Assignments - Big Picture

The assignments for this course will incrementally develop a billing and accounting system for the Small Consulting Group. The system that will automate the processes of billing clients and paying the consultants every month.

**Basics**

The Small Consulting Group delivers information systems consulting services to a variety of customers. The Group can provide Project Manager, System Architect, Software Engineer, and Software Tester skills. Each type of consultant skill is billed at a different basic rate, according to the following rate structure:

* Project Manager: $250/hour
* System Architect: $200/hour
* Software Engineer: $150/hour
* Software Tester: $100/hour

Consultants may be working for more than one customer at the same time. In the case of Staff and Principal consultants, they may also charge their non-billable time to an account called “Business Development”, which is time spent helping the Group obtain new clients.

**Processes**

The processes for billing clients and paying the consultants every month may only be performed by authorized persons. Details of these processes are as follows:

1. The consultant records her/his hours for the current week for each client on a time card. Staff and Principal consultants must also record sick leave, vacation, and holidays and “Business Development” hours for each week.
2. After obtaining the signature of the client representative, verifying the hours worked, the consultant sends the hours to the Small Consulting Group office manager.
3. The office manager records the billable hours worked by each consultant on each engagement, together with the rate at which the client(s) are to be billed. At this point, the office manager also records the “Business Development” hours for each Staff and Principal Consultant.

The business process for billing Small Consulting Group Clients is as follows:

1. The office manager directs the billing administrator to prepare invoices for each client.
2. The billing administrator prepares an invoice for each client, base on the billable hours recorded by the office manager. Each client invoice begins with the normal client name and address information at the top of the page. The invoice then contains a line item for each consultant who performed work for the client during the past month. Each line contains the consultant’s name, her/his billing rate, and the total bill for the consultant. The invoice ends with the total billed amount for the past month.
3. The billing administrator prints each invoice with a matching envelope, stuffs the envelopes, and mails the invoices.

The business process for paying consultants is as follows:

1. The office manager directs the payroll administrator to prepare the payroll checks.
2. The payroll administrator prepares a check for each consultant due compensation for the past month, based on the type of compensation plan for the given consultant, and the number of hours worked.
3. Each check must contain the name and address information for the consultant, the number of hours worked, the hourly rate, any overtime or bonus pay, the gross pay, any deductions, and the net pay.
4. Checks are not printed by the payroll administrator; the payroll data is sent to a check printing and mailing service for this purpose.

**Methodology**

Each of the assignments will require specific elements of the system to be developed. The design of the system is provided, the assignments will only require the implementation of the design.

For most assignment a driver program is provided. This program is intended for your use to verify the general correctness of your classes.