

ACCOUNTING SOFTWARE FOR STUDENTS – AN EFFICIENT TOOL

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Abstract

The aim of this paper is to demonstrate how technology in the classroom can be a useful tool for both students and teachers as far as Accounting is concerned.

Having in mind my students' needs I designed an accounting software which allows students to work quickly and more efficiently. With this software students introduce the movements and the software provides the daily journal record, account statements and balance sheets. By doing this, the students can introduce their entries and automatically view the consequences in the account maps of the movements they have just introduced.

The software was planned from the beginning to be used for educational purposes only and, as such, it is not subjected to any obligations imposed by law. It was made to run over Access© from Microsoft making this software accessible to almost everyone.

The software was built using a recursive relationship between a table and itself which assures the sums of the higher level results are presented in lower levels accounts. This way students can make one account entry and immediately see the results in daily journal records, account statements and balance sheets.

The outcome is a valid and reliable software. A simple, accurate, straightforward and user-friendly tool which provides immediate feedback to students' daily launches.

Keywords: Accounting, software, students, technology.

1 INTRODUCTION

This paper focuses on the creation of an accounting software specially developed to be used by higher education tourism students on their final Accounting project and its impact on students' performance.

The need to develop such software is justified for many reasons, not only practical but also educational, particularly when at a time like this one needs to have in mind the development of students' professional skills. Nevertheless, this article will be focusing mainly on two key aspects: the first in linked with the difficulty one finds in Portugal of getting a license of a professional accounting software to be used in classes.

The second reason is related with the complexity of the professional accounting software existing in the market. We consider that the main objective of this subject is the learning accounting and it could be too complex for students if they also have to learn how to use a complex accounting software as this could be unproductive.

In the light of what has been said, to help our students we decided to design/create an accounting software, which would be feasible, simple and easy to use.

2 METHODOLOGY

Seven professional accounting software programs existing in the Portuguese markets were analysed. Based on the analysis of the design of the database of these programs we have created our own software.

Afterwards we started the developing of our software always remembering two issues. The first issue is that this software should be used in similar way as the software existing in the market. The second issue would be that this software should be less complex and more user friendly than the professional software existing in the market.

After being developed and tested the accounting software was given to students, so they could use it to do their final project in the subject of Accounting. Along with the software the students had a two-hour lesson to explain how to use the software.

The use of the software we have provided students with is not an obligation; students were free to choose the tool they wanted to use to execute their final assignment.

3 BRIEF OVERVIEW OF EXISTING ACCOUNTING SOFTWARE IN THE PORTUGUESE MARKET

The majority of the existing accounting software use an accumulation of totals based on recursive relationships. The accounts with less number of digits accumulate successively the totals of the accounts with a bigger number of digits.

This recursive relationship is usually achieved by using repetitive cycles. In these cycles we successively summarize the totals of the accounts with more digits and accumulate their totals on the accounts less digits. The cycle repeats itself successively until we reach the minimum level of digits that an account can have.

The seven accounting software programs existing in the Portuguese market that we analysed were Gestware [1], OGI [2], Sage – Infologia [3], Artsoft – TI [4], Primavera [5], f3m [6] and Banana [7].

After studying these software programs we conclude that most of them follow a recursive logic to group the information of the sub accounts in the accounts. This recursive logic of the accumulation of totals of sub accounts in the accounts is sometimes achieved not by using a recursive relationship existing in the database model between the field account and the field sub account, but by using a code.

We can observe that in some programs that instead of using an account to group a sub account, they use groups. These groups afterwards supply us the grouped information of sub accounts. Below (Fig. 1) we can see a summary of the conclusions that we achieved related with the logic of grouping used in each software.

Software programs	Logic grouping of the accounts
<i>Gestware</i>	Group
<i>OGI</i>	Recursive
<i>Primavera</i>	Recursive
<i>Sage - Infologia</i>	Code
<i>Artsoft – T.I.</i>	Code
<i>f3m</i>	Recursive
<i>Banana</i>	Group

Fig.1 Logic grouping of the accounts

4 DEVELOPMENT OF OUR SOFTWARE

We decided to name our software as “traditional accounting software” because it uses the same database design as most of the accounting software existing in the market.

This software uses the traditional method of the elevator to group the information from the sub accounts in the accounts. This technique uses a recursive relationship of a table with itself.

