**Assignment for Python – Backend Developer**

In this assignment, you are required to contemplate a back-end structure for a hypothetical project and come up with SQL Table Structures which you suppose fulfills the requirement.

Consider you’ve been assigned a **‘CRM’** project where the Dashboard has the following features:

1. Role Based Login – Manager/Agent. Where Manager is the top-level Role, and multiple Agents can be assigned to a single Manager. (One-to-Many mapping)  
   Additionally, all users will have a field ‘branch’ – the branch of Agent can be different from the branch of Manager he is assigned to.
2. Customer List – On this Screen, an Agent will be able to see list of all customers who has been assigned to him, along with the following details:
   1. Unique Customer ID
   2. Customer Name
   3. Customer Email
   4. Customer Phone
   5. Subscribed Product (Consider an Integer Value between 1 and 5)
   6. Last Activity Status (Consider an Integer Value between 1 and 10 for different possible Enum statuses)
   7. Last Activity Date (performed by Agent)
   8. Assigned Agent (Column available only for Manager Login)

For the Manager login, the user will be able to view all the customers who has been assigned to the Agents who are working under the logged-in Manager.  
(Note: Customers are only assigned to Agents, and not Managers)

1. Customer Details – On this screen, the users will be able to view Complete Customer details, along with a list of Activities which have been performed by the agent for the selected customer.  
   There are 10 different activities that can be performed. Moreover, there can be three “type” of activity (for all 10 statuses) namely – Alpha/Beta/Gamma  
     
   The Activity List will have the following visible fields:
   1. Activity Date-time
   2. Activity Type
   3. Activity Status
   4. Comments (Optional)
2. Agent Analysis – On this screen the Manager will be able to view some Analytics based on two modes:
   1. Agent-wise Analytics (Where he will be able to view analytics of all agents working under him)
   2. Branch-wise Analytics (Where he will be able to view analytics of all the agents present in same branch as him – regardless of if they are working under him or not)

The analytics will have the following data-points:

* Agent-wise Analytics:
  + Agent Name
  + No. of Assigned Customers
  + No. of Customers Contacted in current month
  + No. of Customers with latest Activity Status as ‘3’
  + Last Activity Date
* Branch-wise Analytics:
  + Total no. of customers assigned to branch
  + Total no. of customers contacted in current month
  + Total no. of customers with latest Activity Status as ‘3’
  + List of customers who has not been contacted since 3 months.

You are required to come up with an SQL Database structure – along with:

1. Table Names
2. Required Columns
3. Data-Type for every Column
4. Required Primary Keys & Mapping between data-points.

Please ensure consistency, cleanliness and efficiency when choosing your column names & types.