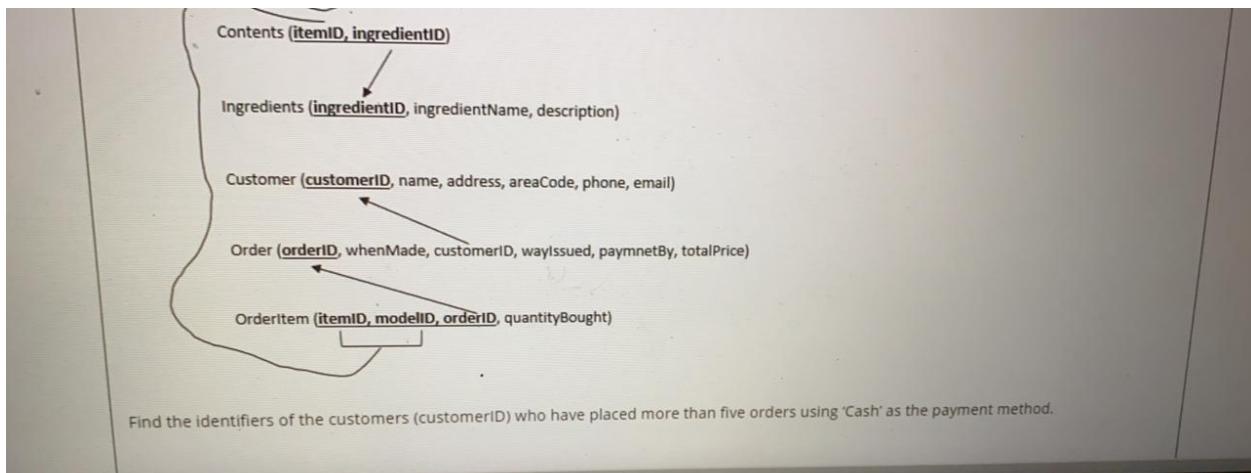
7. Table ITEMORDERED defines what has been ordered. The attributes itemID and modelID identify the form of item ordered, and quantity specifies the number of units ordered.

EXAM QUESTIONS - PART 2
18 19 20

EXAM CONCERNS
21

Write the table definition for the Customer table using an appropriate Data types and necessary constraints as given in the description.

FreeSync



Write the table definition for the **Order** table in SQL, using appropriate Data types and necessary constraints as given in the description.

```

CREATE TABLE Order
(
    orderID INTEGER PRIMARY KEY,
    whenMade VARCHAR(30) NOT NULL,
    customerID INTEGER,
    wayIssued VARCHAR(30) NOT NULL,
    paymentBy VARCHAR(30) NOT NULL,
    totalPrice VARCHAR(30) NOT NULL,
    CONSTRAINT oder_fk FOREIGN KEY(customerID) REFERENCES Customer(CustomerID)
)

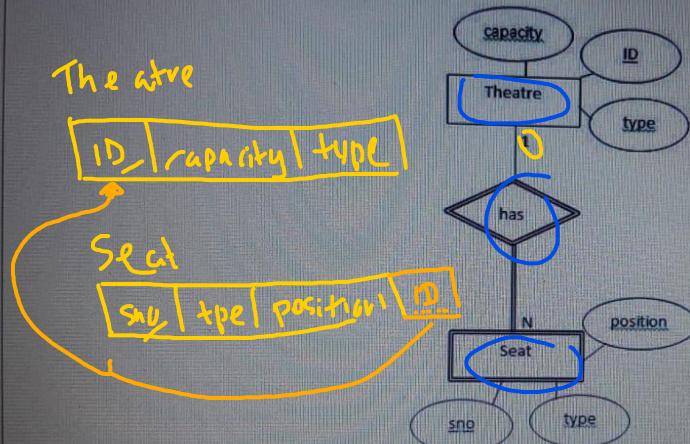
```

OrderItem (itemID, modelID, orderID, quantityBought)

Find the identifiers of the ingredients (ingredientID) which were used in more than 5 products. Order of the ingredientID.

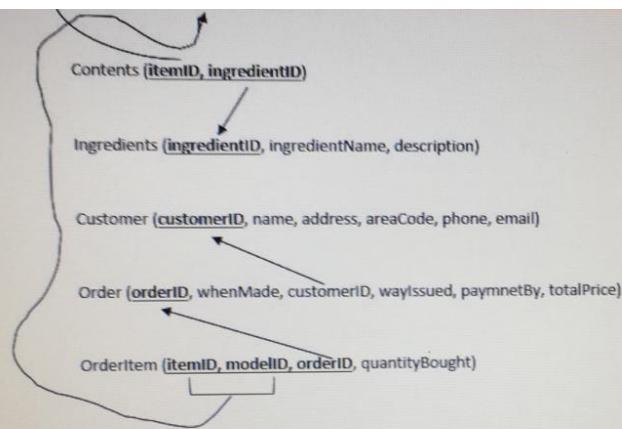
```
select c.ingredientID  
from contents c.orderitem ot  
where o.quantityBoughts>5  
order by ingredientID desc;
```

What is the primary key of 'Seat' relation after map the following ER model into the relational model?

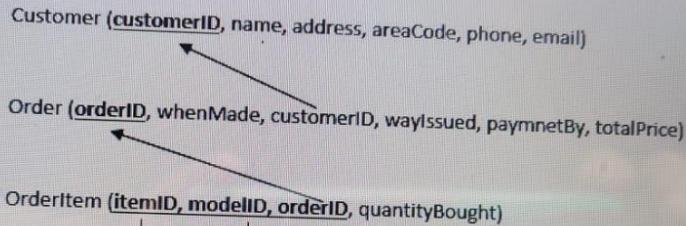
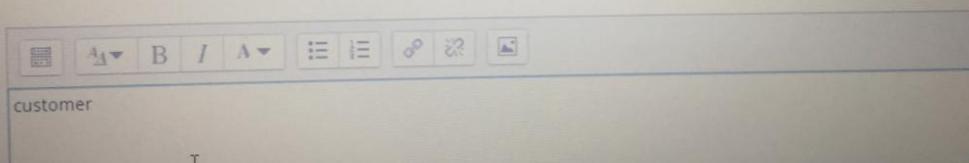


Select one:

- a. ID
- b. ID, sno
- c. ID, type
- d. sno



Write the table definition for the **Customer** table using appropriate Data types and necessary constraints as given in the description.



Write the table definition for the **Order** table in SQL, using appropriate Data types and necessary constraints as given in the description.



Moodle

```
graph TD; Contents[Contents (ItemID, ingredientID)] --> Ingredients[Ingredients (ingredientID, ingredientName, description)]; Customer[Customer (customerID, name, address, areaCode, phone, email)] --> Order[Order (orderID, whenMade, customerID, wayIssued, paymnetBy, totalPrice)]; Order --> OrderItem[OrderItem (itemID, modelID, orderID, quantityBought)]; OrderItem --> Contents; OrderItem --> Ingredients;
```

Consider the following query.
Find the names of the ingredients which are used to prepare the item with the name 'Popcorn Veggie'.
What are the tables needed to answer this query?

Select one or more:

- a. Customer
- b. Item
- c. Order
- d. itemType
- e. OrderItem
- f. Contents
- g. Ingredients

[Next page](#)

Moodle

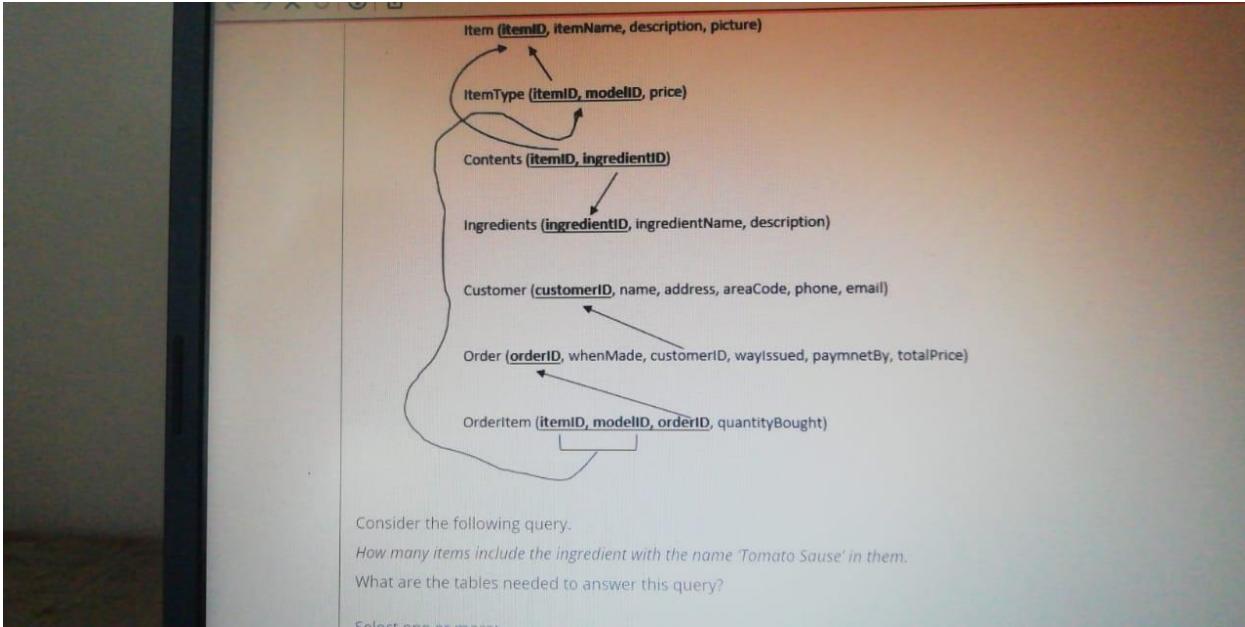
```
graph TD; Contents[Contents (ItemID, ingredientID)] --> Ingredients[Ingredients (ingredientID, ingredientName, description)]; Customer[Customer (customerID, name, address, areaCode, phone, email)] --> Order[Order (orderID, whenMade, customerID, wayIssued, paymnetBy, totalPrice)]; Order --> OrderItem[OrderItem (itemID, modelID, orderID, quantityBought)]; OrderItem --> Contents; OrderItem --> Ingredients;
```

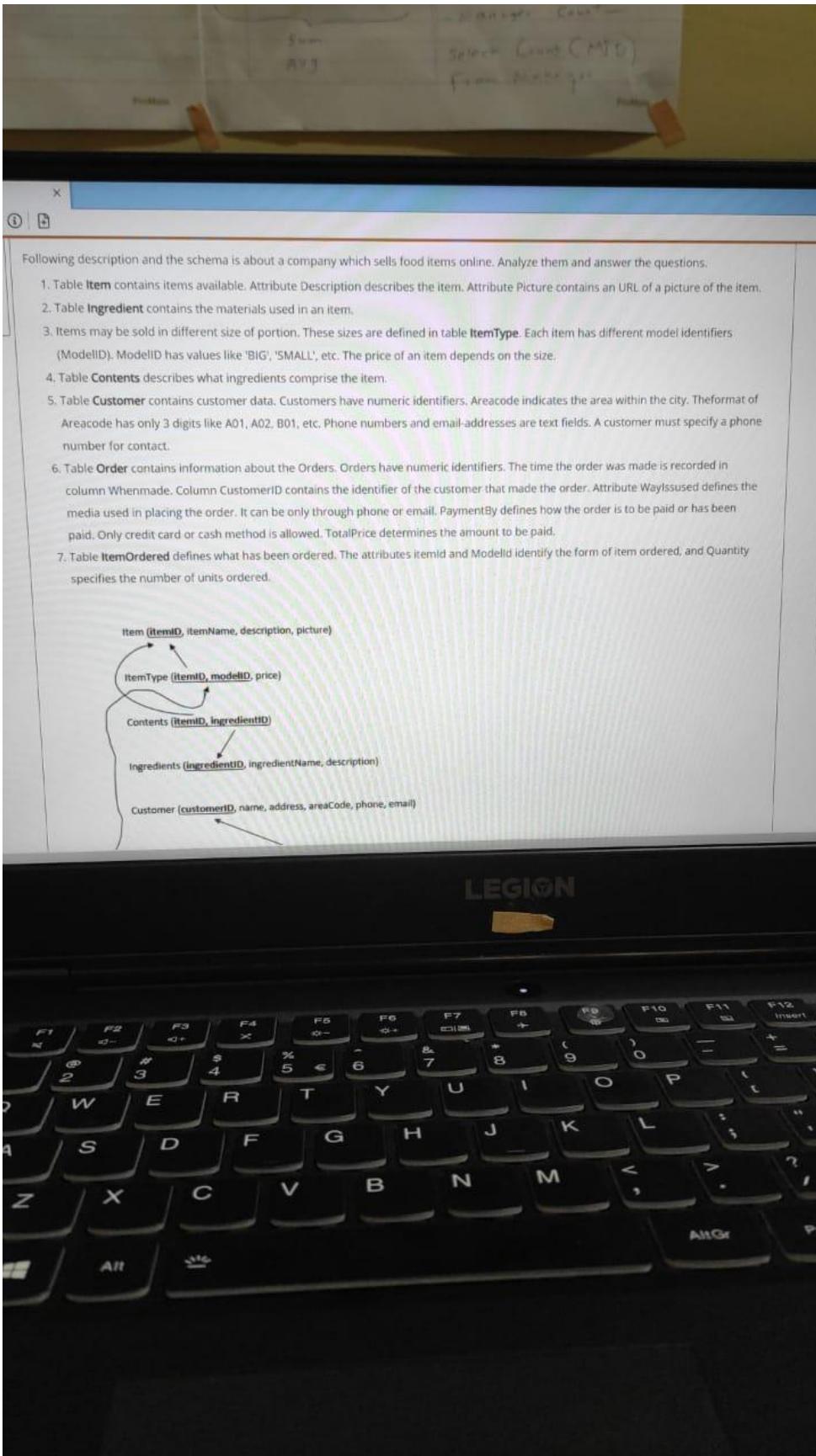
Consider the following query.
Find the names of the ingredients which are used to prepare the item with the name 'Popcorn Veggie'.
What are the tables needed to answer this query?

