

# A SIMPLIFIED ACCOUNTING PROGRAM TO SUPPORT INTRODUCTORY ACCOUNTING EDUCATION

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## ABSTRACT

*Introductory accounting students are often frustrated with mechanical errors experienced when recording, summarizing reporting accounting information. These mechanical errors are time-consuming and often detract from the learning process. While small business accounting software can reduce the number of mechanical errors, it also masks many of the concepts being taught. This paper describes an accounting program that provides for the progressive automation of accounting processes. In the least automated form, the system emulates a manual bookkeeping system allowing students to develop an understanding of the accounting process without experiencing time-consuming mechanical errors. As students progress, the system is reconfigured to perform more of the mechanical processes automatically allowing students to focus on the accounting concepts.*

**Keywords:** Accounting systems, accounting education, introductory accounting course

## INTRODUCTION

This paper describes a simplified accounting system designed to facilitate the learning of the accounting process while reducing the student workload in the introductory accounting course. Each year thousands of college students enroll in introductory accounting courses. Often this course is a student's first exposure to business concepts and processes. The introductory accounting course provides students with an overview of the activities of business organizations as well as an introduction to the language of business and terminology of published financial reports. To many students, the course is considered one of the most difficult in the core business curriculum. While the course is not inherently complex, students are often frustrated with simple mechanical mistakes such as the transposition of digits in a number, posting to an incorrect account, or simple math errors which are both difficult and time-consuming to locate and correct.

While a number of commercial accounting packages designed for small businesses are available for classroom use, these packages have several drawbacks that limit their usefulness in introductory accounting courses. Even the most basic accounting packages require some knowledge of accounting in order to record and process accounting transactions. In addition, the commercial packages mask much of the account process by automatically performing many of tasks for the user. Once a transaction is entered, the commercial packages automatically post the transaction, summarize the balances and prepare the financial statements. While this is desirable for business applications, students are unable to observe and perform these activities to develop an understanding of the accounting process.

The system described below allows students to perform all steps in the accounting process while preventing many of the mechanical errors which are time consuming to locate and correct. As students learn the accounting process, the system is reconfigured to perform more of the

accounting functions automatically allowing students to focus on the accounting concepts rather than the mechanical activities of recording, summarizing and reporting the accounting transactions. Ultimately the system can be configured to allow automated processing of all the mechanical tasks. When configured in this manner transaction processing is similar to the commercially available small business accounting systems.

## **DESIGN OF THE SIMPLIFIED ACCOUNTING SYSTEM**

The accounting process begins with the recognition of an economic event. The event must be analyzed to determine the effect of the event on the organization and the economic effect is then recorded in the accounting journal. After the events are recorded in the journal, the transactions are posted to their respective ledger accounts. Following the posting, the changes in each account are summarized and the account balance is listed with other account balances in a trial balance. After checking to ensure all accounts are in balance, the account balances are then recorded on the financial statements. While the analysis of the transaction and the initial recording of the journal entries require an understanding of the relevant accounting principles, the remainder of the process is mostly mechanical. The posting of the journal entries and preparation of the trial balance and financial statements is both tedious and the source of many errors. Errors in the posting process, summarization of the accounts and preparation of the trial balance often require the students to reperform the entire process, checking their work until the erroneous entry is detected. While this activity adds little to the student's knowledge, it is the source of much frustration with the introductory accounting course.

The sections below discuss the design of a simplistic accounting program based on a manual bookkeeping system. The software is specifically designed to automate, without hiding, the mechanics of the accounting process. The software can be set to various levels of automation so that as students progress they can focus their efforts on understanding the accounting concepts rather than performing the mechanics of the accounting process. The following sections are organized in the order of the accounting process with a discussion of other support features of the software added at the end.

### **Transaction Analysis and Journal Entry**

The first step of the accounting process is the analysis of the economic event. When an economic event occurs, the accountant must determine the accounts involved and the effect of those accounts. By design the all economic events must follow the fundamental accounting equation; "Assets = Liabilities + Owners' Equity". The transaction analysis portion of the software allows students to review an economic event, select the affected accounts and indicate the dollar affect on each account. Accounts are selected from a drop-down list for each account category. Right-clicking on an account title takes the student to a glossary which defines the usage and characteristics of the account. A beginning student can use the glossary as a reference to ensure they are selecting an appropriate account to represent the economic event.

After analyzing the transaction, students must then record a journal entry representing the economic event. The process of journalizing transactions is similar to transaction analysis however students are required to record transactions using debits and credits instead of increases

and decreases. Journal transactions must also follow the fundamental accounting equation but also have the requirement that amount of debit entries equal the amount of credit entries. Journal entries are recorded by dragging the appropriate account title and dropping it on a line of the journal page, then entering the transaction amount in the debit or credit column. Consistent with virtually all accounting software, the student is prevented from recording a transaction where debits do not equal credits. A running total is maintained of all balances to inform the student of the amount that a transaction is out of balance during the entry process.