This recursive relationship can be substituted by a code. Instead of supporting the software logic in the relationships of the database to group the information of the sub accounts in the accounts we can use code. This code usually uses repetitive cycles to develop this task i.e. repetitive cycles like “for-next” or “do-while”.

4.1 Tables

To group the information of the sub accounts in their respective accounts this software uses a recursive relationship of a table with itself (Fig.2). The table “plano de contas” (list of accounts) has a relationship with itself, the field “agrupa-conta” (group in account) is related with the field “conta” (account), both from the table of “plano de contas” (list of accounts).

This database also has a relationship using the field “conta” (account) between the table “movimentos” (launches) with the table “plano de contas” (list of accounts). Moreover, it establishes a relationship between the table “movimentos” (lauches) with the table “cabeçalho” (pane). This relationship is made using the fields “ano” (year) and “numero de document” (number of document), because the same number of document can be used in several different years.

The table “cabeçalho” (pane), has as primary key the fields “ano” (year) and “numero de document” (number of document), one “cabeçalho” (pane) is related with many “movimentos” (lauches).

The table “plano de contas” (list of accounts) saves all the accounts existing in the list of accounts and has as primary key the field “conta” (account). One account from the list of accounts can be used in one or more accounting launches.

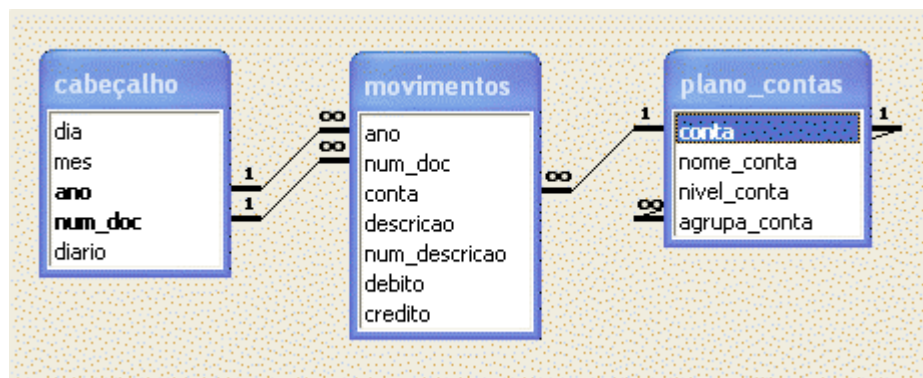


Fig. 2 Relationships

4.2 Forms

4.2.1 Main Menu

This is the start point for users. In this form we can choose from several options, insert new accounts in the list of accounts, insert accounting launches or open the form of reports.

4.2.2 Reports Menu

It allows us to print several reports. Among them we have the list of accounts, the balance sheet, account statements and journal.

4.2.3 Balance sheet report Menu

In the balance sheet report menu, it is possible that the accounting manager needs a balance sheet with different levels according with what he wants to analyze.

If we want to get to know the situation at a high level without many details, probably it is ok to get a balance sheet with just a few digits. In a global analysis it is easier if there is not too much unnecessary residual information.

If in another analysis we want, for some special reason, to know some specific detail, we can choose to have a balance sheet with a higher level of detail, by using more digits.

4.2.4 Introduction of new accounts in the account list

Usually this is a form which is barely used. We only use it when we intend to introduce new accounts or change old accounts existing in the accounting. In the form accounts of the list of accounts, to introduce a new account, we have to introduce information in several fields, the number of account, name of the account, number of the account where our account is going to group, and the level of the account that we are introducing.

The need to introduce the account in which our account is going to group represents the design of our database. It is by introducing the account and the account where it groups itself that we are feeding the recursive relationship of the table list of accounts with itself.

4.2.5 Introduction of accounting launches

This form is the most used in this software. Everyday new accounting launches are introduced. This form has two sub forms (Fig 3). The data introduced in this form is going to be saved in the table of accounting launches. (movimentos contabilísticos).

The table panes have a relationship from one to many with the table launches. The reason why we need a sub form is because one pane can be associated with many launches. The second sub form summarizes the totals of the launches of a certain pane.