Select one or more:

- a. Customer
- b. Item
- c. Order
- d. itemType
- e. OrderItem
- f. Contents
- g. Ingredients

[Next page](#)



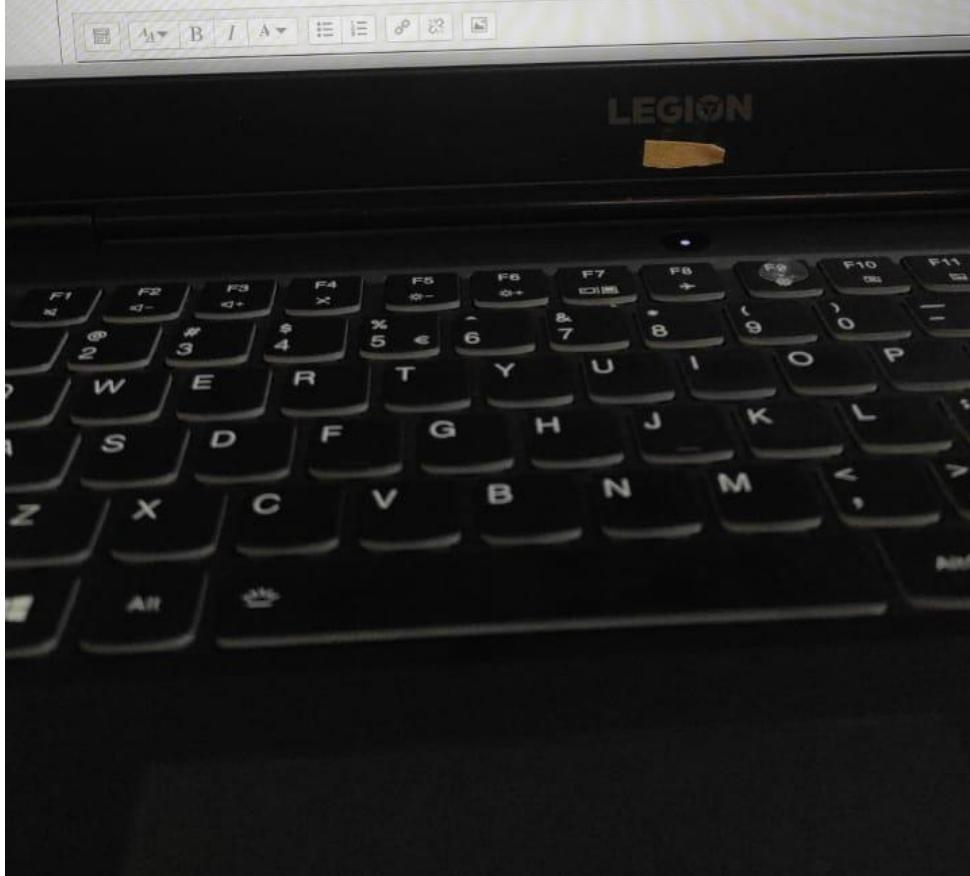


6. Table **Order** contains information about the Orders. Orders have numeric identifiers. The time the order was made is recorded in column Whenmade. Column CustomerID contains the identifier of the customer that made the order. Attribute WayIssued defines media used in placing the order. It can be only through phone or email. PaymentBy defines how the order is to be paid or has been paid. Only credit card or cash method is allowed. TotalPrice determines the amount to be paid.

7. Table **ItemOrdered** defines what has been ordered. The attributes itemID and ModelID identify the form of item ordered, and Quantity specifies the number of units ordered.

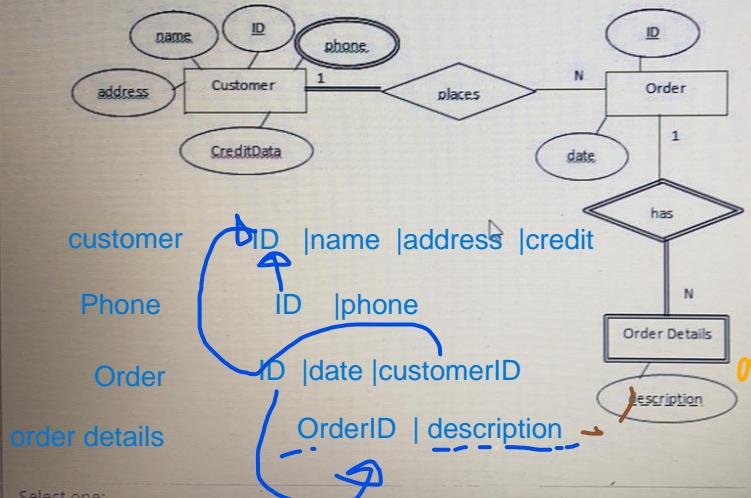


Find the identifiers of the customers (customerID) who have placed more than five orders using 'Cash' as the payment method.



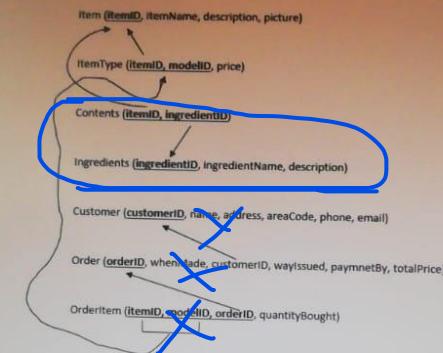
Question 16
Not answered
1 out of 1
Flag question

Select the correct answer after map the following ER model into the relational model.



Select one:

- a. Customer (ID, name, address, creditData)

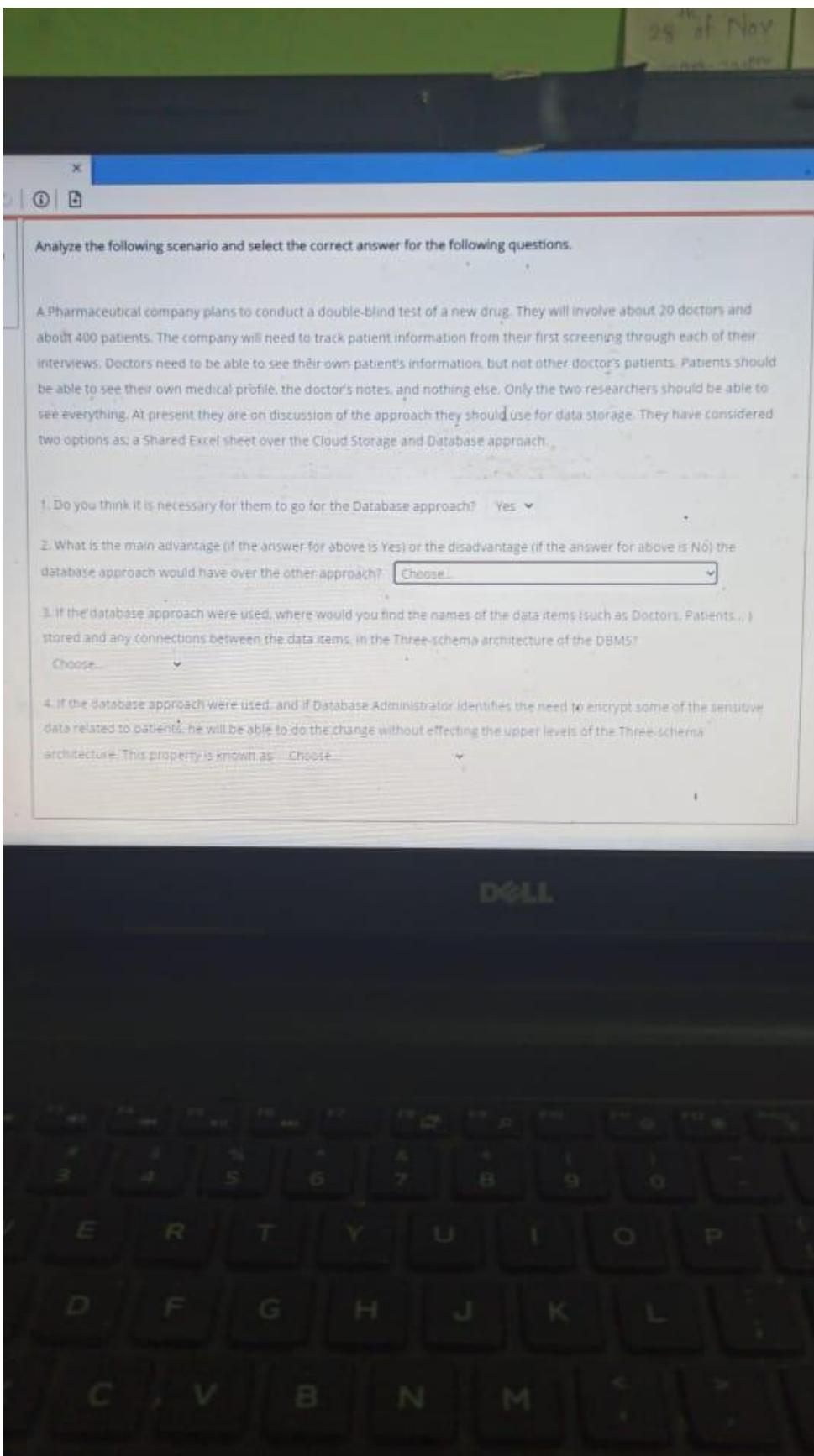


Consider the following query.

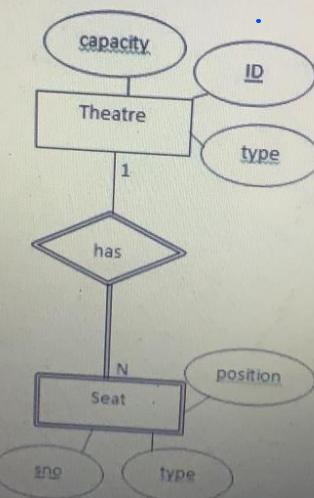
How many items include the ingredient with the name 'Tomato Sause' in them.
What are the tables needed to answer this query?

Select one or more:

- a. Item
 b. Order
 c. ItemType
 d. Contents
 e. Ingredients
 f. OrderItem



What is the primary key of 'Seat' relation after map the following ER model into the relational model?



Theatre | ID | type | capacity
seat sno | type | position | TID

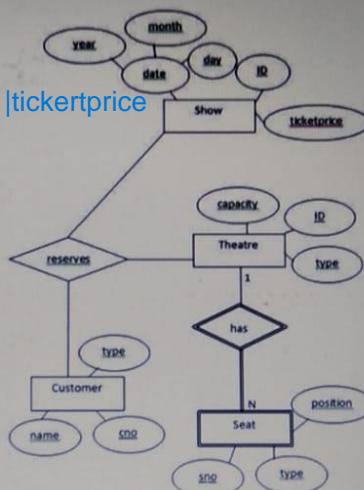
Select one:

- a. showtype
- b. sno

Marked out of 5.00

Flag question

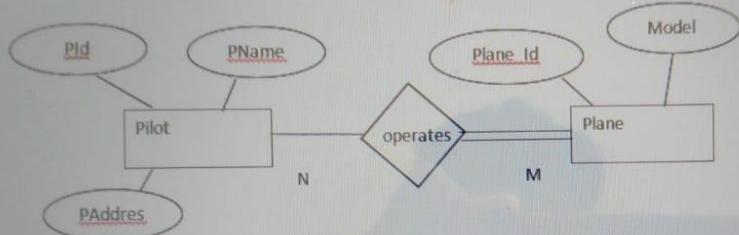
Show showID | year | month | day | ticketprice
Theatre ID | type | capacity
seat sno | type | position | TID
customer cno | type | name
reserve SID | TID | CID



Select one:

- a. Theater
- b. Theater, Seat
- c. Seat
- d. Reserves, Seat

Which of the following statement(s) is/are true about the given ER diagram?



Select one or more:

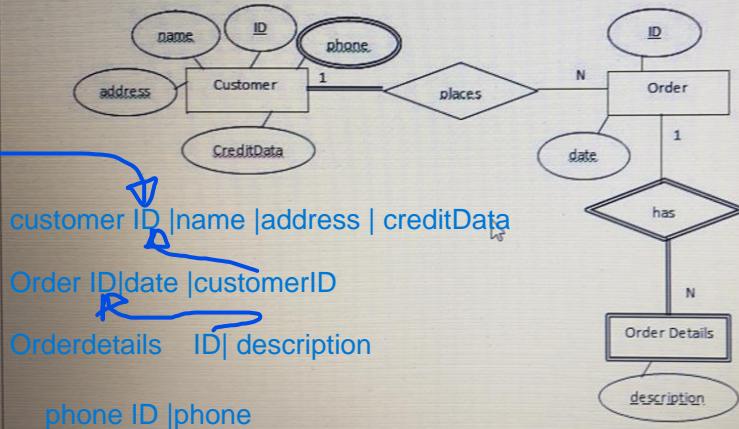
- a. A plane is operated by only one pilot
- b. There can be some pilots without operating any plane
- c. A pilot operates zero or more planes
- d. A plane is operated by one or more pilots
- e. Each pilot operates only one plane

Sri Lanka Institute of Information Technology

Question 16

Not answered
0 out of 1
Avg question

Select the correct answer after map the following ER model into the relational model.



Select one:

- a. Customer (ID, name, address, creditData)

Order (orderID, whenMade, customerID, wayIssued, paymentBy, totalPrice)

OrderItem (itemID, modelID, orderID, quantityBought)

Find the identifiers of the ingredients (ingredientID) which were used in more than 5 products. Sort the results according to the descending order of the ingredientID.

select

from content c ,order item o
where o.quantityBought >5 |

select i.ingreddeentID ,count(C.itemID)
from contents C,ingredients i
where c. ingreddeentID = i. ingreddeentID
order by i. ingreddeentID desc
having count(C.itemID)>5;

Moodle

Attribute WayIssued defines the media used in placing the order. It can be only through phone or email. PaymentBy defines how the order is to be paid or has been paid. Only credit card or cash method is allowed. TotalPrice determines the amount to be paid.

7. Table **ItemOrdered** defines what has been ordered. The attributes itemID and ModelID identify the form of item ordered, and Quantity specifies the number of units ordered.

