

**Computer Programming 106**  
**Project: Problem Solving**  
**Deadline December 31, 2009**

**Objective:**

**Solve a real problem**  
**Learn about data storage and**  
**Information Retrieval**

An IT company would like to calculate the weekly wages of its employees and the total payroll that the company pays every week (total payroll = sum of all the employees' wages). The normal worked hours per week for an employee is **40**. However, an employee can work more and get extra payment. Each employee is identified by an **empNum** number. He gets **payRate** for every normal hour, and **1.5 payRate** for every extra hour.

Write a C++ program that asks the users to enter the employees' numbers and calculate then their wages and the total payroll. The program stops whenever the user enters 0. It outputs a file that contains the following:

<b>empNum</b>	<b>payRate</b>	<b>hours</b>	<b>wages</b>
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**Example:**

**Enter employee number: 14569**

**Enter pay rate: 50**

**Enter hours worked: 45**

**Wage = 2375**

**Enter employee number: 18519**

**Enter pay rate: 60**

**Enter hours worked: 44**

**Wage = 2760**

**Enter employee number: 0**

Total payroll is = 5135

The output file should contain the following information:

14569	50	45	2375
18519	60	44	2760

Table of Data

empNum	payRate	hours	Wages
14569	50	45	2375
18519	60	44	2760
19345	100	40	?
20134	75	48	?
19834	55	52	?
12034	120	40	?
12304	35	62	?
12398	87	40	?
19230	67	43	?
32401	87	40	?

All data should be recorded into the file **payfile.dat**. Write then a program to read the file **payfile.dat** and displays then the content on the screen.

Find the following:

1. The employee who earns the highest salary. Give his number and wage.
2. Find the average wages of all employees.
3. Find the average payment per worked hour that the company pays.
4. Ask the company to enter its weekly income. See then if there is some deficit or benefit. Note that the company's expenses are salaries and indirect costs which represent 20% of the salaries.