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Introduction to C++ and OOP

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# Module 2: Payroll

## 3A: Documentation

The payroll system was expanded to allow the user to set the number of employees he or she would like to enter, and then to loop the program the number of times the user set. The was accomplished by adding a variable called counter and setting it to the value that was entered by the user. The program then asks for the employee data, prints the entered information to the screen, and decrements the counter variable by 1. The loop terminates when the counter reaches 0.

## 3A: Code

#include<iostream>

using namespace std;

main() {

int id, counter;

float hours, rate, grosspay, netpay, taxamount;

float const TAXRATE = .10;

cout << "HOW MANY EMPLOYEES DO YOU WANT TO ENTER? ";

cin >> counter;

cout << endl;

while(counter > 0){

cout << "ENTER EMPLOYEE ID (LAST 4 DIGITS OF SS#): ";

cin >> id;

cout << "ENTER HOURS WORKED: ";

cin >> hours;

cout << "ENTER HOURLY RATE: ";

cin >> rate;

grosspay = hours \* rate;

taxamount = grosspay \* TAXRATE;

netpay = grosspay - taxamount;

cout << endl;

cout << "EMPLOYEE ID: " << id << endl;

cout << "HOURS WORKED: " << hours << endl;

cout << "HOURLY RATE: " << rate << endl;

cout << "GROSS PAY: $" << grosspay << endl;

cout << "TAX RATE: " << TAXRATE << endl;

cout << "TAX AMOUNT: $" << taxamount << endl;

cout << "NET PAY: $" << netpay << endl;

cout << endl;

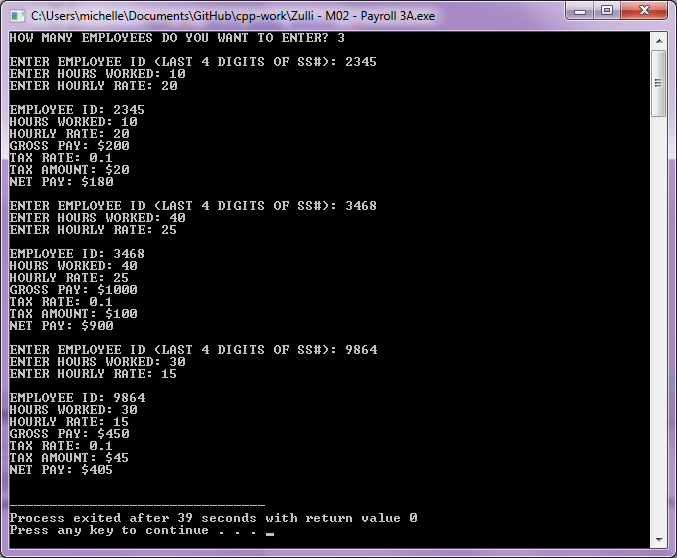
counter--;

}//WHILE

return 0;

}//MAIN

## 3A: Output



## 3B: Documentation

The payroll system was modified to use an input file and execute the loop for as many employees as are in the file. To do this, the an include statement was added for the fstream header file. Then, the counter variable was removed from the program and an ifstream object was created from the input file (“employee.in”). Finally, the loop condition was changed to loop through the input file assigning the values there to the program variables and terminate at end of file.

## 3B: Code

#include<iostream>

#include<fstream>

using namespace std;

main() {

int id;

float hours, rate, grosspay, netpay, taxamount;

float const TAXRATE = .10;

ifstream fin("employee.in");

while(fin >> id >> hours >> rate){

grosspay = hours \* rate;

taxamount = grosspay \* TAXRATE;

netpay = grosspay - taxamount;

cout << "EMPLOYEE ID: " << id << endl;

cout << "HOURS WORKED: " << hours << endl;

cout << "HOURLY RATE: " << rate << endl;

cout << "GROSS PAY: $" << grosspay << endl;

cout << "TAX RATE: " << TAXRATE << endl;

cout << "TAX AMOUNT: $" << taxamount << endl;

cout << "NET PAY: $" << netpay << endl;

cout << endl;

}//WHILE

return 0;

}//MAIN

## 3B: Output