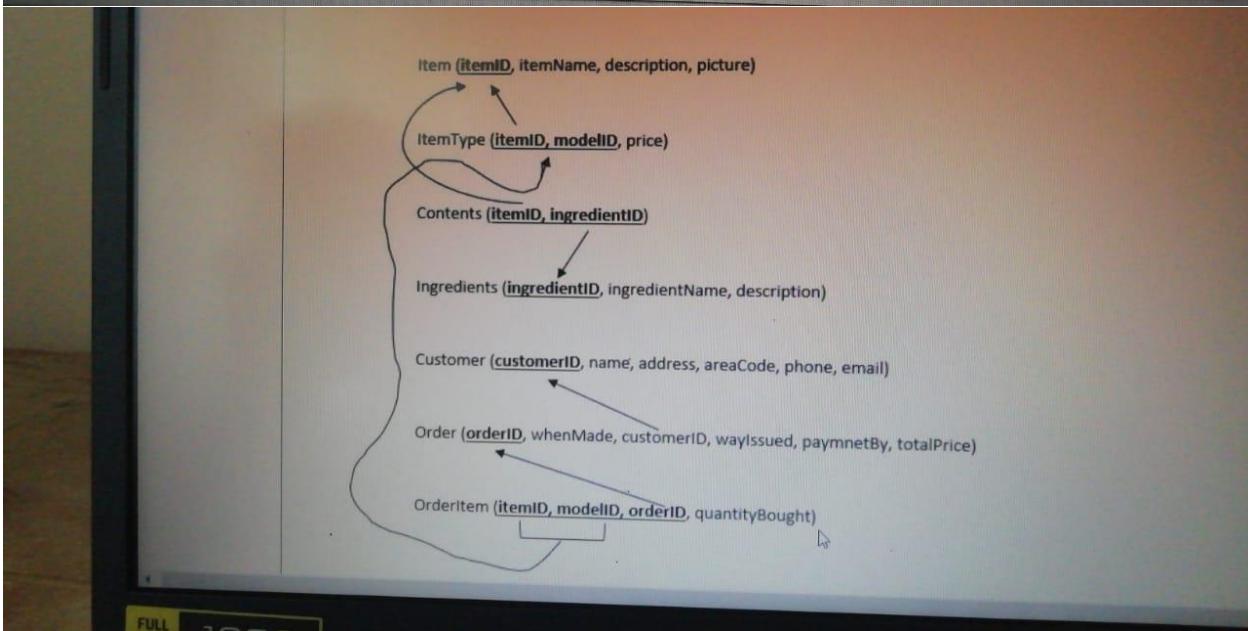
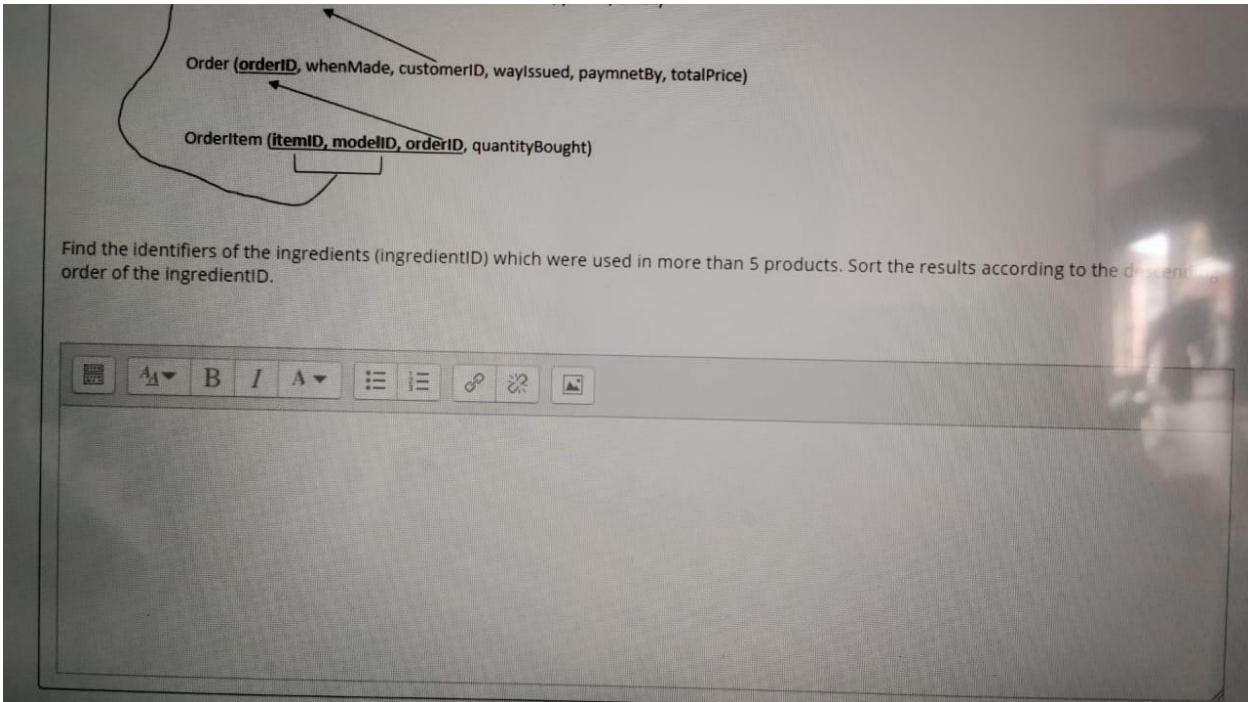
Diagram illustrating the relationships between tables:

```
graph TD; Item["Item (itemID, itemName, description, picture)"] --> ItemType["ItemType (itemID, modelID, price)"]; ItemType --> Contents["Contents (itemID, ingredientID)"]; Contents --> Ingredients["Ingredients (ingredientID, ingredientName, description)"]; Ingredients --> Order["Order (orderID, whenMade, customerID, wayIssued, paymentBy, totalPrice)"]; Order --> OrderItem["OrderItem (itemID, modelID, orderID, quantityBought)"];
```

Find the identifiers of the customers (customerID) who have placed more than five orders using 'Cash' as the payment method.

Handwritten notes on the paper below the diagram:

- travel, 50%, each state 0.2%
- total 100%



3
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Consider the relation 'Student' and the sample data with following functional dependencies.

StudentID	CourseID	Sname	Gpa	Address	Cname	Credits	Faculty
S100	C1	Kamal Perera	3.8	Gampaha	IT	4	FOC
S101	C1	Aruni Rajakumara	2.1	Colombo	IT	4	FOC
S102	C2	Nimali de Silva	3.5	Matara	CSN	4	FOC
S103	C1	Amal Cabral	2.8	Kandy	IT	4	FOC
S104	C3	Himadri Sirisena	2.7	Galle	BM	4	FOB

Primary key (StudentID + CourseID)

StudentID -> Sname, Gpa, Address

CourseID -> Cname, Credits, Faculty

Credits -> Faculty

1. Which normal form is the relation in?

- a. First Normal Form
- b. Second Normal Form
- c. Third Normal Form

1NF

studentID | Sname | GPA | address
CourseID | cname | credits | faculty
studentID | courseID

3NF

studentID | Sname | GPA | address
CourseID | cname | credits
credit | faculty
studentID | courseID



Following is part of a description related to a company which sells different types of items for their customers which are supplied through many suppliers.

Find the **best attribute type** for each of the given attribute, based on the provided description.

There are several suppliers who supplies the items for the company. A supplier has a unique supplier number, name, phone, and an address. An item must be supplied by one or more suppliers, and one supplier can supply many items. For each item company need to maintain data about its unique item code, name, quantity on hand and re-order level. When the company purchases the items from the supplier, the unit cost of an item may vary based on the supplier who supplies the item. However, when the company sells these items to their customers, they assign a unique unit price for each item.

For each order placed it is important for the company to keep track of a unique order number, the order date, delivery address, contact phone number, and the total bill amount of the order. When scheduling the deliveries, it is convenient for the company if they can extract the delivery location data (city, state, country) separately. A customer order can contain one or more items in it. And for each order the quantity ordered from each item need to be stored. The quantity ordered and the unit price are used to calculate the total bill amount for each order.

1. What is the best attribute type for the 'unit price' of an item? Choose: **primary key**
2. What is the best attribute type for the 'unit cost' of an item? Choose: **derived**
3. What is the best attribute type for the 're-order level' of an item? Choose: **derived**
4. What is the best attribute type for the 'delivery address' of an order made? Choose: **composite attribute**
5. What is the best attribute type for the 'total bill amount' of an order made? Choose: **simple data**

Select the correct statement/s regarding the database administrative tasks.

Select one or more:

- a. Issuing different usernames for different users is categorised under performance based tasks.
- b. Reducing the response time of a query is categorised under Performance tasks.
- c. Implementing a mechanism to change passwords of the users monthly is categorised under Security tasks.
- d. Being able to view the summary of profits of the company for the last 10 years is categorised under Performance based tasks.
- e. Allowing a manager to view the monthly sales figures of his organization is categorised under Security tasks.

QUESTION

Time left 0:45:42

INTRODUCTION

EXAM QUESTIONS - PART 1

EXAM QUESTIONS - PART 2

EXAM CONCERN

simple attribute

composite attribute

simple attribute

multivalued attribute

There are several loyal customers who frequently buy from this company. So, the company need to keep the unique customer number, name, address, at least two phone numbers, and the credit limit details for each customer. For different customer analysis purposes, it is necessary for the company to retrieve data about the customer's city, state, and country separately. Customers can place an order to buy items. Each order placed must be associated with only one customer. For each item company need to maintain data about its unique item code, name, unit price, quantity on hand and re-order level.

For each order placed it is important for the company to keep track of a unique order number, the order date, delivery address, and the total bill amount of the order. When scheduling the deliveries, it is convenient for the company if they can extract the delivery location data (city, state, country) separately. A customer order can contain one or more items in it. And for each order the quantity ordered from each item need to be stored. The quantity ordered and the unit price are used to calculate the total bill amount for each order.

1. What is the best attribute type for the 'credit limit' of a customer? Choose... ▾

2. What is the best attribute type for the 'quantity on hand' of an item? Choose... ▾

3. What is the best attribute type for the 'address' of a customer? Choose... ▾

4. What is the best attribute type for the 'quantity' of each item ordered in an order? Choose... ▾

5. What is the best attribute type for the 'phone number' of a customer? Choose... ▾



Question 16

Not yet answered

Marked out of
3.00

Flag question

What is/are True related to a Database Management System (DBMS)?

Select one or more:

- a. It does not support concurrent access to the data in the database X
- b. It supports in managing the data in the database ✓
- c. It is a software package designed to define, manipulate, retrieve data in a database ✓
- d. In order to maintain the integrity of the data in a database, It supports to define rules on data ✓
- e. Achieving Program-Data Dependence is not possible with it X

≡ Quiz

Finish atte

Time left 0

INTRODU

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EXAM Q

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EXAM

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ProjectCode	EmpNo	Ename	DepNo	DepName	Hourlyrate
P100	E1000	Nimisha	D001	IT	40%
P101	E1002	Dulip	D001	IT	30%
P102	E1005	Ananda	D002	HR	80%
P103	E1006	Kasun	D003	Finance	90%
P104	E1010	Kalani	D001	IT	50%

ProjectCode, EmpNo → Ename, DepNo

DepNo → DepName, Hourlyrate

EmpNo → Ename

Primary key (ProjectCode + EmpNo)

projectcode | EmpNo | depNo | DepName | Hourlyrate

EmpNo | Ename

1. Which normal form is the relation in?

- a. Unnormalized Form
- b. First Normal Form
- c. Second Normal Form
- d. Third Normal Form
- e. BCNF

projectcode | EmpNo | depNo |

DepNo | DepName | Hourlyrate

EmpNo | Ename

2. What are the 1st normal form relations for Emp_Project relation?

a. R1 (ProjectCode, EmpNo, DepNo)

R2 (DepName, Hourlyrate)

R3 (EmpNo, Ename)

b. R1 (ProjectCode, EmpNo, Ename, DepNo, DepName, Hourlyrate)

address, and the total bill amount of the order. When scheduling the deliveries, it is convenient for the company if they can extract the delivery location data (city, state, country) separately. A customer order can contain one or more items in it. And for each order the quantity ordered from each item need to be stored. The quantity ordered and the unit price are used to calculate the total bill amount for each order.

1. What is the best attribute type for the 'credit limit' of a customer? Simple attribute
2. What is the best attribute type for the 'quantity on hand' of an item? Descriptive attribute
3. What is the best attribute type for the 'address' of a customer? Composite attribute
4. What is the best attribute type for the 'quantity' of each item ordered in an order? Multivalued attribute
5. What is the best attribute type for the 'phone number' of a customer? Derived attribute

15
answered
out of
question

Follow the description below and fill-in the missing word in each box.

When designing a database, we might feel like adding a particular attribute to an entity because we would want to see it there when looking at the data. But adding that attribute might create unnecessary data redundancy and opens the possibility of data anomalies. Following database table is the result of such a situation.

EmployeeKey	EmployeeLastName	EmployeeFirstName	ProjectName	ProjectDescription
4123	Brown	Richard	DB245	New Employee Database
4124	Sanderson	Lisa	DB134	Tune the point of sale database
4215	Lewis	Wallace	DB245	New Employee Database

Over the years, database experts have developed a series of **normal** forms. Each form was designed to remove data redundancy of a database table and to reduce the occurrence of data **anomalies**. The standard process used for this is known as **normalization**.

In **[]**, some database tables that were decomposed during the **normalization** process are rejoined. This is done for efficient processing and to improve query speed. It is not a process that should be done lightly because it re-opens the possibility of the various data **[]**.

Consider the relation **TeacherModule** and the sample data with the following functional dependencies.

TeacherID	SubjectCode	Tname	ContactNo	Sname	hours	credits
T100	S100	Nimali Perera	0771234567	Mathematics	4	4
T101	S112	Sachini Amalii	0711234567	Science	5	4
T102	S123	Ann Ayesha	0761234567	Computer	2	2
T103	S102	Kasun Dineth	0111234567	Physics	4	4
T104	S104	Nimali Caldera	0331234567	Chemistry	3	4

2NF

Primary Key (TeacherID + SubjectCode)

$\text{TeacherID} \rightarrow \text{Tname}, \text{ContactNo}$,
 $\text{SubjectCode} \rightarrow \text{Sname}, \text{hours}, \text{credits}$

1. Which normal form is the relation in?

- a. First Normal Form
- b. Second Normal Form
- c. Third Normal Form
- d. BCNF
- e. Unnormalized Form

2. What are the 2nd Normal Form relations for TeacherModule relation.

- a. R1 { TeacherID, SubjectCode, Tname, ContactNo }
R2 { TeacherID, SubjectCode, Sname, hours, credits }
- b. R1 { TeacherID, Tname, ContactNo }
R2 { SubjectCode, Sname, hours, credits }

3NF

TeacherID | Tname | contactNo

SubjectCode | Sname | Hours | credits

TeacherID | SubjectID

Not yet answered
Marked out of 5.00
 Flag question

When designing a database, we might feel like adding a particular attribute to an entity because we would want to see it there when looking at the data. But adding that attribute might create unnecessary data redundancy and opens the possibility of data anomalies. Following database table is the result of such a situation.

Primary Key of the table is the attribute 'EmployeeKey'.

EmployeeKey	EmployeeLastName	EmployeeFirstName	ProjectName	ProjectDescription
4123	Brown	Richard	DB245	New Employee Database
4124	Sanderson	Lisa	DB134	Tune the point of sale database
4215	Lewis	Wallace	DB245	New Employee Database

When considering the above table, a project which has not been assigned any employees yet, cannot be entered into the table because it will lead to a **null** value in the Primary Key column. This is an example for a/an **insert** anomaly.

Suppose the project name of project DB245 was changed by management. When the database is updated all the project names were changed except for Lewis. Now if someone queries the database it would look like Lewis and Brown are working on different projects. This is an example of a/an **update** anomaly.

For instance, if Lisa Sanderson were to quit and be removed from the table, we would also lose all information about the project DB134. This is an example of a/an **deletion** anomaly.

The standard process used to handle the above issues is known as **normalization** and it is based on a set of **relation** forms.

Next page

12
answered
out of
question

Follow the description below and fill-in the missing word in each box.

When designing a database, we might feel like adding a particular attribute to an entity because we would want to see it there when looking at the data. But adding that attribute might create unnecessary data redundancy and opens the possibility of data anomalies. Following database table is the result of such a situation.

Primary Key of the table is the attribute 'EmployeeKey'.

EmployeeKey	EmployeeLastName	EmployeeFirstName	ProjectName	ProjectDescription
4123	Brown	Richard	DB245	New Employee Database
4124	Sanderson	Lisa	DB134	Tune the point of sale database
4215	Lewis	Wallace	DB245	New Employee Database

When considering the above table, a project which has not been assigned any employees yet, cannot be entered into the table because it will lead to a **null** value in the Primary Key column. This is an example for a/an **insert** anomaly.

Suppose the project name of project DB245 was changed by management. When the database is updated all the project names were changed except for Lewis. Now if someone queries the database it would look like Lewis and Brown are working on different projects. This is an example of a/an **update** anomaly.

For instance, if Lisa Sanderson were to quit and be removed from the table, we would also lose all information about the project DB134. This is an example of a/an **delete** anomaly.

The standard process used to handle the above issues is known as **normalization** and it is based on a set of **normal** forms.

Which of the following is/are TRUE with respect to Enterprise Systems?

Select one or more:

- a. Represent the knowledge and decision-making skills of specialists
- b. Support the business processes across any functional boundaries that exist within the organisation
- c. Used to manage the administrative functions in an office environment
- d. Computer systems that simulate the decision-making ability of a human expert
- e. Main elements are ERP, CRM, SCM and SRM

Consider the relation 'Emp_Project' and the sample data with following functional dependencies.

