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////////////////////////////////////
// Program Name:          payroll.cpp
//
// Programmer:            Kent Swartz
// Submitted By:          Kent Swartz
// Compiler:              MS Visual C++ v5.0
// Date:                  January 12, 1998
//
// Description:           This program reads in the employee number,
//                          number of hours and the (hourly) rate to
//                          compute the gross salary, which is the
//                          regular salary plus the overtime salary.
//                          For the hours over 40.0. the employee gets
//                          paid double. There is a tax withholding if
//                          the gross salary is more than $200.00. The
//                          take-home salary is equal to the gross salary
//                          minus the tax withholding.
//
// Input:                 For each employee, the employee number,
//                          number of hours the employee worked and
//                          employee's hourly pay rate.
//
// Output:                 For each employee, print the input data and
//                          then print the take-home pay amount and tax
//                          withheld.
////////////////////////////////////

#include <fstream.h>                // for file I/O
#include <iomanip.h>                // allows use of setw and setprecision

void main()
{
    const double TAXLIMIT      = 200.00; // Pay more than this is taxed
    const double WITHHOLDING   = 50.00; // Tax that is withheld
    const double MAX_HOURS     = 40.0;  // Maximum normal work hours
    const double OVERTIME      = 2.0;   // Overtime pay rate factor

    double  hours,              // number of hours worked
            rate,               // the rate for the employee
            gross_pay,          // pay before taxes withheld
            take_home,          // pay after tax is withheld
            tax_paid;           // amount of tax withheld, if any
    int     EmployeeID;         // ID number of current employee

    ifstream in_payperiod;      // input file stream
    ofstream out_payroll;       // output file stream

    in_payperiod.open("asgn1.in"); // open input file
    if (!in_payperiod)
    {
        cout << "*** Can't open input file ***" << endl;
        return;
    }

    out_payroll.open("asgn1.out"); // open output file
    if (!out_payroll)
    {
        cout << "*** Can't open output file ***" << endl;
        return;
    }

    out_payroll.setf(ios::fixed, ios::floatfield); // turn on manipulators
    out_payroll.setf(ios::showpoint);

    // Read first line of input file:
    // There is an assumption made in this program that the data file has
    // been setup correctly to input the correct data types.
    in_payperiod >> EmployeeID >> hours >> rate;

    // Write the header to the output file
    out_payroll << "Employee Id      Pay Rate      Hours Worked      ";

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out_payroll << "Net Pay    Tax";
out_payroll << endl;
out_payroll << "-----";
out_payroll << "-----";
out_payroll << endl;

// Loop through each successive line of input data from the
// input file until all lines have been read.
while (in_payperiod)
{
    // Calculate gross pay: Overtime is any hours over
    // MAX_HOURS. Employees are paid wage * OVERTIME for all
    // overtime hours.
    if (hours > MAX_HOURS)
        gross_pay = (MAX_HOURS * rate) +
                    (hours - MAX_HOURS) * rate * OVERTIME;
    else
        gross_pay = hours * rate;

    // Calculate the take home pay, if gross pay is greater than
    // TAXLIMIT then withhold the value WITHHOLDING from gross pay.
    if (gross_pay > TAXLIMIT)
    {
        take_home = gross_pay - WITHHOLDING;
        tax_paid = WITHHOLDING;
    }
    else
    {
        take_home = gross_pay;
        tax_paid = 0.0;
    }

    // Write out the input and calculated data for each employee
    out_payroll << setw(5);
    out_payroll << EmployeeID;
    out_payroll << "          ";
    out_payroll << setw(5) << setprecision(2);
    out_payroll << rate;
    out_payroll << "          ";
    out_payroll << setw(5) << setprecision(2);
    out_payroll << hours;
    out_payroll << "          ";
    out_payroll << setw(7) << setprecision(2);
    out_payroll << take_home;
    out_payroll << "    ";
    out_payroll << setw(6) << setprecision(2);
    out_payroll << tax_paid;
    out_payroll << endl;

    // Try to read another line of input from file:
    in_payperiod >> EmployeeID >> hours >> rate;
}

// Close input and output files:
in_payperiod.close();
out_payroll.close();
}
////////////////////////////////////

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