**Boot Camp/Mid-Term Exam Spring 2024 - Teacher:**

**Ankur Jain**

**Submission Deadline: March 10,2024, by 3:00PM**

**Topics: SDLC, Manual Testing, Database – MYSQL, ALM, Basic Computer Knowledge, Manual Web Testing, STLC, Agile, Waterfall**

# Weekend-Day Batch Date: 03/10/2024.

**Submission Instructions:**

1. **Save all your responses in a MS Word & Excel document.**

**Filename:**

**“Ankur Jain – Sprint2024 Bootcamp – Last 6 digits of Student ID”**

**Email Process:**

[**ankur@piit.us**](mailto:ankur@piit.us)

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**Email Subject Line: “Ankur Jain – Spring2024 Bootcamp – Last 6 digits of Student ID**

**Contact Information:**

**Ankur**

**510-495-5775**

**Topic: Database – MYSQL – Practical & Theory**

**Minimum: 2-3 lines explanation needed for each question**

**Minimum Answer– 10 Questions out of 38 Questions**

**1:00 Hour**

1. **What are the core tables in our Walmart-like database?**

**Categories, Orders, Products, Customers, OrderItems**

1. **Explain the purpose of the Categories table.**

**Categories table with categoryId that has PK is connected to products table , because they both share that categoryId pk. The code is bellow**

**create table Categories (**

**Category\_Id int Primary key,**

**Category\_Name varchar (100) not null**

**);**

1. **How are products categorized in the Products table?**

**ProductId in products is the pk sharing it as FK on cartItems table, that means any time you make a change in productid within the products table that would affect the productid as a FK in cartItems table. The code is bellow**

**Create table Products (**

**Product\_Id int Primary key,**

**Category\_Id int,**

**Product\_Name varchar (200) not null,**

**description text,**

**Price Decimal (10, 2) not null,**

**foreign key (Category\_Id) references Categories(Category\_Id)**

**);**

1. **What is the significance of the CustomerID in the Customers table?**

**It is the FK in orders table, that means they share the key that means anytime we make a change in customers table, we can further use it in orders table, in other hand if we try to use unexisting ordereid in orders table. The code is below**

**create table Customers (**

**Customer\_Id int primary key,**

**First\_Name varchar (50) not null,**

**Last\_Name varchar (50) not null,**

**Email varchar (100) not null unique**

**);**

1. **Describe the relationship between the Customers and Orders tables.**
2. **What information does the ShoppingCarts table store?**

**It mainly stores shippingID as a PK and orderId as FK from orders table. The code is below**

**create table ShoppingCart(**

**CartId int primary key,**

**Customer\_Id int,**

**createdAt timestamp default current\_timestamp,**

**foreign key (Customer\_Id) references Customers(Customer\_Id)**

**);**

1. **Explain the purpose of the OrderItems table.**

**It mainly connects the orders table and products table, the code is bellow**

**create table Orders (**

**Order\_Id int primary key,**

**Customer\_Id int,**

**Order\_Date timestamp default current\_timestamp,**

**Total\_Amount decimal (10, 2) not null,**

**foreign key (Customer\_Id) references Customers(Customer\_Id)**

**);**

1. **How can you retrieve the list of all products along with their categories?**
2. **What does the FOREIGN KEY constraint in the Products table indicate?**

**It is categoryId from categories table, and any time we make a change in categories table then we can use it in products table**

1. **How would you find out which customers have not placed any orders?**

**select \* from Orders;**

**select \* from Customers**

**where Customer\_Id not in (select distinct Customer\_Id from Orders);**

1. **What is the purpose of the TotalAmount column in the Orders table?**

**Is the total amount of the order made by a given customer**

1. **How can you retrieve the top 5 customers with the highest total spent?**

**select Customer\_Id, First\_Name, Last\_Name, Total\_spent**

**from (select Customer\_Id, sum(Total\_Amount) as Total\_spent**

**from Orders**

**groupby Customer\_Id**

**orderby Total\_spent desc**

**limit1;**

1. **Explain the use of the LIMIT clause in a SQL query.**
2. **What kind of information is stored in the CartItems table?**

**It stores all cartitemid, cartid, productid,and quantity, the code is bellow**

**create table Cart\_Items(**

**Cart\_Item\_Id int primary key,**

**Cart\_Id int,**

**Product\_Id int,**

**Quantity int not null,**

**foreign key (Cart\_Id) references ShoppingCart (CartId),**

**foreign key (Product\_Id)references Products (Product\_Id)**

**);**

1. **How do you update the stock quantity of a specific product?**
2. **What is the significance of the PRIMARY KEY constraint in a table?**

**A PK is the main id in a given table that is used as FK in another table that connects both**

1. **Can you provide an example of a query that retrieves products priced between $50 and $100?**

**select \* from Products**

**where Price = '50' and ‘100’ ;**

1. **Explain the concept of a correlated subquery and provide an example.**
2. **How would you delete a specific product from the Products table?**

**20.                In which language MySQL has been written?**

**21.                What is SQL?**

**SQL is a domain specific language used to manage and manipulate relational data basis. It provides a standardized way to interact with database to perform tasks like as a query, data, inserting data from database**

**22.                What are the differences between DDL, DML and DCL in SQL?**

**23.                How to print duplicate rows in a table?**

**24.                What is a Database?**

**25.                Does SQL support programming language features ?**

**26.                What are the differences between SQL and PL/SQL?**

**27.                Write an SQL query to find names of employee start with ‘A’?**

**28.                What is an index?**

**29.                What are the technical specifications of MySQL?**

**30.                What is the difference between MySQL and SQL?**

**31.                What is the difference between database and table?**

**Tables are within the database**

**32.                What are the disadvantages of MySQL?**

**33.                What are the advantages of MySQL in comparison to Oracle?**

**34.                Write a SQL statement to create a simple table countries including columns country\_id,country\_name and region\_id.**

**create table countries(**

**country\_id int primary key,**

**country\_name varchar ,**

**region\_id int**

**);**

**35.                Write a SQL statement to create a simple table countries including columns country\_id,country\_name and region\_id which is already exists**

**36.                Write a SQL statement to create the structure of a table dup\_countries similar to countries.**

**37.                Write a SQL statement to create a duplicate copy of countries table including structure and data by name dup\_countries.**

**38.                Write a SQL statement to create a table countries set a constraint NULL.**

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