ProjectCode	EmpNo	Ename	DepNo	DepName	Hourlyrate
P100	E1000	Nimesha	D001	IT	40%
P101	E1002	Dulip	D001	IT	30%
P102	E1005	Ananda	D002	HR	80%
P103	E1006	Kasun	D003	Finance	90%
P104	E1010	Kalani	D001	IT	50%

ProjectCode,EmpNo → Ename,DepNo

DepNo → DepName,Hourlyrate

EmpNo → Ename

Primary key (ProjectCode + EmpNo)

1. Which normal form is the relation in?

- a. Unnormalized Form
- b. First Normal Form
- c. Second Normal Form
- d. Third Normal Form

Consider the relation 'Emp_Project' and the sample data with following functional dependencies.

ProjectCode	EmpNo	Ename	DepNo	DepName	Hourlyrate
P100	E1000	Nimesha	D001	IT	40%
P101	E1002	Dulip	D001	IT	30%
P102	E1005	Ananda	D002	HR	80%
P103	E1006	Kasun	D003	Finance	90%
P104	E1010	Kalani	D001	IT	50%

ProjectCode,EmpNo → Ename,DepNo

DepNo → DepName,Hourlyrate

EmpNo → Ename

Primary key (ProjectCode + EmpNo)

1. Which normal form is the relation in?

- a. Unnormalized Form
- b. First Normal Form
- c. Second Normal Form
- d. Third Normal Form

What is/are true related to Relational Database Management Systems (RDBMS)?

Select one or more:

- a. It is based on the 'relational model' introduced by E.F. Codd
- b. It supports the storage of real world data as 'objects'
- c. Relational databases work on tables which has a 'key' field that uniquely indicates each row of the table
- d. Enable users to manage predefined data relationships across multiple databases.
- e. Database management systems like SQL, MS SQL Server are based on the 'relational model'

Question 8

Not yet answered
Marked out of
5.00
 Flag question

Follow the description below and fill-in the missing word in each box.

When designing a database, we might feel like adding a particular attribute to an entity because we would want to see it there when looking at the data. But adding that attribute might create unnecessary data redundancy and opens the possibility of data anomalies. Following database table is the result of such a situation.

Primary Key of the table is the attribute 'EmployeeKey'.

EmployeeKey	EmployeeLastName	EmployeeFirstName	ProjectName	ProjectDescription
4123	Brown	Richard	DB245	New Employee Database
4124	Sanderson	Lisa	DB134	Tune the point of sale database
4215	Lewis	Wallace	DB245	New Employee Database

When considering the above table, a project which has not been assigned any employees yet, cannot be entered into the table because it will lead to a value in the Primary Key column. This is an example for a/an anomaly.

Suppose the project name of project DB245 was changed by management. When the database is updated all the project names were changed except for Lewis. Now if someone queries the database it would look like Lewis and Brown are working on different projects. This is an example of a/an anomaly.

For instance, if Lisa Sanderson were to quit and be removed from the table, we would also lose all information about the project DB134. This is an example of a/an anomaly.

The standard process used to handle the above issues is known as and it is based on a set of forms.

Quiz navigation

Finish attempt ...

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INTRODUCTION

i

EXAM QUESTIONS - PART 1

1	2	3	4	5	6
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13	14	15	16	17	

EXAM QUESTIONS - PART 2

18	19	20
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EXAM CONCERNs

21

Moodle

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Question 14
Not yet answered
Marked out of 3.00
Flag question

Which of the following statement(s) is/are true about the given ER diagram?

```
erDiagram
    {
        Pilot ||--o|| Plane : "operates"
        Pilot {
            string PId
            string PName
            string PAddress
        }
        Plane {
            string Plane_Id
            string Model
        }
    }

```

Select one or more:

- a. A plane is operated by one or more pilots
- b. A plane is operated by only one pilot
- c. Each pilot operates only one plane
- d. A pilot operates zero or more planes
- e. There can be some pilots without operating any plane

Freesync



Select the correct statement/s regarding the **database administrative tasks**.

Select one or more:

- a. Being able to view the summary of profits of the company for the last 10 years is categorised under Performance based tasks.
- b. Issuing different usernames for different users is categorised under performance based tasks.
- c. Allowing a manager to view the monthly sales figures of his organization is categorised under Security tasks.
- d. Implementing a mechanism to change **passwords** of the users monthly is categorised under Security tasks.
- e. Reducing the response time of a **query** is categorised under Peforrmance tasks.

[Next page](#)

EmployeeKey	EmployeeLastName	EmployeeFirstName	ProjectName	ProjectDescription
4123	Brown	Richard	DB245	New Employee Database
4124	Sanderson	Lisa	DB134	Tune the point of sale database
4215	Lewis	Wallace	DB245	New Employee Database

When considering the above table, a project which has not been assigned any employees yet, cannot be entered into the table because it will lead to a value in the Primary Key column. This is an example for a/an anomaly.

Suppose the project name of project DB245 was changed by management. When the database is updated all the project names were changed except for Lewis. Now if someone queries the database it would look like Lewis and Brown are working on different projects. This is an example of a/an anomaly.

For instance, if Lisa Sanderson were to quit and be removed from the table, we would also lose all information about the project DB134. This is an example of a/an anomaly.

The standard process used to handle the above issues is known as and it is based on a set of forms.

many suppliers.

Find the **best attribute type** for each of the given attribute, based on the provided description.

There are several suppliers who supplies the items for the company. A supplier has a unique supplier number, name, phone, and an address. An item must be supplied by one or more suppliers, and one supplier can supply many items. For each item company need to maintain data about its unique item code, name, quantity on hand and re-order level. When the company purchases the items from the supplier, the unit cost of an item may vary based on the supplier who supplies the item. However, when the company sells these items to their customers, they assign a unique unit price for each item.

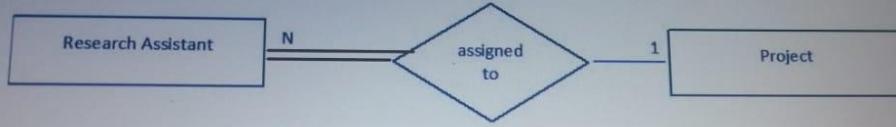
For each order placed it is important for the company to keep track of a unique order number, the order date, delivery address, contact phone number, and the total bill amount of the order. When scheduling the deliveries, it is convenient for the company if they can extract the delivery location data (city, state, country) separately. A customer order can contain one or more items in it. And for each order the quantity ordered from each item need to be stored. The quantity ordered and the unit price are used to calculate the total bill amount for each order.

1. What is the best attribute type for the 'unit price' of an item? Simple attribute
2. What is the best attribute type for the 'unit cost' of an item? Descriptive attribute
3. What is the best attribute type for the 're-order level' of an item? Simple attribute
4. What is the best attribute type for the 'delivery address' of an order made? Composite attribute
5. What is the best attribute type for the 'total bill amount' of an order made? Derived attribute



Question 14
yet answered
1 out of
1 question

Apply your knowledge on Conceptual modeling and select the correct answer for the following questions, to represent the below scenario.



1. "assigned to" is in participation from Project entity to Research Assistant entity.
2. Project can have Research Assistant/s
3. The relationship "assigned to" is a relationship.

[Next page](#)

From ARG
Select Count (MTD)
From Purchase

Following is part of a description related to a company which sells different types of items for their customers which are supplied through many suppliers.

Find the **best attribute type** for each of the given attribute, based on the provided description.

There are several suppliers who supplies the items for the company. A supplier has a unique supplier number, name, phone, and an address. An item must be supplied by one or more suppliers, and one supplier can supply many items. For each item company need to maintain data about its unique item code, name, quantity on hand and re-order level. When the company purchases the items from the supplier, the unit cost of an item may vary based on the supplier who supplies the item. However, when the company sells these items to their customers, they assign a unique unit price for each item.

For each order placed it is important for the company to keep track of a unique order number, the order date, delivery address, contact phone number, and the total bill amount of the order. When scheduling the deliveries, it is convenient for the company if they can extract the delivery location data (city, state, country) separately. A customer order can contain one or more items in it. And for each order the quantity ordered from each item need to be stored. The quantity ordered and the unit price are used to calculate the total bill amount for each order.

1. What is the best attribute type for the 'unit price' of an item? Choose... simple attribute

2. What is the best attribute type for the 'unit cost' of an item? Choose... derived

3. What is the best attribute type for the 're-order level' of an item? Choose... Composite attribute
Derived attribute
Multi-valued attribute
Descriptive attribute
Simple attribute

4. What is the best attribute type for the 'delivery address' of an order made? simple composite

5. What is the best attribute type for the 'total bill amount' of an order made? simple

LEGION

Sri Lanka Institute of Information Technology

Follow the description below and fill-in the missing word in each box.

When designing a database, we might feel like adding a particular attribute to an entity because we would want to see it there when looking at the data. But adding that attribute might create unnecessary data redundancy and opens the possibility of data anomalies. Following database table is the result of such a situation.

EmployeeKey	EmployeeLastName	EmployeeFirstName	ProjectName	ProjectDescription
4123	Brown	Richard	DB245	New Employee Database
4124	Sanderson	Lisa	DB134	Tune the point of sale database
4215	Lewis	Wallace	DB245	New Employee Database

Over the years, database experts have developed a series of forms. Each form was designed to remove data redundancy of a database table and to reduce the occurrence of data anomalies. The standard process used for this is known as normalization. In normalization, some database tables that were decomposed during the normalization process are rejoined. This is done for efficient processing and to improve query speed. It is not a process that should be done lightly because it re-opens the possibility of the various data anomalies.

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Question 17
Not yet answered
Marked out of 2.00
[Flag question](#)

Which of the following is/are TRUE with respect to Expert Systems?

Select one or more:

- a. Based on Artificial Intelligence technologies
- b. Computer systems that emulate the decision-making ability of a human expert
- c. Used to manage the administrative functions in an office environment
- d. Kind of enterprise systems
- e. Represent the knowledge and decision-making skills of specialists

The ER diagram illustrates a many-to-many relationship between the Employee and Project entities. The Employee entity has attributes Emp_Id, EName, and EAddress. The Project entity has attributes Proj_Id and PName. A diamond-shaped relationship named 'Handle' connects them, with multiplicity N on the Employee side and M on the Project side. An additional attribute, Start_Date, is associated with the Handle relationship.

Which statement/s are true related to the given ER diagram?

Select one or more:

- a. Each and every employee must handle a project
- b. Descriptive attribute 'Start_Date' gives the date an employee started handling a particular project
- c. A project must be handled by one or more employees
- d. An employee may or may not handle a project. But a project must be handled by at least one employee
- e. We can find the total number of projects handled by each employee, using a database created with this design

[Next page](#)

Find the best attribute type for each of the given attribute, based on the provided description.

There are several loyal customers who frequently buy from this company. So, the company need to keep the unique customer number, name, address, at least two phone numbers, and the credit limit details for each customer. For different customer analysis purposes, it is necessary for the company to retrieve data about the customer's city, state, and country separately. Customers can place an order to buy items. Each order placed must be associated with only one customer. For each item company need to maintain data about its unique item code, name, unit price, quantity on hand and re-order level.

For each order placed it is important for the company to keep track of a unique order number, the order date, delivery address, and the total bill amount of the order. When scheduling the deliveries, it is convenient for the company if they can extract the delivery location data (city, state, country) separately. A customer order can contain one or more items in it. And for each order the quantity ordered from each item need to be stored. The quantity ordered and the unit price are used to calculate the total bill amount for each order.

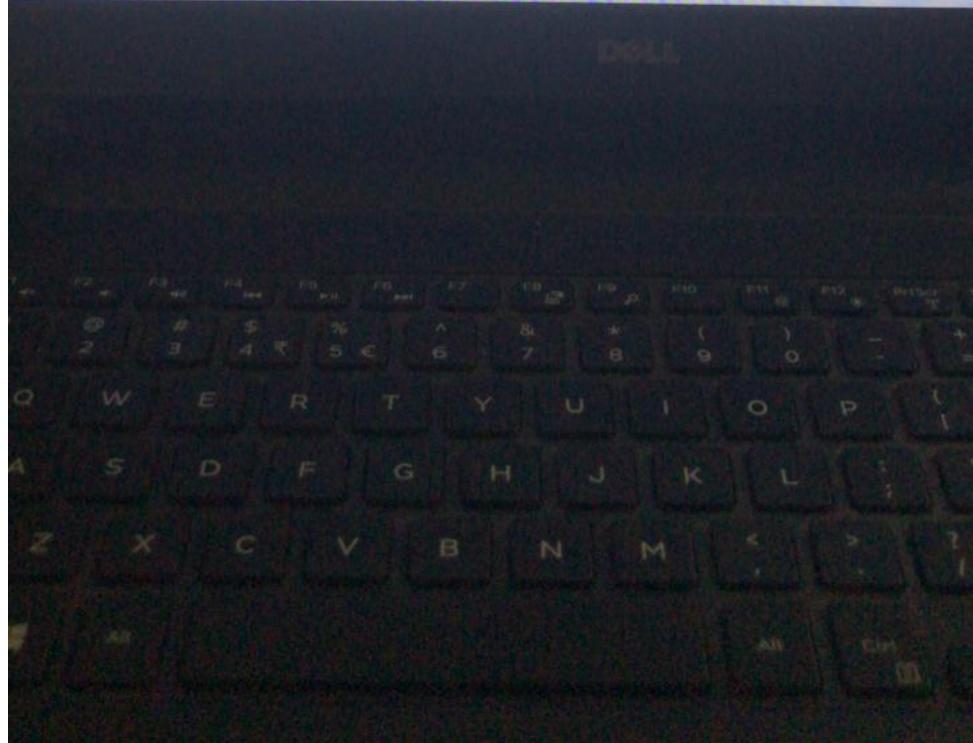
1. What is the best attribute type for the 'credit limit' of a customer? Choose... ▾

2. What is the best attribute type for the 'quantity on hand' of an item? Choose... ▾

3. What is the best attribute type for the 'address' of a customer? Choose... ▾

4. What is the best attribute type for the 'quantity' of each item ordered in an order? Choose... ▾

5. What is the best attribute type for the 'phone number' of a customer? Choose... ▾



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Consider the relation **TeacherModule** and the sample data with the following functional dependencies.

TeacherID	SubjectCode	Tname	ContactNo	SName	hours	credits
T100	S100	Nimali Perera	0771234567	Mathematics	4	4
T101	S112	Sachini Amali	0771234567	Science	5	4
T102	S123	Ann Ayesha	0761234567	Computer	2	2
T103	S102	Kasun Dineth	0112123456	Physics	4	4
T104	S104	Nimali Caldera	0331234567	Chemistry	3	4

Primary Key (TeacherID + SubjectCode)
 $\text{TeacherID} \rightarrow \text{Tname}, \text{ContactNo}$,
 $\text{SubjectCode} \rightarrow \text{Sname}, \text{hours}, \text{credits}$

1. Which normal form is the relation in?

- a. First Normal Form
- b. Second Normal Form
- c. Third Normal Form
- d. BCNF
- e. Unnormalized Form

TeacherID | Tname | ContactNo
SubjectCode Sname | hours | credit
TeacherID | SubjectCode

2. What are the 2nd Normal Form relations for TeacherModule relation.

- a. R1 (TeacherID, SubjectCode, Tname, ContactNo)
R2 (TeacherID, SubjectCode, Sname, hours, credits)
- b. R1 (TeacherID, Tname, ContactNo)
R2 (SubjectCode, Sname, hours, credits)

DELL

F3 F4 F5 F6 F7 F8 F9
\$ %

Write a query to display the employee IDs of the employees who get a salary greater than the highest salary value of department with ID 'dept2B'

```
select employeeId  
from employee  
where salary >  
(select salary  
from employee  
where departmentID like 'dept2B');
```

(

)

);

SELECT FROM WHERE GROUP BY HAVING

EMPLOYEE employee_ID name phone_number hire_date salary

designation department_id

= >ALL >ANY > EXIST

number 'dept2B' department_ID 'ID'

correct answer for the missing part of the following statement.

