Questions to solve

**Questions:**

1. **String Functions Question:**

Write a SQL query to list all customers from the customer table whose first name starts with the letter 'A'. The query should also include a new column named Name\_Length that shows the length of their first name. Use a WHERE clause to filter the results.

1. **Math Functions Question:**

Retrieve the replacement\_cost from the film table. Create a new column Cost\_With\_Tax that includes the calculated tax for each film (assume a tax rate of 10%). The query should only include films where the original replacement\_cost is more than 20.00.

1. **Date-Time Functions Question:**

From the rental table, fetch all rentals that occurred in 2005. Display the rental\_id, the rental\_date, and a new column Return\_Due\_Date which is 3 days after the rental\_date. Use a WHERE clause to limit to the year 2005 only.

1. **Combined Functions Question:**

For each payment in the payment table, display the payment\_id, amount, and a new column Payment\_Category. The Payment\_Category should classify each payment as 'Low' if the amount is under 5.00, 'Medium' if the amount is between 5.00 and 15.00, and 'High' if the amount is more than 15.00. Use CASE WHEN in your query.

1. **Advanced String Functions Question:**

Write a SQL query to find all films from the film table where the film title ends with the word "Agent". For each film, display the film title and a new column Title\_Length showing the length of the title.

1. **Complex Math Functions Question:**

From the inventory table, calculate the total number of items available per film. Assume each entry in the table represents an available item. Display the film\_id and the total count, but only for films with more than 5 items in inventory.

1. **Date Manipulation Question:**

Query the staff table to list all staff members who have been updated in the database after January 1, 2006. Show the staff's first name, last update date, and a new column Days\_Since\_Update that shows the number of days from the last update to today.

1. **Aggregated Data with Math Functions:**

Generate a report from the payment table that shows the average payment amount for each customer. Display the customer\_id and the average amount, but only include customers who have made payments totaling over 100.

1. **String and Date Combined Functions Question:**

In the customer table, find all customers whose first name contains the letter 'e' and who have created their account in the year 2005. Display the customer ID, first name, and account creation date.

1. **Nested CASE WHEN Usage:**

For each film in the film table, categorize the rental rate into 'Cheap', 'Moderate', or 'Expensive'. Films with a rental rate less than 2 are 'Cheap', between 2 and 4 are 'Moderate', and more than 4 are 'Expensive'. Display the film title and its category.

1. **Complex Date-Time and String Functions Question:**

From the rental table, identify all rentals where the rental date was on a weekend (Saturday or Sunday). Show the rental ID, rental date, and a new column Weekend\_Rental that flags these as 'Yes'.

1. **Group By Aggregation Question:**

Write a SQL query to find the total number of films in each rating category from the film table. Display the film rating and the count of films, but only include categories with more than 10 films.

1. **Customer Segmentation Question:**

From the payment table, calculate the total payment amount for each customer. Display the customer\_id and total payments, but only for customers whose total payment exceeds 200.

1. **Inventory Distribution Question:**

Query the inventory table to count the number of inventory items available in each store. Display the store\_id and the inventory count, but only for stores that have more than 50 items.

1. **Film Duration Category Analysis:**

In the film table, classify films into duration categories: 'Short' (less than 60 minutes), 'Medium' (60 to 120 minutes), and 'Long' (more than 120 minutes). Display the duration category and the average replacement cost for each category, but only for categories where the average cost is more than 15.