DSCI 510: Principles of Programming for Data Science
Spring 2024
Lab 2 Assignment
Due: 26 Jan 04:00 PM PT

Q1. Print Educational Details [10 points]

- Write a Python Script to print your major and expected year of graduation, separated by a comma.
    - Function Signature:
        - **def education_details(major, graduation_year)**
    - Arguments:
        - **major**: variable of type str
        - **graduation_year**: variable of type int
    - Returns:
        - print the details with format as "<major>, <graduation_year>". For example, “Computer Science, 2025”

Q2. Convert Hourly Wage to Annual Salary [10 points]

- Write a program that contains a function that calculates annual salary based on hourly wage and average weekly hours worked.
    - Function Signature:
        - **def yearly_allowance(hourly_wage, weekly_hours, weeks_per_year)**
    - Arguments:
        - **hourly_wage**: variable of type float
        - **weekly_hours**: variable of type int
        - **weeks_per_year:** variable of type int
    - Returns:
        - Return the result of type **int** (If the result is float value, convert to int)

- Also write a function that converts this salary to British Pounds. Declare a (global) variable for the conversion rate, called **usd_to_gbp**, and use it in the function. Assume 1 British Pound is equal to 1.25 USD.
    - Function Signature:
        - **def conversion_to_british_pound(usd_amount)**
    - Arguments:
        - **usd_amount**: variable of type int
    - Returns:
        - Return the result of type **float** and round it to **1** decimal place. For example, if the final result is 14.7654, then it will round to 14.8

- Invoke the functions in a Python script with the following inputs:
    - hourly_wage = 15
    - weekly_hours = 40
    - weeks_per_year = 52

Q3. Calculate and Compare Profits [10 points]

- Write a function that, based on given daily profit calculates the annual profit
    - Function Signature:
        - **def yearly_profit(daily_profit, days_per_year)**
    - Arguments:
        - **daily_profit**: variable of type int
        - **days_per_year:** variable of type int
    - Returns:
        - Return the result of type **int**

- Write a function that compares the current annual profit with the previous year's annual profit and determine the percentage increase or decrease. The function should return a string with the percentage profit or loss based on the calculation, for example, “32% profit” or “17% loss”
    - Function Signature:
        - **def percentage_change(current_profit, previous_profit)**
    - Arguments:
        - **current_profit**: variable of type int
        - **previous_profit:** variable of type int
    - Returns:
        - Return string in format **“17.08% profit”** or **“32.07% loss”** (round to 2 decimal places)

- Use these functions in a script with the following data:
    - daily_profit = 250
    - days_per_year = 365
    - previous_profit = 60000