Execute the following insert statement

Choose...



constraint will be violated.

Choose...

- Check
- Domain
- Referential Integrity
- Entity Integrity
- Key

id	name	marks
	Camelia	40
	Neru	65
	William	87

Sri Lanka Institute of Information Technology

Select the correct answer for the missing part of the following statement.

When execute the following insert statement Choose...  constraint will be violated.

Insert in to Student values ('IT2390', 'William', 76) Referential integrity constraint

Student

studentNo	name	marks
IT1201	Camelia	40
IT2390	Neru	65
IT2213	William	87

Sri Lanka Institute of Information Technology

What is/are true related to Relational Database Management Systems (RDBMS)?

Select one or more:

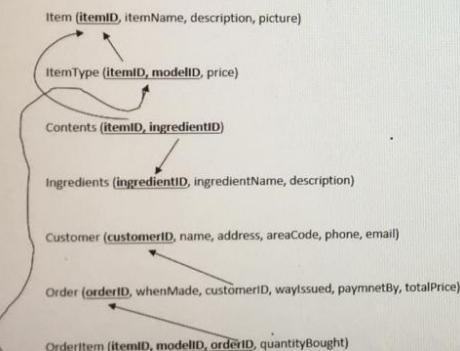
- a. Enable users to manage predefined data relationships across multiple databases.
- b. It is based on the 'relational model' introduced by E.F. Codd
- c. Database management systems like SQL, MS SQL Server are based on the 'relational model'
- d. It supports the storage of real world data as 'objects'
- e. Relational databases work on tables which has a 'key' field that uniquely indicates each row of the table

Next p

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Answered
out of
question

Following description and the schema is about a company which sells food items online. Analyze them and answer the questions.

1. Table **Item** contains items available. Attribute Description describes the item. Attribute Picture contains an URL of a picture of the item.
2. Table **Ingredient** contains the materials used in an item.
3. Items may be sold in different size of portion. These sizes are defined in table **ItemType**. Each item has different model identifiers (ModelID). ModelID has values like 'Big', 'Small', etc. The price of an item depends on the size.
4. Table **Contents** describes what ingredients comprise the item.
5. Table **Customer** contains customer data. Customers have numeric identifiers. Areacode indicates the area within the city. The format of Areacode has only 3 digits like A01, A02, B01, etc. Phone numbers and email-addresses are text fields. A customer must specify a phone number for contact.
6. Table **Order** contains information about the Orders. Orders have numeric identifiers. The time the order was made is recorded in column Whenmade. Column CustomerID contains the identifier of the customer that made the order. Attribute WayIssued defines the media used in placing the order. It can be only through phone or email. PaymentBy defines how the order is to be paid or has been paid. Only credit card or cash method is allowed. TotalPrice determines the amount to be paid.
7. Table **ItemOrdered** defines what has been ordered. The attributes itemID and ModelID identify the form of item ordered, and Quantity specifies the number of units ordered.



14
Answered
out of
question

Analyze the following scenario and select the correct answer for the following questions.

A Pharmaceutical company plans to conduct a double-blind test of a new drug. They will involve about 20 doctors and about 400 patients. The company will need to track patient information from their first screening through each of their interviews. Doctors need to be able to see their own patient's information, but not other doctor's patients. Patients should be able to see their own medical profile, the doctor's notes, and nothing else. Only the two researchers should be able to see everything. At present they are on discussion of the approach they should use for data storage. They have considered two options as; a Shared Excel sheet over the Cloud Storage and Database approach.

1. Do you think it is necessary for them to go for the Database approach?
2. What is the main advantage (if the answer for above is Yes) or the disadvantage (if the answer for above is No) the database approach would have over the other approach?
3. If the database approach were used, where would you find the names of the data items (such as Doctors, Patients...) stored and any connections between the data items, in the Three-schema architecture of the DBMS?
4. If the database approach were used, and if Database Administrator identifies the need to encrypt some of the sensitive data related to patients, he will be able to do the change without effecting the upper levels of the Three-schema architecture. This property is known as

Quiz navigation

Finish attempt ...

Time left 0:48:31

INTRODUCTION

1

EXAM QUESTIONS - PART

1 2 3 4

9 10 11 12

17

EXAM QUESTIONS - PART

18 19 20

EXAM CONCERN

21

Next page

Which of the following is/ are **false** about the schema resulted after mapping the below ER diagram to the relational model?

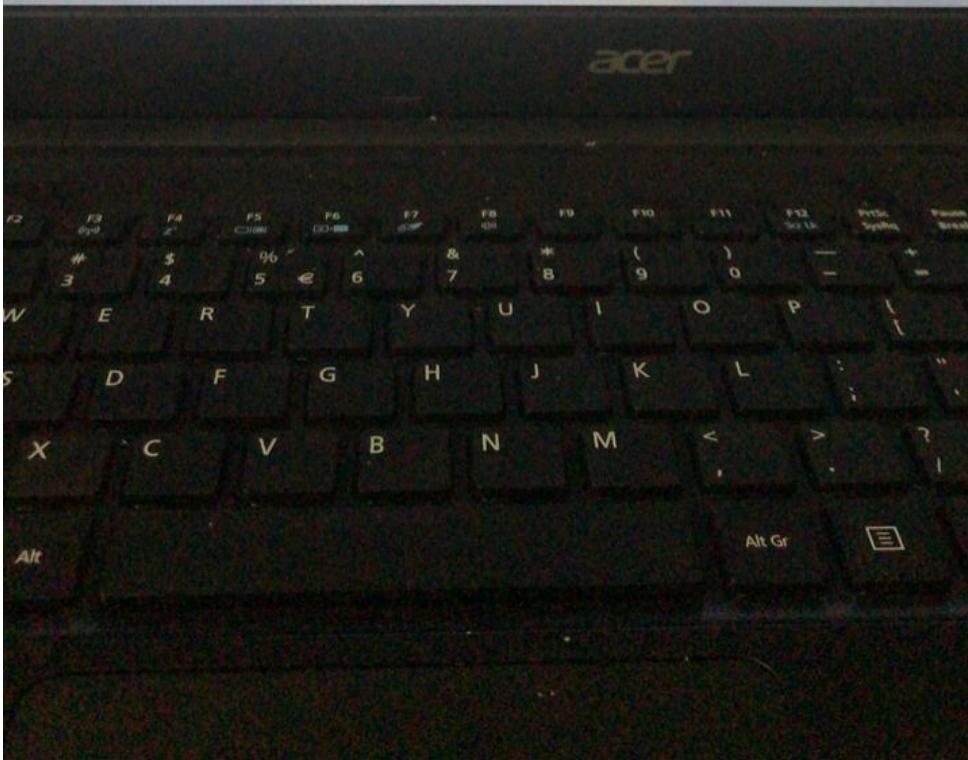
```

    erDiagram
        {
            entity Movie {
                string name
                number year
                number id
                string language
            }
            entity Show {
                string month
                string year
                string date
                number day
                number id
                string ticketOffice
            }
            entity MovieStar {
                string name
                number id
                string first
                string last
            }
            entity Customer {
                string name
                number cno
            }
            entity Theatre {
                string capacity
                number id
                string type
            }

            Movie }o--o Show : has
            Movie }o--o MovieStar : starring
            Show }o--o Customer : reserves
            MovieStar }o--o Customer : reserves
            Show }o--o Theatre : ticketOffice
        }
    
```

Select one or more:

- a. Primary key showID in the Show table is referred by the 2 tables
- b. Primary key cno in the Customer table is referred by the 2 tables
- c. Degree of the MovieStar table is 3
- d. Reserves table has 2 foreign keys
- e. Primary key ID in the MovieStar table is referred by one table



Question 16

Not yet answered
Marked out of 5.00
 Flag question

Follow the description below and fill-in the missing word in each box.

When designing a database, we might feel like adding a particular attribute to an entity because we would want to see it there when looking at the data. But adding that attribute might create unnecessary data redundancy and opens the possibility of data anomalies. Following database table is the result of such a situation.

Primary Key of the table is the attribute 'EmployeeKey'.

EmployeeKey	EmployeeLastName	EmployeeFirstName	ProjectName	ProjectDescription
4123	Brown	Richard	DB245	New Employee Database
4124	Sanderson	Lisa	DB134	Tune the point of sale database
4215	Lewis	Wallace	DB245	New Employee Database

When considering the above table, a project which has not been assigned any employees yet, cannot be entered into the table because it will lead to a value in the Primary Key column. This is an example for a/an anomaly.

Suppose the project name of project DB245 was changed by management. When the database is updated all the project names were changed except for Lewis. Now if someone queries the database it would look like Lewis and Brown are working on different projects. This is an example of a/an anomaly.

For instance, if Lisa Sanderson were to quit and be removed from the table, we would also lose all information about the project DB134. This is an example of a/an anomaly.

The standard process used to handle the above issues is known as and it is based on a set of forms.

Question 12

Not yet answered
Marked out of 5.00
 Flag question

Analyze the following scenario and select the correct answer for the following questions.

A Pharmaceutical company plans to conduct a double-blind test of a new drug. They will involve about 20 doctors and about 400 patients. The company will need to track patient information from their first screening through each of their interviews. Doctors need to be able to see their own patient's information, but not other doctor's patients. Patients should be able to see their own medical profile, the doctor's notes, and nothing else. Only the two researchers should be able to see everything. At present they are on discussion of the approach they should use for data storage. They have considered two options as: a Shared Excel sheet over the Cloud Storage and Database approach.

1. Do you think it is necessary for them to go for the Database approach?
2. What is the main advantage (if the answer for above is Yes) or the disadvantage (if the answer for above is No) the database approach would have over the other approach?
3. If the database approach were used, where would you find the names of the data items (such as Doctors, Patients...) stored and any connections between the data items, in the Three-schema architecture of the DBMS?
4. If the database approach were used, and if Database Administrator identifies the need to encrypt some of the sensitive data related to patients, he will be able to do the change without effecting the upper levels of the Three-schema architecture. This property is known as

Quiz

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EXAM...

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Quiz navigation

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INTRODUCTION

I

EXAM QUESTIONS - PAR...

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EXAM QUESTIONS - PART

18 19 20

EXAM CONCERN...

21

description

Select one:

- a. Customer (ID, name, address, creditData)
Customer_phone (ID, phone)
Order (ID, date, custID)
Order_details (ID, description)
- b. Customer (ID, name, address, creditData, orderID)
Customer_phone (ID, phone)
Order (ID, date, description)
- c. Customer (ID, name, address, creditData)
Customer_phone (ID, phone)
Order (ID, date, custID)
Order_details (ID, description)
- d. Customer (ID, name, address, creditData)
Customer_phone (ID, phone)
Order (ID, date, custID, description)
Order_details (ID)
- e. Customer (ID, name, address, creditData)
Customer_phone (ID, phone)
Order (ID, date, custID)
Order_details (ID, description)

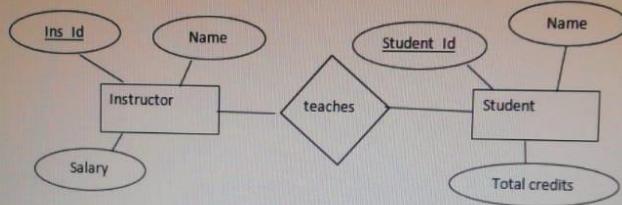


Question 16
Not yet answered
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3.00

Flag question

Identify correct cardinalities for following ER diagram, based on the following scenario.

'Only one instructor is assigned to each student. An instructor will be allocated only one student for mentoring.'



Select one:

- a. 1:M
- b. 1:1
- c. 1:M or M:N
- d. 1:1 or 1:M
- e. M:N

Select the correct answer after map the following ER model into the relational model.

```
erDiagram
    class Customer {
        string name
        number ID
        string address
        string phone
        object CreditData
    }
    class Order {
        number ID
        string date
    }
    class OrderDetails {
        number ID
        string description
    }

    Customer }o--o{ Order : places
    Order }o--o{ OrderDetails : has

```

The ER diagram illustrates the following entities and their associations:

- Customer**: Represented by a rectangle. It has attributes `name`, `ID`, `address`, and `phone`. It is associated with `CreditData` via a line connecting them.
- Order**: Represented by a rectangle. It has attribute `date` and is associated with `Customer` via the `places` relationship.
- Order Details**: Represented by a rectangle. It is associated with `Order` via the `has` relationship.

Select one:

- a. Customer (`ID, name, address, creditData`)
Customer_phone (`ID, phone`)
Order (`ID, date, custID`)
Order_details (`ID, description`)
- b. Customer (`ID, name, address, creditData, orderID`)
Customer_phone (`ID, phone`)
Order (`ID, date, description`)
- c. Customer (`ID, name, address, creditData`)
Customer_phone (`ID, phone`)
Order (`ID, date, custID`)
Order_details (`ID, description`)
- d. Customer (`ID, name, address, creditData`)



Question 12
Not yet answered
Marked out of 5.00
 Flag question

Follow the description below and fill-in the missing word in each box.

When designing a database, we might feel like adding a particular attribute to an entity because we would want to see it there when looking at the data. But adding that attribute might create unnecessary data redundancy and opens the possibility of data anomalies. Following database table is the result of such a situation.

Primary Key of the table is the attribute 'EmployeeKey'.

EmployeeKey	EmployeeLastName	EmployeeFirstName	ProjectName	ProjectDescription
4123	Brown	Richard	DB245	New Employee Database
4124	Sanderson	Lisa	DB134	Tune the point of sale database
4215	Lewis	Wallace	DB245	New Employee Database

When considering the above table, a project which has not been assigned any employees yet, cannot be entered into the table because it will lead to a [] value in the Primary Key column. This is an example for a/an [] anomaly.

Suppose the project name of project DB245 was changed by management. When the database is updated all the project names were changed except for Lewis. Now if someone queries the database it would look like Lewis and Brown are working on different projects. This is an example of a/an [] anomaly.

For instance, if Lisa Sanderson were to quit and be removed from the table, we would also lose all information about the project DB134. This is an example of a/an [] anomaly.

The standard process used to handle the above issues is known as [] and it is based on a set of [] forms.

↳

≡ Quiz navi
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INTRODUCTION
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EXAM QUESTION
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EXAM CONCERN
 21

NetExam
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0
Answered
of
Question

Select the correct answer for the missing part of the following statement.

When execute the following insert statement Choose... constraint will be violated.

