Design of Financial Accounting Module in Printing Enterprise Based on Web

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Abstract. In order to optimize the financial management process and improve the working efficiency of printing enterprise, a financial accounting module for bills is designed and realized. The web interface of system is realized through the technology of Java and JavaScript, adopting the development mode of browser and server (B/S), all information about bills are stored with SQL Server database. There are three functions including implementing, invoicing for bills, management for receipt and distribution of money for all invoices and receipts.

1 INTRODUCTION

With the development of enterprise and expansion of business scale, the financial problems are more serious. The process is complicated and easy to bring out trouble in traditional manual bookkeeping. Therefore, financial management plays a more important role in business scale. At present, manual accounting method is accepted in most of small and medium-size enterprise, the result of this is accumulation of paper bills and loss of important data. The worker will waste more time to organize bills, efficiency is lower [1].

Financial accounting refers to the management for different invoice and receipt in enterprise, which can effectively help enterprise meet the requirements of modern financial management. Compared with the traditional manual accounting method, the informatization and automation of financial work are the main advantages, in other words, the system can automatically complete the financial accounting according to the information of original vouchers. Therefore, it can achieve standardized management of financial information and strengthen the confidentiality and reliability of financial information [2].

In the enterprise's capital accounting, there are usually more bills problems. Based on these problems, the financial accounting module for bills are designed and implemented in this paper.

2 Demand analysis

This paper takes the accounting of bills in financial management as an example to illustrate the process from the issue of an invoice to the completion of collection and the related data is stored in the SQL Server database. The implemented functions included:

(1) Invoice is generated for different bills to realize the maintenance and checking of invoice information.
(2) Receipt is generated for checking invoice to realize the maintenance and checking of the collection information.
(3) The money of invoice and receipt is distributed automatically, when finished, the relevant information is stored in the bill table.

This paper introduces UML use case on the systems function analysis, shown in Figure 1.

![Figure 1. Use case diagram of financial accounting module](https://example.com/figure1.png)
系统设计

3.1 设计主要功能模块

该系统包括两个功能模块：发票管理和收据管理。

（1）发票中包含的信息主要来自核对单。当一张发票被增加时，系统会根据核对单的名称自动选择该核对单。这不仅有利于改善发票信息，还能减少工作人员寻找相同客户的核对单所需的时间，提高工作效率。

（2）发票被批准后，可以用做完成生产任务的证明，随后可以增加收据来管理收款信息。由于收款不能一次性完成，所以收据的数量无限制，收款金额会根据发票自动分配给核对单。

（3）所有经过审批的发票和收据的金额会被自动写入核对单，作为后续审核。具体过程如图2所示。

3.2 设计数据库

基本的目的是为了解决和处理企业信息系统的复杂数据信息的分析和处理，数据库设计是其基础。它负责提供适当的数据处理和存储程序[3]。因为系统涉及两种类型的文件，且这两种文件都有需要在审核完成后重写的信息，所以根据不同的需求设计了不同的数据库表。数据库表的结构和关系如图4所示。

4 系统实现

4.1 系统实现环境和技术

在系统开发过程中，选择 Durado7[5]作为平台。Durado7基于Eclipse，使用Eclipse作为系统开发工具。测试环境为Window OS。开发环境如表1所示。

| 需求名称 | 平台和工具 |
|---|---|
| 硬件平台 | 计算机 |
| 开发工具 | Eclipse |
| 开发语言 | Java, JavaScript |
| 编译环境 | Win7+JDK |
| 测试环境 | Win7+Chrome |
| 数据库 | SQL Server |

三层架构浏览器/服务器（B/S）在系统开发中被使用，包括了界面层、逻辑层和数据层。
application layer and data layer. During the development process, the financial accounting module is developed on the Eclipse platform using the Java language, and the software can be implemented on different platforms such as Windows, UNIX and Linux. Data information is managed by SQL Server database, it is a relational database management system, which integrates various types of Microsoft products and resources, provides a powerful visual interface, and has great significance in the rapid development of enterprise systems [4].

4.2 Business process implementation of financial accounting

The financial accounting module designed in this paper is mainly applicable to small and medium-sized printing companies. After receiving orders, systems will generate bills based on the materials, equipment and labour needed for production, including the total money of production, packaging and delivery. The finance department will issue invoice vouchers for all bills for the same customer, as well as the receipt vouchers for each invoice after the production task is completed, financial accounting sequence diagram design shown in Figure 5.

The specific implementation steps as follows:
(1) Generate qualified bills, which is a prerequisite for financial accounting. The system generates a bill based on the work order information provided by the business department, which includes the cost of materials required for production, packaging, as well as labour costs and transportation expenses required for delivery, that is, the total amount the customer needs to pay. At the same time, there may be multiple work orders from the same customer in the work order information base, and the system will generate different bills for this situation.
(2) Generate an invoice. After the production task is completed, the finance department opens an invoice, which is the receipt certificate. When the invoice is opened, the system will automatically add all the bill information of the customer to the invoice according to the customer information of the bill, and at the same time, the total money of the invoice will be automatically allocated to each invoice. When the invoice money allocated is the same as the bill money, it indicates that the bill is invoiced. If it is inconsistent, it will be redistributed when the invoice is reissued.
(3) Generate a receipt. Only the invoice has been completed and checked by manager, it can be added receipts. The total money of the receipt is also automatically allocated to each bill. When the money of receipt is the same as the bill money, the receipt is completed.

The main interface for system is shown in Figure 6, including two images and used to introduce the process of creating a receipt.
There are two parts in the first image. The upper parts contain the main information of invoices, all the invoices are checked by manager, in other words, only checking invoice can be added receipt. All information about invoice can be browsed by user, but can’t be modified. User can obtain required invoice by means of setting different conditions, including the date, client, invoice number and bill number. The lower parts contains the main information of receipts. Any invoice shown in the upper parts can be added one or more receipts, then the detail information can be added in the created receipt, all the information can be stored in database. If the receipt has no mistakes, it can be submitted for manager to check, or completed the process of collection, relevant information in bill table will be updated.

The detail information of invoice is shown in the second image, including the resource number, plan number and the detail income and expenditure.

5Conclusion

The financial accounting module based on web is designed and realized, which can generate invoices for different bills, and generate receipts for invoices that have been checked. And the functions of maintaining and checking invoice information and receipt information also are realized. At the same time, the invoice money and the receipt money are automatically allocated to the bill. The implemented system is suitable for small and medium-sized printing enterprise, which can improve the financial management level of enterprises, increase the work efficiency of staff members, and achieve effective management and storage of enterprise information, thereby strengthening financial supervision and providing better decision support for management.

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