Pseudocode for Lab3

-Arnav A Bhalgat

Aim for the Lab: ***Prolet*** will calculate for the user the expected per-capita GDP in a given quarter of a given year.

1. Initialising the constants that will be used throughout the program:
    a. quarters_per_year
    b. epoch_year
    c. quarters_since_year0
    d. epoch_quarter

2. Taking the inputs for the application (Using the get_int() function)
   { *Prolet* will prompt the user for a quarter (first, second, third or fourth) and a year (e.g., 2025) }

    a. Enter the year for calculation (int) [four digit integer]
    b. Enter the quarter for calculation (int) {1, 2, 3, 4}

3. Making the necessary calculations for calculating quarters since epoch.
   { Based on that input, *Prolet* will make some calculations and produce an estimate of the (working-age) per-capita GDP in the user's chosen quarter and year.}

    a. Finding quarters since year 0 up to 1977 and saving it as a const.
    b. Calculating the number of quarters from year 0 to the specified year and quarter.
       (calculated quarters = year*4 + (quarter-1))

    c. Subtracting the calculated quarters with the constant quarters value to get the quarters since epoch.

4. Finding the projected contribution to GDP per working-age person.
    a. Use the function – calculate_per_capita_gdp_estimate()

5. Format the output.
    a. Use the function – quarter_to_ordinal()
    b. Use the function – format_money()

6. Print the output.
    a. Return the values as specified and in the correct format using all the functions.

Critical Thinking Task

-Arnav A Bhalgat

A repairing shop's signboard can be compared to a function as it displays the services they offer (e.g., "TV Repair", "Cell-Phone Repair", "Computer Repair"). All of these services are analogous to individual function. This is declaring a function as the shopkeeper has to first set up the shop before offering the services. Then, saying that I want to repair my computer is similar to calling a function. Furthermore, providing specific details about the issue or about the repair is like passing parameters to a function to expect a specific output with those arguments.
Finally when the device is repaired and returned to the customer with the cost of repair (bill) is the return value for that function.

In this analogy, the repair shop represents the function itself, the services offered are the function declarations, the specific issues with the devices are the parameters, bringing the device to the shop is the call, and receiving the fixed device is the return value.

Credits: ‘Google AI studio’ for ideating a scenario for which I can expand on and relate the working of functions