Insert in to Student values ('IT2390', 'William', 76)

Student

studentNo	name	marks
IT1201	Camelia	40
IT2390	Neru	65
IT2213	William	87

Question 16
Not yet answered
Marked out of 3.00
[Flag question](#)

Identify correct cardinalities for following ER diagram, based on the following scenario.
'Only one instructor is assigned to each student. An instructor will be allocated only one student for mentoring.'

```
graph LR; Instructor[Instructor] -- "teaches" --> Student[Student]; Instructor --> InsId((Ins_Id)); Instructor --> Name1((Name)); Instructor --> Salary((Salary)); Student --> StudentId((Student_Id)); Student --> Name2((Name)); Student --> TotalCredits((Total credits));
```

Select one:

- a. 1:M
- b. 1:1
- c. 1:M or M:N
- d. 1:1 or 1:M
- e. M:N

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Question 16
Not yet answered
Marked out of 3.00
[Flag question](#)

Identify correct cardinalities for following ER diagram, based on the following scenario.
'Only one instructor is assigned to each student. An instructor will be allocated only one student for mentoring.'

```
graph LR; Instructor[Instructor] -- "teaches" --> Student[Student]; Instructor --> InsId((Ins_Id)); Instructor --> Name1((Name)); Instructor --> Salary((Salary)); Student --> StudentId((Student_Id)); Student --> Name2((Name)); Student --> TotalCredits((Total credits));
```

Select one:

- a. 1:M
- b. 1:1
- c. 1:M or M:N
- d. 1:1 or 1:M
- e. M:N

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Following is part of a description related to a company which sells different types of items for their customers which many suppliers.

Find the **best attribute type** for each of the given attribute, based on the provided description.

There are several suppliers who supplies the items for the company. A supplier has a unique supplier number, name, phone address. An item must be supplied by one or more suppliers, and one supplier can supply many items. For each item company maintain data about its unique item code, name, quantity on hand and re-order level. When the company purchases the item from supplier, the unit cost of an item may vary based on the supplier who supplies the item. However, when the company sells the item to their customers, they assign a unique unit price for each item.

For each order placed it is important for the company to keep track of a unique order number, the order date, delivery address, phone number, and the total bill amount of the order. When scheduling the deliveries, it is convenient for the company if they can store the delivery location data (city, state, country) separately. A customer order can contain one or more items in it. And for each order, the quantity ordered from each item need to be stored. The quantity ordered and the unit price are used to calculate the total bill amount for each order.

1. What is the best attribute type for the 'unit price' of an item?

2. What is the best attribute type for the 'unit cost' of an item?

3. What is the best attribute type for the 're-order level' of an item?

4. What is the best attribute type for the 'delivery address' of an order made?

ASUS VivoBook

the following scenario and select the correct answer for the following questions.

In a well-established campus with many faculties, maintain their student assessment/exam grades in Excel Sheets. They maintain a spreadsheet for every module they teach. In the spreadsheet they track the scores for every assignment and test. Then assign term marks for the module. The Examinations department of the campus has to request student grades for the modules from the relevant faculties after each exam, to finalize the student's final grades for the term. Also the Management plans to get important statistics based on the exam marks and to analyze them with the aim of improving the quality of the education provided.

You think it is necessary for them to go for the Database approach? Yes

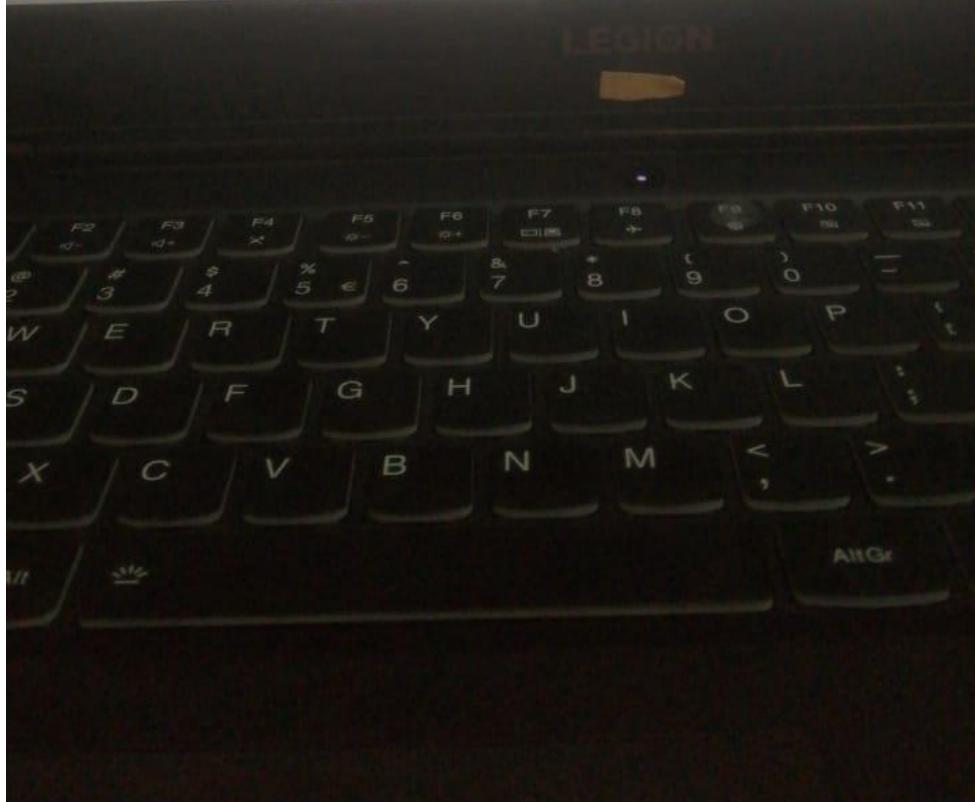
What is the main advantage (if the answer for above is Yes) or the disadvantage (if the answer for above is No) the database approach

I have over the current system? Data Centralization and Ease of Management

If the database approach were used, the Database Administrator need to identify a suitable data storage method. In the Three-schema architecture of the DBMS where would you find details of the storage method used? External Schema

If the database approach were used, and if Database Administrator identifies the need to move to a new data storage method which is much more efficient, he will be able to do the change without effecting the upper levels of the Three-schema architecture. This property is known as Physical Data Independence

Next page



Not yet answered
Marked out of 5.00
 Flag question

model?

```

    erDiagram {
        entity Movie {
            string ID
            string name
            string year
        }
        entity Show {
            string ID
            string year
            string month
            string date
            string day
        }
        entity Theatre {
            string ID
            string capacity
            string type
        }
        entity Customer {
            string ID
            string name
            string email
        }
        entity Seat {
            string ID
            string row
            string type
            string position
        }

        Movie }o--o Show : has
        Customer }o--o Show : reserves
        Theatre }o--o Seat : has
    }
  
```

Select one or more:

- a. Customer table will contain 4 attributes
- b. Movie table will contain 3 attributes
- c. The relation containing language attribute has 2 foreign keys
- d. The relation containing language attribute has a composite primary key
- e. Seat table will contain 4 attributes

Moodle

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Question 11
Not yet answered
Marked out of 3.00
 Flag question

Which of the following statement(s) is/are true about the given ER diagram?

```

    erDiagram {
        entity Pilot {
            string Id
            string pName
        }
        entity Plane {
            string Plane_Id
            string Model
        }

        Pilot }o--o Plane : operates
    }
  
```

Select one or more:

- a. A plane is operated by only one pilot
- b. Each pilot operates only one plane
- c. There can be some pilots without operating any plane
- d. A plane is operated by one or more pilots
- e. A pilot operates zero or more planes

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Time left 1:00:21
INTRODUCTION
EXAM QUESTIONS - PART 1
EXAM QUESTIONS - PART 2
EXAM CONCERN

Select the correct statement/s regarding the **database administrative tasks**.

Select one or more:

- a. Implementing a mechanism to change passwords of the users monthly is categorised under Security tasks.
- b. Issuing different usernames for different users is categorised under performance based tasks.
- c. Being able to view the summary of profits of the company for the last 10 years is categorised under Performance based tasks.
- d. Reducing the response time of a query is categorised under Peforrmance tasks.
- e. Allowing a manager to view the monthly sales figures of his organization is categorised under Security tasks.

[Next page](#)

What is/are true related to Relational Database Management Systems (RDBMS)?

Select one or more:

- a. Relational databases work on tables which has a 'key' field that uniquely indicates each row of the table
- b. It is based on the 'relational model' introduced by E.F. Codd
- c. Database management systems like SQL, MS SQL Server are based on the 'relational model'
- d. It supports the storage of real worl data as 'objects'
- e. Enable users to manage predefined data relationships across multiple databases.

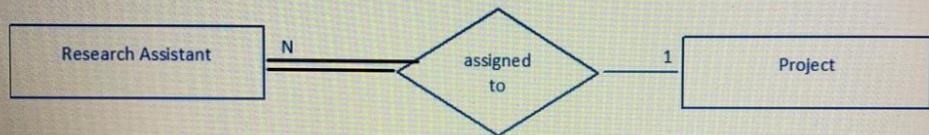
[Next page](#)



ed

an

Apply your knowledge on Conceptual modeling and select the correct answer for the following questions, to represent the below scenario.



1. "assigned to" is in participation from Project entity to Research Assistant entity.
2. Project can have Research Assistant/s
3. The relationship "assigned to" is a relationship.

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Quiz nav

Finish attempt ...

Time left 0:53:15

INTRODUCTION



EXAM QUESTIO

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15	16	17

EXAM QUESTION

18	19	20
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EXAM CONCERN

21

**Question 10**

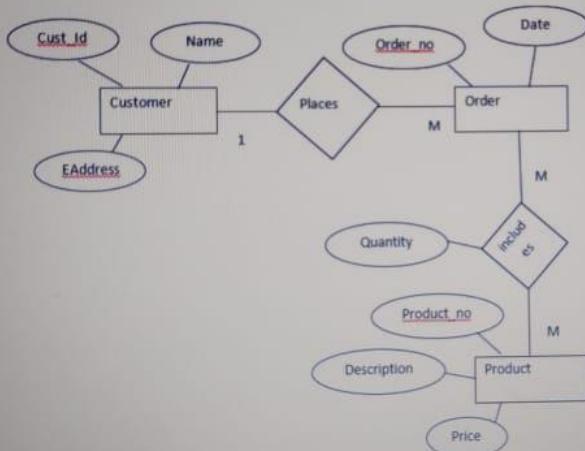
Not yet answered

Marked out of

5.00

 Flag question

Which of the following statements are true for the given ER diagram?



customer custID |name|Address
order Order_no|date|customerID
product Product_no|description|price
include order_no|product_no|quantity

Select one or more:

Moodle

Sri Lanka Institute of Information Technology

Question 12
Not yet answered
Marked out of 10.00
 Flag question

Consider the relation 'Student' and the sample data with following functional dependencies.

StudentID	CourseID	Sname	Gpa	Address	Cname	Credits	Faculty
S100	C1	Kamal Perera	3.8	Gampaha	IT	4	FOC
S101	C1	Aruni Rajakumara	2.1	Colombo	IT	4	FOC
S102	C2	Nimali de Silva	3.5	Matara	CSN	4	FOC
S103	C1	Amal Cabral	2.8	Kandy	IT	4	FOC
S104	C3	Himadri Sirisena	2.7	Galle	BM	4	FOB

Primary key (StudentID + CourseID)
 StudentID → Sname, Gpa, Address
 CourseID → Cname, Credits, Faculty
 Credits → Faculty

1. Which normal form is the relation in?
 a. First Normal Form
 b. Second Normal Form
 c. Third Normal Form
 d. BCNF
 e. Unnormalized Form

2. What are the 2nd Normal Form relations for Student relation.

EXAM QUESTIONS - PART 1
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 8 9 10 11 12
 15 16 17

EXAM QUESTIONS - PART 2
 18 19 20

EXAM CONCERN
 21

Analyze the following scenario and select the correct answer for the following questions.

Lecturers in a well-established campus with many faculties, maintain their student assessment/exam grades in Excel Sheets. They maintain a separate spreadsheet for every module they teach. In the spreadsheet they track the scores for every assignment and test. Then assign term grade for the module. The Examinations department of the campus has to request student grades for the modules from the relevant lectures after each exam, to finalize the student's final grades for the term. Also the Management plans to get important statistics based on student exam marks and to analyze them with the aim of improving the quality of the education provided,

1. Do you think it is necessary for them to go for the Database approach?

2. What is the main advantage (if the answer for above is Yes) or the disadvantage (if the answer for above is No) the database approach would have over the current system? Choose...

3. If the database approach were used, the Database Administrator need to identify a suitable data storage method. In the Three-schema architecture of the DBMS where would you find details of the storage method used?
 Choose...

4. If the database approach were used, and if Database Administrator identifies the need to move to a new data storage method which is much more efficient, what would be the best way to do it?

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Question 10
Not yet answered
Marked out of 4.00
 Flag question

When execute the following statement an error has been occurred.

Delete
From Course
Where courseNo = 2

To execute the above statement without an error action can be used when create the table

Choose... ▾

Student

studentNo	name	courseNo
IT1201	Camelia	1
IT2390	Neru	2
IT2213	William	1

Course

courseNo	name
1	IT
2	SE

EXAM QUESTIONS - PART 1
1 2 3 4 5
8 9 10 11 12
15 16 17

EXAM QUESTIONS - PART 2
18 19 20

EXAM CONCERN
21

Analyze the following scenario and select the correct answer for the following questions.

A Pharmaceutical company plans to conduct a double-blind test of a new drug. They will involve about 20 doctors and about 400 patients. The company will need to track patient information from their first screening through each of their interviews. Doctors need to be able to see their own patient's information, but not other doctor's patients. Patients should be able to see their own medical profile, the doctor's notes, and nothing else. Only the two researchers should be able to see everything. At present they are on discussion of the approach they should use for data storage. They have considered two options as; a Shared Excel sheet over the Cloud Storage and Database approach.

