Monthly Bill Generator – Python Assessment

# Objective

The purpose of this task is to build a Python-based Monthly Bill Generator. The generator processes customer service subscription data, filters services that were active during a specific month and year, and then calculates and displays the total monthly revenue per customer.

# Coding Procedure

* 1. \*\*Import Required Libraries\*\*: Import pandas for data handling and datetime for date manipulation.
* 2. \*\*Define Input Data\*\*: Create a dictionary containing service subscription details including customer ID, service name, start date, end date, and monthly price.
* 3. \*\*Convert to DataFrame\*\*: Convert the dictionary to a pandas DataFrame for easier data operations.
* 4. \*\*Date Formatting\*\*: Convert 'StartDate' and 'EndDate' columns to datetime format using `pd.to\_datetime()` to facilitate comparison.
* 5. \*\*Define Function to Generate Monthly Bill\*\*:  
   - The function `generate\_monthly\_bill(df, year, month)` filters services that were active in the specified month.  
   - It checks whether each service's start and end dates overlap with the billing month.  
   - Services with no end date are considered ongoing.
* 6. \*\*Filter Active Services\*\*: Use logical conditions to filter services active during the specified billing month.
* 7. \*\*Calculate Total Monthly Revenue\*\*: Group the active services by customer and sum the monthly prices.
* 8. \*\*Return and Print Result\*\*: Display the result showing total monthly bill per customer.