Ano	Nº doc.	Conta a lançar	Descrição do movimento	Nº desc	Débito	Crédito
2004	87	120001	venda produto CX1		130,90	0,00
2004	87	7113100000000000001	venda produto CX1		0,00	110,00
2004	87	2433119	venda produto CX1		0,00	20,90
*	2004				0,00	0,00

Fig. 3 Introduction of accounting launches

4.3 Queries

The query named "list of accounts" was built based on the table list of accounts. The query "year launches" was built based on the table pane and the table launches. Based on the query list of accounts and the query launches of the year, the queries balance sheet, account statement and journal were built.

4.3.1 Year launches

This query joins together data from the table pane (cabeçalho) and the table launches” (movimentos). These tables are related by two fields, the field number of document and the field year. The field year is necessary because the number of document can be repeated in different years.

This query will be very important because it will be the base to build all the others queries in this software. This way, any condition applied here will be valid for all the queries of the software.

4.3.2 List of accounts

This query is highly influenced by the recursive relationship existing in the table list of accounts. The table list of accounts is related with itself using the field group account connected with the field account, both from the same table.

4.3.3 Balance sheet

The query balance sheet joins together data from the query launches of the year with data from the query list of accounts. The relationship between both queries is made by using the field account.

The query launches of the year provides data about the accounts that have been launched, values in debit and values in credit. The query list of accounts, provides data about the summarized accounts, the level of the account and the name of the account.

4.3.4 Account statements

This query is built based on the query launch of the year and the query list of accounts. The relationship between the queries is made using the field account.

From the query launches of the year we are going to use the launched account, the values in debit and credit, the date and the description. From the query list of accounts we are going to use the name of the account.

4.3.5 Journal

The journal joins together data from the query launches of the year with data from the query list of accounts. The field account is used to create the relationship between the two queries.

From the query launches of the year we are going to pick up data about the date, the account, the description, the values existing in debit and credit. From the query list of accounts we are going to use the data from the name of account. This query is going to be used to build the report of the journal.

4.4 Reports

4.4.1 List of accounts

The report list of accounts is built based on the query list of accounts. This report provides us a list of all the accounts in the accounting.

In this software the accounts are all together in the same table, no matter the level they might have. Because they are all together priting becomes a very simple, readable task.

4.4.2 Balance sheet

The balance sheet is the most important account map. It is based on the balance sheet that we can build the balance and find the results. The balance sheet provides the management a finance view of the enterprise.

The report of balance sheet was built based on the query of the balance sheet. The accounts were grouped by levels and sub levels. More specifically the accounts have been grouped by the last level, then they have been grouped by the fifth level, the fourth, third, second and first.

For each account in each level a sum of debits and sum of credits is calculated. From the difference between the sum of debits and sum of credits we can achieve the result of the account. At the end of the report we have the sum of all debits and the sum of all credits.

If the sum of debits is different from the sum of credits than the accounting is wrong. This way the difference between the sum of debits and the sum of credits has to be zero.

4.4.3 Account statement

The report account statement supplies us detailed data about a certain account. It allows us to analyze the launches that have been executed in that account during the entire year.

The account statement is usually used to verify if all the launches of a certain account have been correctly launched. The account statements are also very useful to verify the relation between our enterprise and the other players in the market. Mostly in the relation with the state, banks clients and suppliers.

The account statement can also be useful internally, it can be used to control merchandises of a certain product, incoming and outgoing of the product in the warehouse.

The account statement has debit and credit launches, and the final total of the account will be exactly the same total of that account in the balance sheet.

4.4.4 Journal

The report journal provides us information about all the account launches that have been executed. The journal is the easiest report to build because the data that it provides us with is the same that we have introduced in the computer, and it is organized the same way it has been inserted.

5 CONCLUSION

After designing, developing, and finally testing the software, we can conclude that about eighty per cent of students took the option of using the software to make the final project of Accounting.

From the other twenty per cent some chose to use another professional accounting software that already existed in the market, or simply did not use any software at all, and just used easy access tools like excel. The students that took the option of using professional accounting software justified that by stating that they had in their group someone with previous knowledge of the software they had used.

Among all the groups that decided to use our accounting software only five per cent had difficulties using it. When questioned about their major problems in using the software, we verified that no one from these students had attended the two-hour course given on how to use the software.

This study has therefore proven that the designed software is not only a very useful tool for accounting students, but also one that students can easily work with thus taking advantage from it.

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