1. Do you think it is necessary for them to go for the Database approach? ▾

2. What is the main advantage (if the answer for above is Yes) or the disadvantage (if the answer for above is No) the database approach would have over the other approach? Choose... ▾

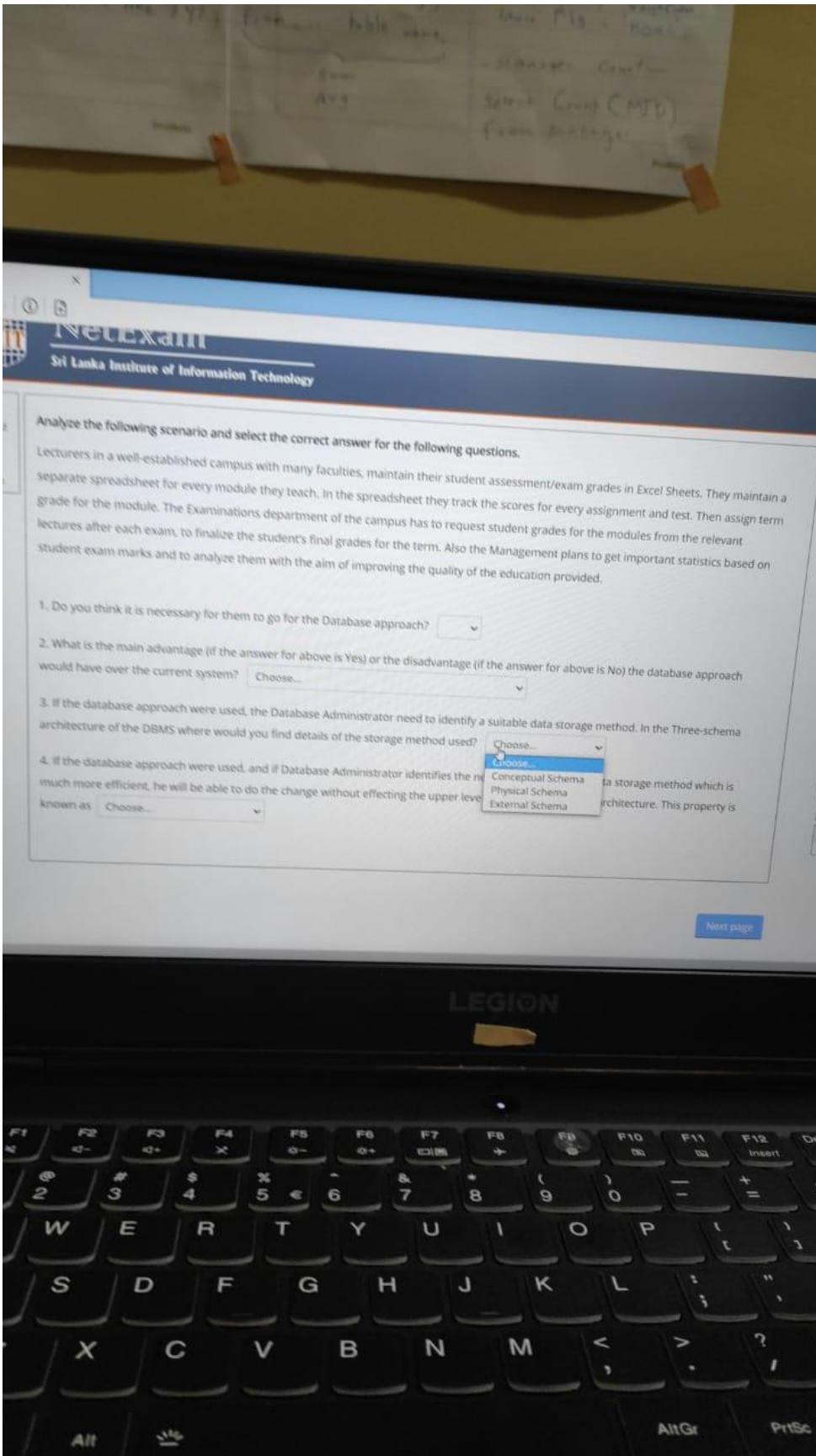
3. If the database approach were used, where would you find the names of the data items (such as Doctors, Patients...) stored and any connections between the data items, in the Three-schema architecture of the DBMS?

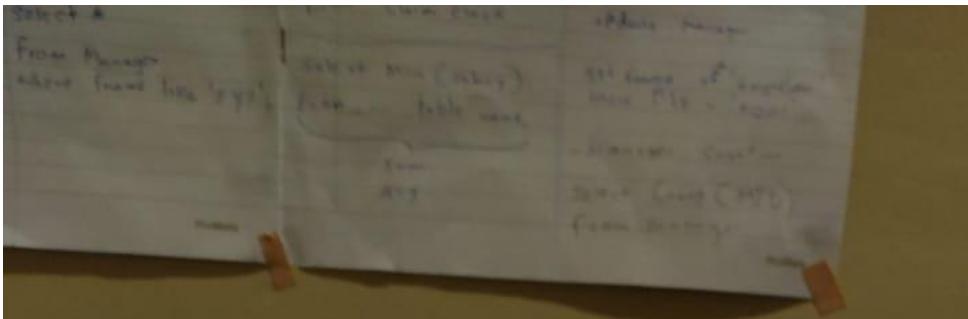
Choose... ▾

Analyze the following scenario and select the correct answer for the following questions.

A Pharmaceutical company plans to conduct a double-blind test of a new drug. They will involve about 20 doctors and about 400 patients. The company will need to track patient information from their first screening through each of their interviews. Doctors need to be able to see their own patient's information, but not other doctor's patients. Patients should be able to see their own medical profile, the doctor's notes, and nothing else. Only the two researchers should be able to see everything. At present they are on discussion of the approach they should use for data storage. They have considered two options as: a Shared Excel sheet over the Cloud Storage and Database approach.

1. Do you think it is necessary for them to go for the Database approach?
2. What is the main advantage (if the answer for above is Yes) or the disadvantage (if the answer for above is No) the database approach would have over the other approach? Choose...
3. If the database approach were used, where would you find the names of the data items (such as Doctors, Patients...) stored and any connections between the data items, in the Three-schema architecture of the DBMS?
 Choose...





SIT Sri Lanka Institute of Information Technology

Analyze the following scenario and select the correct answer for the following questions.

Lecturers in a well-established campus with many faculties, maintain their student assessment/exam grades in Excel Sheets. They maintain a separate spreadsheet for every module they teach. In the spreadsheet they track the scores for every assignment and test. Then assign term grade for the module. The Examinations department of the campus has to request student grades for the modules from the relevant lectures after each exam, to finalize the student's final grades for the term. Also the Management plans to get important statistics based on student exam marks and to analyze them with the aim of improving the quality of the education provided.

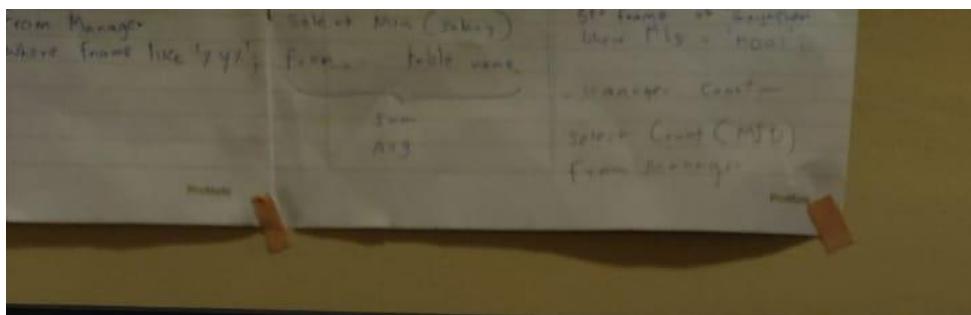
1. Do you think it is necessary for them to go for the Database approach?

2. What is the main advantage (if the answer for above is Yes) or the disadvantage (if the answer for above is No) the database approach would have over the current system?

3. If the database approach were used, the Database Administrator need to identify a suitable data storage method. In the Three-schema architecture of the DBMS where would you find details of the storage method used?

4. If the database approach were used, and if Database Administrator identifies the need to move to a new data storage method which is much more efficient, he will be able to do the change without effecting the upper levels of the Three-schema architecture. This property is known as Logical Data Independence Physical Data Independence





Analyze the following scenario and select the correct answer for the following questions.

Lecturers in a well-established campus with many faculties, maintain their student assessment/exam grades in Excel Sheets. They maintain a separate spreadsheet for every module they teach. In the spreadsheet they track the scores for every assignment and test. Then assign term grade for the module. The Examinations department of the campus has to request student grades for the modules from the relevant lectures after each exam, to finalize the student's final grades for the term. Also the Management plans to get important statistics based on student exam marks and to analyze them with the aim of improving the quality of the education provided.

1. Do you think it is necessary for them to go for the Database approach?

2. What is the main advantage (if the answer for above is Yes) or the disadvantage (if the answer for above is No) the database approach would have over the current system?

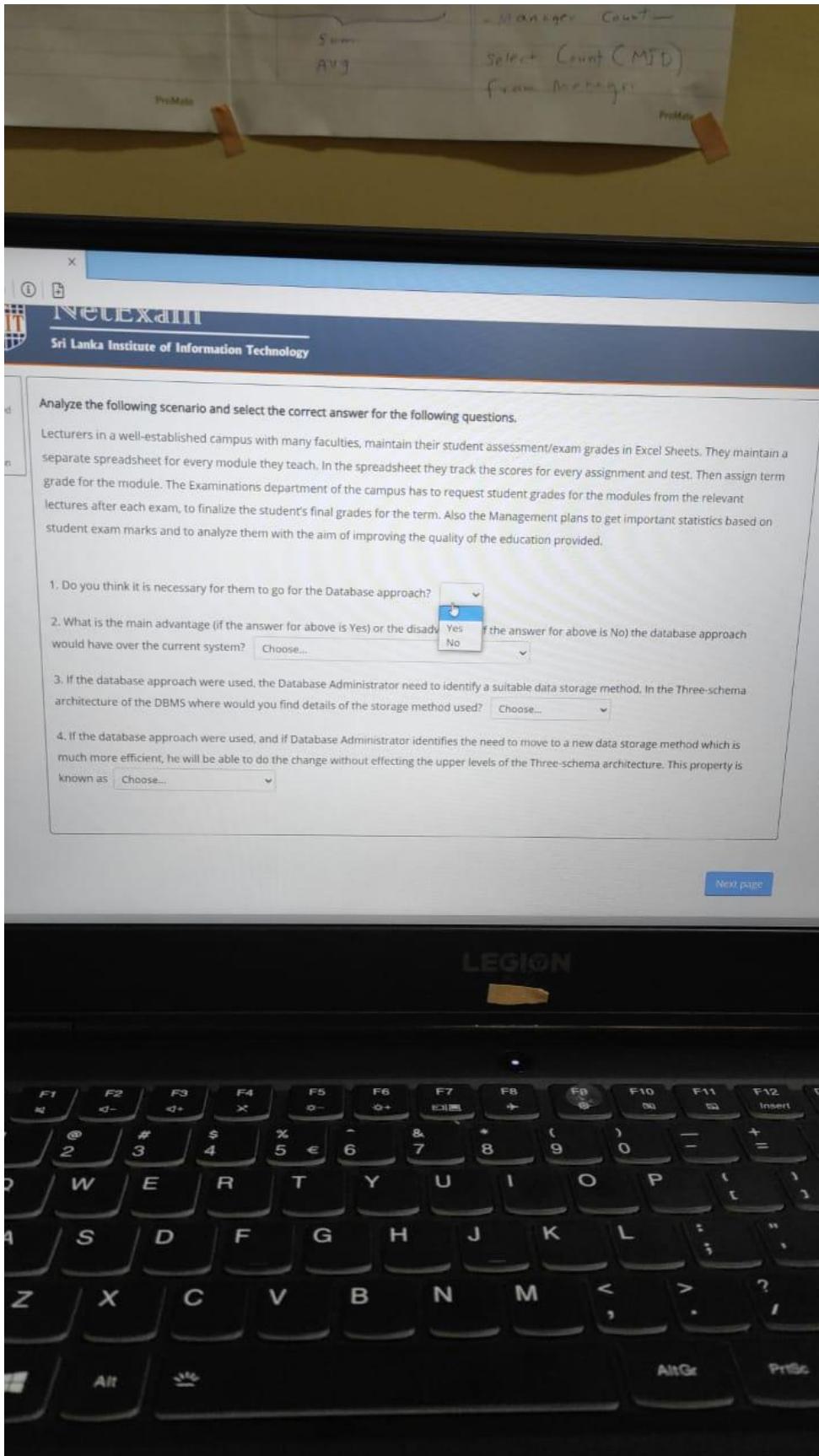
3. If the database approach were used, what would be the architecture of the DBMS where would the data be stored?

4. If the database approach were used, what would be the main advantage of the DBMS?

Choose...
Choose...
Data Centralization and Ease of Management
Manage Large Volume of Data
Increased Security
Cost of Database is higher than the Benefits Gained
Concurrent Access Ability

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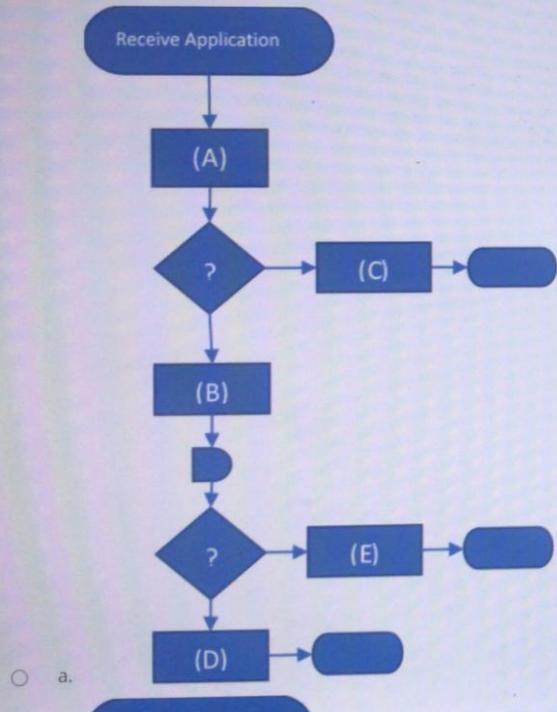


MSc degree registration process starts by receiving the application forms from prospective candidates. The following tasks are done subsequently in the registration process (Tasks are labeled as A, B, C...).

The entry criteria are validated (A). If valid, sit for the written exam (B). Otherwise, reject the application (C). Candidate has to wait for few days to know the exam results. If the exam is passed, send the payment details (D). Otherwise, send the regret notification (E).

Which of the following process maps is best fitting with the above scenario?

Select one:



a.

7
answered
out of
question

Which of the following are true related to the following Relationship?



Select one or more:

- a. Each Course must have a student registered in it
- b. It is not a Binary relationship
- c. The participation of the Student entity is Total
- d. One entity in the Course entity-set can make at most one relationship instance with the other side
- e. Cardinality ratio for the relationship is 1:M

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Analyze the following scenario and select the correct answer for the following questions.

A Pharmaceutical company plans to conduct a double-blind test of a new drug. They will involve about 20 doctors and about 400 patients. The company will need to track patient information from their first screening through each of their interviews. Doctors need to be able to see their own patient's information, but not other doctor's patients. Patients should be able to see their own medical profile, the doctor's notes, and nothing else. Only the two researchers should be able to see everything. At present they are on discussion of the approach they should use for data storage. They have considered two options as; a Shared Excel sheet over the Cloud Storage and Database approach.

1. Do you think it is necessary for them to go for the Database approach? ▾

2. What is the main advantage (if the answer for above is Yes) or the disadvantage (if the answer for above is No) the database approach would have over the other approach? Choose... ▾

3. If the database approach were used, where would you find the names of the data items (such as Doctors, Patients...) stored and any connections between the data items, in the Three-schema architecture of the DBMS?

Choose... ▾

Question 9

Not yet answered
Marked out of 10.00
 Flag question

Consider the relation **TeacherModule** and the sample data with the following functional dependencies.

TeacherID	SubjectCode	Tname	ContactNo	SName	hours	credits
T100	S100	Nimali Perera	0771234567	Mathematics	4	4
T101	S112	Sachini Amalli	0711234567	Science	5	4
T102	S123	Ann Ayesha	0761234567	Computer	2	2
T103	S102	Kasun Dineth	0112123456	Physics	4	4
T104	S104	Nimali Caldera	0331234567	Chemistry	3	4

Primary Key (TeacherID + SubjectCode)

TeacherID → Tname, ContactNo,

SubjectCode → Sname, hours, credits

1 . Which normal form is the relation in?

- a. First Normal Form
- b. Second Normal Form
- c. Third Normal Form
- d. BCNF
- e. Unnormalized Form

2. What are the 2nd Normal Form relations for TeacherModule relation.

- a. R1 (TeacherID, SubjectCode, Tname, ContactNo)
- b. R2 (TeacherID, SubjectCode, Sname, hours, credits)

Question 12

Not yet answered
Marked out of 10.00
 Flag question

Read the following paragraph and answer the questions below.