### **Posting to Ledger Accounts**

Posting to the general ledger account is a mechanical process of selecting the appropriate account for each debit and credit entry in the journal and recording the journal amount in the appropriate ledger account. While this process is purely mechanical, it is a major source of errors made by introductory accounting students. The students may omit the posting of transactions, post transactions to the wrong accounts, record debits to the credit column or vice versa, or incorrectly record the transaction amounts. To eliminate these errors, the software utilizes a drag-and-drop posting process. The student will select the transaction to be posted then drop the transaction on the appropriate column of the related ledger account. The software prevents errors by warning students when they are attempting to drop a transaction onto the wrong general ledger account or in the wrong column. Since the amounts will be entered automatically when dropped on the ledger account, errors in the recording of amounts are prevented.

When initially configured, the software requires all entries to be manually posted using the drag-and-drop process. The accounts are initially presented as “T” accounts, consistent with the format found in most introductory accounting texts. Later, as students become familiar with the posting process, the software is reconfigured to automatically post all journal entries. The ledger accounts can also be reconfigured to a table format, similar to that used by most small business accounting packages.

### **Trial Balance**

The preparation of a trial balance requires the students to list the accounts and their balances in account-category order and to verify that the sum debit balances equals the sum of the credit balances. Again this is entirely a mechanical process, but is the source of many student errors. Students may omit an account, incorrectly record an account balance, record a debit balance as a credit balance or vice versa, or incorrectly total the account balances.

Initially the software requires students to create the trial balance by dragging the ledger account titles and balances to a preformatted trial balance worksheet. The trial balance automatically totals the debit and credit balances and warns the students when the trial balance does not balance. Once students are familiar with the process of creating a trial balance, the software can be configured to produce the trial balance automatically from the accounts. The trial balance is presented in a multi-column worksheet format so that students can enter adjusting and closing entries as required, preparing the adjusted and post-closing trial balances.

## **Financial Statement Preparation**

The financial statements are also created through a drag and drop process. Students enter the financial statement headings and titles manually. They then create the body of each financial statement by dragging the accounts and their balances from the trial balance to the appropriate location on the financial statement grid. Totals are automatically generated for each financial statement category. The software supports all four of the basic financial statements; income statement, retained earnings statement, balance sheet, and statement of cash flows. Again, as students become more familiar with the accounting process, the software can be reconfigured to automatically generate financial statements from the completed trial balance.

## **Financial Statement Analysis**

An important objective of the introductory accounting course is for students to develop an understanding of the use of the information produced by the accounting system. The software provides a basic set of tools the analysis of the financial information. The tools automatically calculate a number of financial statement ratios and comparisons to allow students to evaluate the financial information and determine the affect of various accounting alternatives on the financial statements.

## **Additional Support Features**

In addition to supporting accounting system tasks, the software contains a number of tools to assist students in other accounting related tasks. A brief description of these tools is provided below:

**Chart of Accounts / Glossary** – The chart of accounts serves multiple purposes. First it provides a standardized list of accounts to be used in the accounting problems. Second it provides a means of configuring the accounts for financial statement presentation and entering beginning account balances. Third, it provides a glossary of accounts as a general reference for students.

**Present / Future Value Calculator** - This tool allows students to apply time value of money concept by computing present value, future value and the present and future values of an annuity.

**Bond Pricing Example** – This tool demonstrates the concepts bond pricing by allowing students to enter the bond terms and the market and stated (contractual) interest rates. The calculator will compute the price the bond should sell for the result in an equivalent rate and produce amortization schedules for both straight-line and effective interest amortization.

**Comparative Depreciation Schedules** – This tool allows students to enter the cost, useful life, salvage value and other characteristics of an asset and will produce a depreciation schedule using various depreciation methods. The tool will allow students to compare

the effects of depreciation under various methods as well as determine the book value of an asset for the purpose of computing the gain or loss on the disposal or sale of the asset.

### **CONCLUSION**

The simplified accounting system described above provides an easy-to-use tool to reduce the number frustrating mechanical errors while allowing students to perform the entire accounting process. As students become more familiar with the process, the system can be configured to perform many of the mechanical operations automatically and allow students to focus on the learning objectives. Comprehensive problems in introductory accounting texts are useful learning tools but often require more than three hours to complete. Automating some of the mechanical activities of the accounting process reduces the time required to complete the comprehensive accounting problems without compromising the learning objectives. While the software is initially configured as an automated version of the manual accounting process, reconfigured it appears similar to commercially available small business accounting packages. Additional functionality could be added to the software to support managerial and upper-division accounting course and provide a foundation for the use of sophisticated enterprise software applications as they progress in their education.