// pgm6sol.cpp

// Produce employee salary report for multiple employees

#include <iostream>  // for cin, cout
#include <cstring>   // for strcmp()

using namespace std;

const double PAY_INCREASE1 = 0.076, // External declared constants
            PAY_INCREASE2 = 0.065;        // Function Prototypes

void output_welcome_message();  
void set_fp_precision();        
void input_employee_name(char name[]); 
void input_prev_salary(double& prev_sal);
void do_employee_processing(double prev_annual_sal, double& annual_sal_incr,
                             double& retro_pay, double& new_annual_sal,
                             double& new_monthly_sal, int& emp_count,
                             double& prev_sal_sum, double& new_sal_sum);
void output_employee_report(char emp_name[], double prev_annual_sal,
                             double annual_sal_incr, double retro_pay,
                             double new_annual_sal, double new_monthly_sal);
void output_summary_report(int emp_count, double prev_sal_sum,
                            double new_sal_sum);

int main()
{
    double prev_annual_sal,
            annual_sal_incr,
            retro_pay,
            new_annual_sal,
            new_monthly_sal,
            prev_sal_sum = 0.,
            new_sal_sum = 0.;
    int emp_count = 0;
    char emp_name[80];

    output_welcome_message();
    set_fp_precision();

    while (true)
    {
        input_employee_name(emp_name);
        if (!strcmp(emp_name, "end"))
            break;

        input_prev_salary(prev_annual_sal);
        do_employee_processing(prev_annual_sal, annual_sal_incr, retro_pay,
                               new_annual_sal, new_monthly_sal, emp_count,
                               prev_sal_sum, new_sal_sum);
        output_employee_report(emp_name, prev_annual_sal, annual_sal_incr,
                               retro_pay, new_annual_sal, new_monthly_sal);
    }
    output_summary_report(emp_count, prev_sal_sum, new_sal_sum);
    return 0;
}
void output_welcome_message()
{
    cout << "Employee Salary Reports for BigBucks Coffee\n\n" << "For each employee, you will be prompted to enter the name\n" << "and previous annual salary. To stop, enter end for the name.\n" << "\n\n";
}

void set_fp_precision()
{
    cout.setf(ios::fixed);
    cout.setf(ios::showpoint);
    cout.precision(2);
}

void input_employee_name(char name[])
{
    cout << "Enter employee's name: ";
    cin.getline(name, 80);
}

void input_prev_salary(double& prev_sal)
{
    cout << "Enter previous annual salary: ";
    cin >> prev_sal;
    cin.get(); // Remove \n from buffer
}

void do_employee_processing(double prev_annual_sal, double& annual_sal_incr,
    double& retro_pay, double& new_annual_sal,
    double& new_monthly_sal, int& emp_count,
    double& prev_sal_sum, double& new_sal_sum)
{
    if (prev_annual_sal <= 80000.)
        annual_sal_incr = PAY_INCREASE1 * prev_annual_sal;
    else
        annual_sal_incr = PAY_INCREASE2 * prev_annual_sal;
    retro_pay = annual_sal_incr * 0.5;
    new_annual_sal = prev_annual_sal + annual_sal_incr;
    new_monthly_sal = new_annual_sal / 12.0;
    emp_count++;
    prev_sal_sum += prev_annual_sal;
    new_sal_sum += new_annual_sal;
}

void output_employee_report(char emp_name[], double prev_annual_sal,
    double annual_sal_incr, double retro_pay,
    double new_annual_sal, double new_monthly_sal)
{
    cout << "Employee's name: " << emp_name
    << " Previous annual salary: " << prev_annual_sal
    << " Annual salary increase: " << annual_sal_incr
    << " Retroactive pay due the employee: " << retro_pay
    << " New annual salary: " << new_annual_sal
    << " New monthly salary: " << new_monthly_sal << "\n\n";
}
```cpp
void output_summary_report(int emp_count, double prev_sal_sum,
                            double new_sal_sum)
{
    cout << "Number of employees processed: " << emp_count
        << "Average of previous annual salaries: " << prev_sal_sum / emp_count
        << "Average of new annual salaries: " << new_sal_sum / emp_count
        << "\nEnd of Employee Salary Reports\n";
}

Sample Run:
Employee Salary Reports for BigBucks Coffee
For each employee, you will be prompted to enter the name
and previous annual salary. To stop, enter end for the name.
Enter employee's name: Jose Bartolo
Enter previous annual salary: 100000
Employee's name: Jose Bartolo
Previous annual salary: 100000.00
Annual salary increase: 6500.00
Retroactive pay due the employee: 3250.00
New annual salary: 106500.00
New monthly salary: 8875.00

Enter employee's name: Alice Kellenberger
Enter previous annual salary: 80000
Employee's name: Alice Kellenberger
Previous annual salary: 80000.00
Annual salary increase: 6080.00
Retroactive pay due the employee: 3040.00
New annual salary: 86080.00
New monthly salary: 7173.33

Enter employee's name: Pat Sweeney
Enter previous annual salary: 76000.34
Employee's name: Pat Sweeney
Previous annual salary: 76000.34
Annual salary increase: 5776.03
Retroactive pay due the employee: 2888.01
New annual salary: 81776.37
New monthly salary: 6814.70

Enter employee's name: end
Number of employees processed: 3
Average of previous annual salaries: 85333.45
Average of new annual salaries: 91452.12
End of Employee Salary Reports
```