Library information system at SLIIT provides the facility to borrow books for studies. Library catalogue is constantly updated to accommodate resource materials relating to new developments in core teaching areas. The newly added material can be a book, a stand-a-journal, a CD or an article. Member registration needs students to deposit refundable amount of Rs.5000. It is not required for the staff members. Borrowing involves, selecting the desired material from the library by the member and library assistant recording it against the student ID or the employee ID. Borrowing process automatically generates the returning date relevant to the borrowing transaction. Returning involves, submitting the material on the returning date by the student/staff member, calculating fines if any and recording the returning transaction in the system by the library assistant. At the end of the day, librarian generates the daily transaction report from the system.

Select the correct answer for the following questions, using the drop-down menu.

1. Inputs for the member registration process are,

- a) Student ID/employee ID
- b) Book title
- c) Book ID
- d) Returning date
- e) Deposit amount

2. Output of the borrowing process is,

- a) Student ID/employee ID
- b) Book title
- c) Book ID
- d) Returning date

c) Book ID

d) Returning date

e) Deposit amount

2. Output of the borrowing process is,

a) Student ID/employee ID

b) Book title

c) Book ID

d) Returning date

e) Deposit amount

3. Which of the following statement/s is/are related to the processing function of the SLIIT library system?

a) Periodically, the system reports on the books available, books overdue and membership

b) Calculates fines for overdue books

c) Checks for valid membership

d) Refunds the deposit amount after completing the degree

e) Captures student ID and Book ID before issuing the book to the student

f) Captures employee ID and Book ID before returning the book by the staff member

1. Inputs for the member registration process are,

2. Output of the borrowing process is,

3. Which of the following statement/s is/are related to the processing function of the SLIIT library system?



Follow the description below and fill-in the missing word in each box.

When designing a database, we might feel like adding a particular attribute to an entity because we would want to see it there when looking at the data. But adding that attribute might create unnecessary data redundancy and opens the possibility of data anomalies. Following database table is the result of such a situation.

Primary Key of the table is the attribute 'EmployeeKey'.

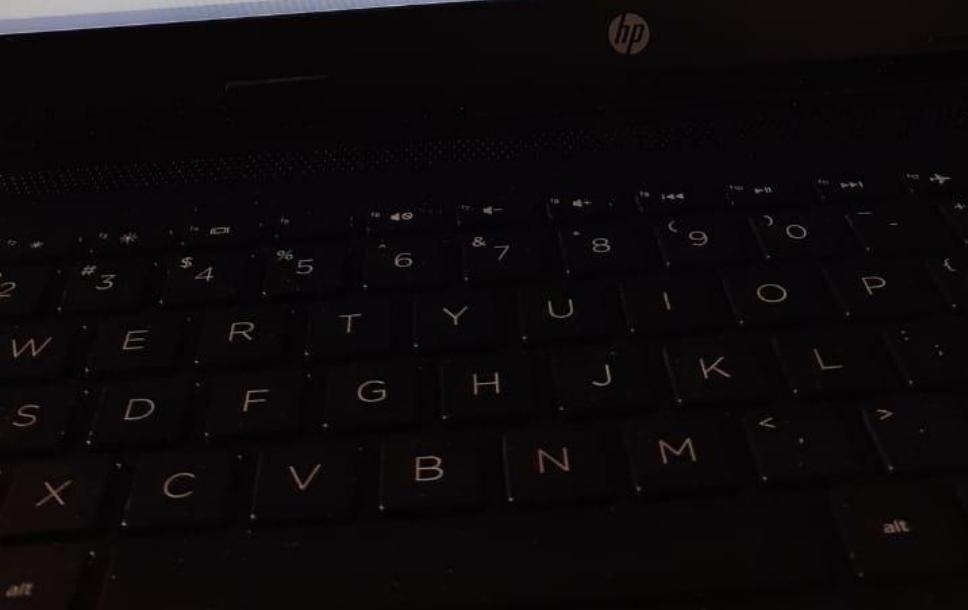
EmployeeKey	EmployeeLastName	EmployeeFirstName	ProjectName	ProjectDescription
4123	Brown	Richard	DB245	New Employee Database
4124	Sanderson	Lisa	DB134	Tune the point of sale database
4215	Lewis	Wallace	DB245	New Employee Database

When considering the above table, a project which has not been assigned any employees yet, cannot be entered into the table because it will lead to a value in the Primary Key column. This is an example for a/an anomaly.

Suppose the project name of project DB245 was changed by management. When the database is updated all the project names were changed except for Lewis. Now if someone queries the database it would look like Lewis and Brown are working on different projects. This is an example of a/an anomaly.

For instance, if Lisa Sanderson were to quit and be removed from the table, we would also lose all information about the project DB134. This is an example of a/an anomaly.

The standard process used to handle the above issues is known as and it is based on a set of forms.



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Select the correct answer when map the Movie entity to relational model

```
graph TD; Movie[Movie] --- ID((ID)); Movie --- name((name)); Movie --- year((year)); Movie --- language((language))
```

Select one:

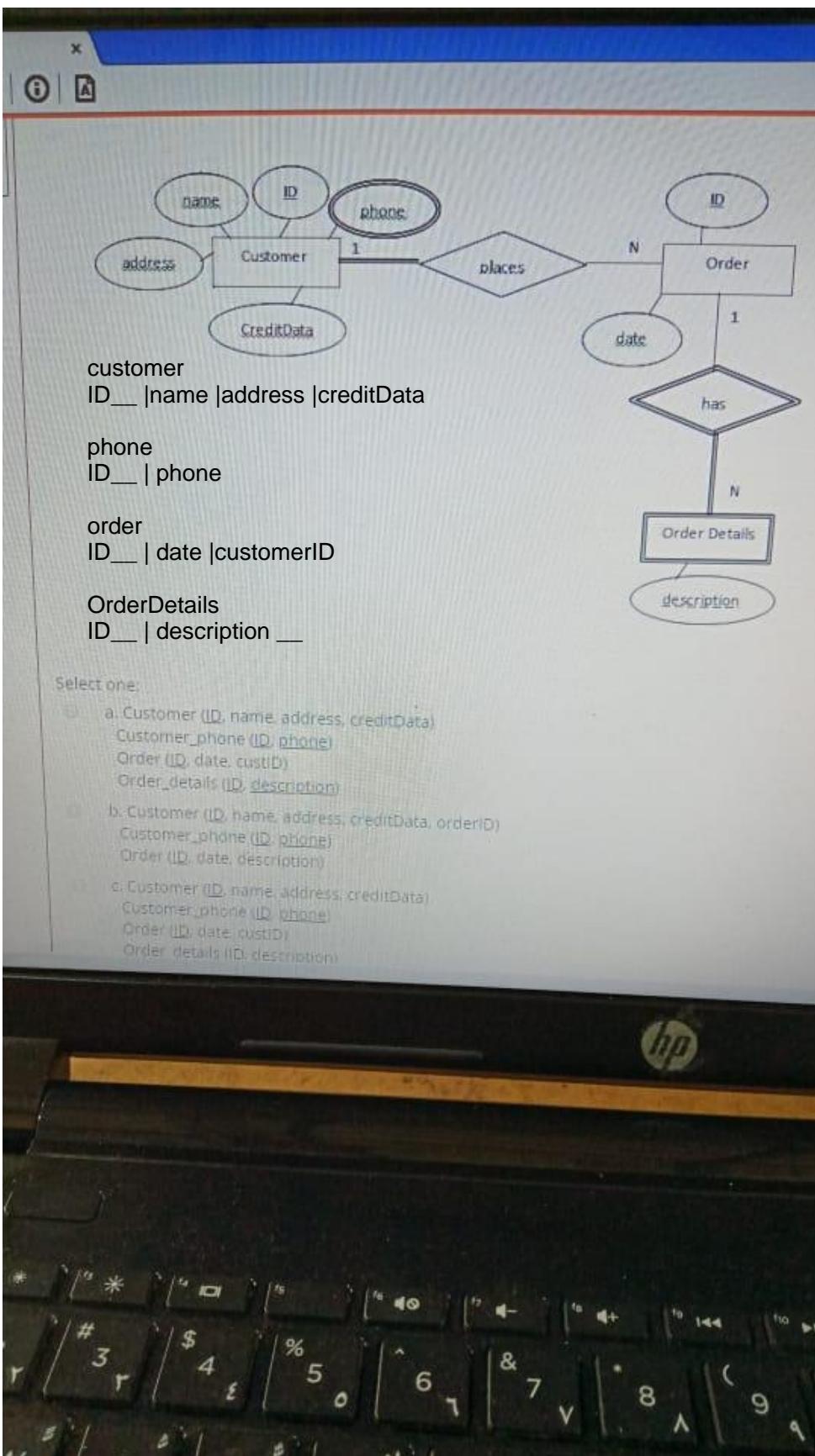
- a. Movie (ID, language, name, year)
- b. Movie (ID, name, year, language)
Movie_language (ID, language)
- c. Movie (ID, name, year)
Movie_language (ID, language)
- d. Movie (ID, name, year, language)
- e. Movie (ID, name, year)
Movie_language (ID, language)

Select the correct statement/s regarding the **database administrative tasks**.

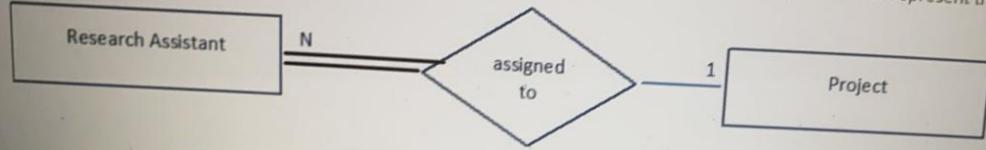
Select one or more:

- a. Issuing different usernames for different users is categorised under performance based tasks.
- b. Being able to view the summary of profits of the company for the last 10 years is categorised under Performance based tasks.
- c. Allowing a manager to view the monthly sales figures of his organization is categorised under Security tasks.
- d. Implementing a mechanism to change passwords of the users monthly is categorised under Security tasks.
- e. Reducing the response time of a query is categorised under Performance tasks.

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Apply your knowledge on Conceptual modeling and select the correct answer for the following questions, to represent the below scenario.



1. "assigned to" is in participation from Research Assistant entity to Project entity.
2. Research Assistant can be assigned to Project/s
3. The relationship "assigned to" is a relationship.

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EXAM

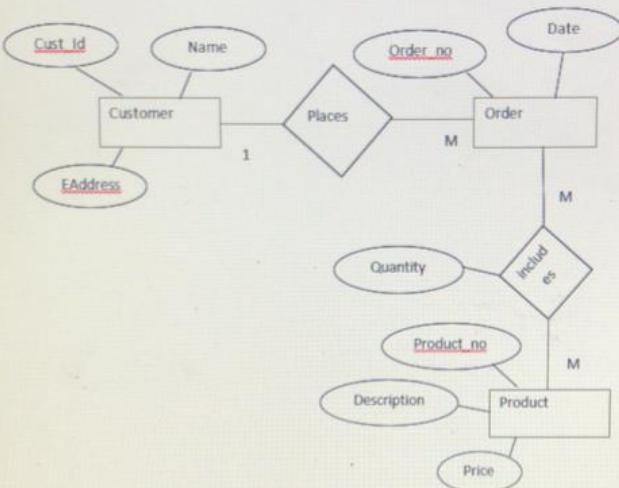
17

EXAM

18

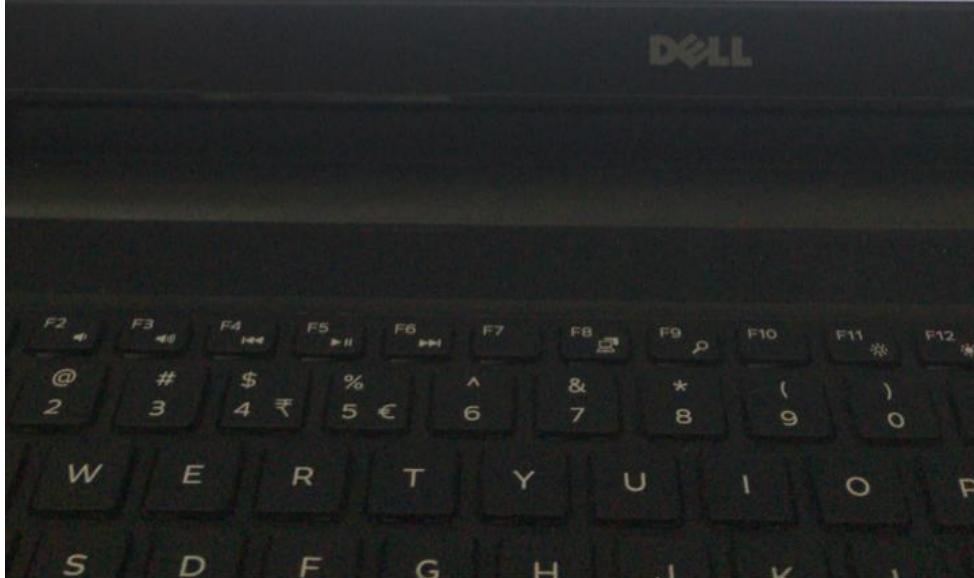
EXAM

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Select one or more:

- a. We can find the total quantity ordered from each product using a database created with this design
 - b. The degree of all relationships are two
 - c. We can find the name of the company which has produced a particular product; using a database created with this design
 - d. We can find the total value of products sold on a given date, using a database created with this design
 - e. Quantity is a Derived attribute



Moodle

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Question 8
Not yet answered
Marked out of 3.00
Flag question

Select the correct statement/s regarding the **database administrative tasks**.

Select one or more:

- a. Implementing a mechanism to change passwords of the users monthly is categorised under Security tasks.
- b. Being able to view the summary of profits of the company for the last 10 years is categorised under Performance based tasks.
- c. Allowing a manager to view the monthly sales figures of his organization is categorised under Security tasks.
- d. Reducing the response time of a query is categorised under Performance tasks.
- e. Issuing different usernames for different users is categorised under performance based tasks.

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it20615048 Rasanjith

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Question 20
Not yet answered
Marked out of 00
Flag question

Following description and the schema is about a company which sells food items online. Analyze them and answer the questions.

- Table **Item** contains items available. Attribute Description describes the item. Attribute Picture contains an URL of a picture of the item.
- Table **Ingredient** contains the materials used in an item.
- Items may be sold in different size of portion. These sizes are defined in table **ItemType**. Each item has different model identifiers (ModelID). ModelID has values like 'BIG', 'SMALL', etc. The price of an item depends on the size.
- Table **Contents** describes what ingredients comprise the item.
- Table **Customer** contains customer data. Customers have numeric identifiers. Areacode indicates the area within the city. The format of Areacode has only 3 digits like A01, A02, B01, etc. Phone numbers and email-addresses are text fields. A customer must specify a phone number for contact.
- Table **Order** contains information about the Orders. Orders have numeric identifiers. The time the order was made is recorded in column Whenmade. Column CustomerID contains the identifier of the customer that made the order. Attribute WayIssused defines the media used in placing the order. It can be only through phone or email. PaymentBy defines how the order is to be paid or has been paid. Only credit card or cash method is allowed. TotalPrice determines the amount to be paid.
- Table **ItemOrdered** defines what has been ordered. The attributes itemID and ModelID identify the form of item ordered, and Quantity specifies the number of units ordered.

Diagram illustrating the relationships between the tables:

```
graph TD; Item[Item (itemID, itemName, description, picture)] --> ItemType[ItemType (itemID, modelID, price)]; ItemType --> Contents[Contents (itemID, ingredientID)];
```

LEGION

