COSC 1337 – Fundamentals of Programming

Project Assignment #4- Employee Income Tax Calculator

Objective:
Write a C++ program that records and analyzes weekly pay for AllyBaba Automotive Group. There are 25 employees in the company.

Requirements

- **Prompt for Total Number of Employees**
  - The user will be asked to enter how many employees they want to process.
- **Collect Employee Information**
  - For each employee, prompt the user to enter the following:
    - **Employee ID Number** (integer)
    - **Employee Name** (string – allow spaces)
    - **Pay Rate per Hour** (floating-point value)
    - **Type of Employee** (0 for Union, 1 for Management)
    - **Number of Dependents** (integer, range: 0 to 10)
- **Collect Timesheet Information**
  - For each employee, after entering their details, prompt the user to enter:
    - **Number of Hours Worked This Week** (floating-point value)

- Calculations
  - Gross Pay
    - Union members are paid their normal pay rate for the first 40 hours worked, and for overtime hours, they are paid1.5 times their normal pay rate for any hours worked over 40.
    - Management employees are paid their normal pay rate for all hours and for overtime hours, but they are paid they are paid at their normal hourly rate).

  - Income Tax
    - All employees pay income tax based on the following distribution chart

# Of dependent	Tax Rate (%)
0 to 2	30%
3 to 5	20%
Above 5	10%

  - Net Pay
    - Gross Pay minus Income Tax.

Input validation

- The input should be checked for reasonable values. If a value is not reasonable, your program should print an informative error message and ask the user to re-enter the value.
- Th following data should not be blank
  - name

- The following data should be positive numbers (greater than 0)
  - employee id
  - pay rate
- The following data should be non-negative (0 or larger)
  - hours worked
  - Employee type should be 0 or 1
  - # of dependents between 0 and 10

Output Requirements

- The payroll report should be formatted in a tabular (row and column) format with each column clearly labeled with a column heading.
- All dollar amounts should be formatted with 2 decimal places.
- Note: do not use tabs between the columns - use the setw manipulator to set the column width so that you can line up columns of numbers on the decimal point.
- Print one line for each transaction that contains:
  - employee ID number
  - name
  - gross pay
  - income tax
  - net pay
  - The payroll summary report should print the total amount of gross pay and total amount of net pay for the week for all employees.

Other Requirements

- Global variables are variables that are declared outside any function. **Do not use global variables in your programs.** Declare all your variables inside functions.
- Create and use a struct to hold the general employee information for one employee.
  - Use an array of structs to hold the employee information for all employees.
  - You should use a struct to represent the employee information for each employee.
  - **Note:** you should NOT include Timesheet information in this struct. Timecard information may change from one pay period to the next while employee information usually does not. In other words, an employee's information and information about a specific paycheck are 2 different things and logically should not be combined in the same struct (or object).
- The timesheet information (hours worked) does not need to be stored in an array.

- Your program should first input the employee master information into an array of structs. Then use a separate loop to do the payroll processing for each employee (input the employee's hours worked and calculate their pay).

- **Note:** Use the C++ **string** class for the employee's name.
- **Warning:** Input using the extractor operator (">>") is simple. However, when you mix the extractor operator with the getline function, things get tricky.

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Sample Output
(User entry is in RED)

```
Project #4
Written by: Ally Baba

AllyBaba Automotive Group
-----------------------------------------------
        Number of payrolls to be processed: 4
-----------------------------------------------

        Employee #1
                Employee id: 22
                Employee name: Cindy Burke
                Pay rate: $15.00
                Type: 0
                Dependent: 2
        -----------------------------------------------
        Employee #2
                Employee id: 42
                Employee name: J. P. Morgan
                Pay rate: $12.50
                Type: 0
                Dependent: 1
        -----------------------------------------------
        Employee #3
                Employee id: 41
                Employee name: Sue Kim
                Pay rate: $14.50
                Type: 0
                Dependent: 0
          -----------------------------------------------
          Employee #4
                Employee id: 45
                Employee name: Ernest Chavez
                Pay rate: $20.0
                Type: 1
                Dependent: 2
        -----------------------------------------------

          Timesheet information:
                Hours worked for Cindy Burke: 40.0
                Hours worked for J. P. Morgan: 39.5
                Hours worked for Sue Kim: 45.0
                Hours worked for Ernest Chavez: 41.0
```

Project Assignment #4- Employee Income Tax Calculator

Summary: Payroll Report

Number of Employee processed: 4

ID	Name	Gross Pay	Tax	Net Pay
22	Cindy Burke	600.00	180.00	420.00
42	J. P. Morgan	493.75	148.13	345.62
41	Sue Kim	688.75	206.63	482.12
45	Ernest Chavez	820.00	246.00	574.00
	Total Gross Pay	$2602.50		
	Total Net Pay	$1911.74		

End of Project 4