KÖZLEMÉNYEK

BARNA, RÓBERT–HONFI, VID

Courses on Information technology on correspondence Bachelor program for finance and accounting in Kaposvár University

Application of information technology is unavoidable in all segments of life. However, different areas have got different and specific demands on informatics.
At the Kaposvár University, our department teaches specific IT courses on each bachelor program. The BA program for finance and accounting also requires several aspects: the IT courses need to fulfil the prerequisite demands of other courses, to provide the students with tools for solving mathematical and statistical problems and to provide an approach for the students how to enhance their knowledge, how to use software in their jobs in the future. In order to comply with these objectives, the courses of database and spreadsheet management held through two semesters provide opportunities. In the present article, the authors introduce the principles and practical applications of information technology courses on correspondence BA program for finance and accounting science.

Introduction

The Faculty of Economic Science was established in 2004 at the Kaposvár University. The finance and accounting BSc programme began in 2006, with both full-time and correspondence courses. The MSc programme may start from 2009 when the BSc programme is finished.

Beyond the theory of finance and accounting the practical knowledge is important too for graduates. Various accounting programmes are developing in parallel with the spread of computers; in this area data processing is based almost entirely on IT. The online systems came to the front. The APEH promotes the spread of the electronic filing of tax returns, while banks compete with each other in e-bank services. The electronic correspondence and the usage of the Internet services have become everyday activity by today. The corporate management systems (CMS), decision support systems (DSS), and Management Information System (MIS) are spreading increasingly.

It is necessary thus to let the students obtain thorough practical competences in the course of the training; and IT courses need to serve special claims of academic specialization.

Spreadsheet management

The task of first semester is to acquire spreadsheet management skills. Introduction to the software used, data input, calculations, functions, diagram making are necessary to be learnt, naturally.

Of course the knowledge on financial functions is emphasized. In the course of their use we make calculations that support and complement financial studies.

Special lessons
The calculation of payment instalment of loan can be mentioned, which is a simple compound interest calculation. The effect of the change of certain explanatory variables can be analysed on the result variable. The role of interest rate and also the importance of bank base rate for the economy are easily understandable. The increase of maturity does not reduce significantly the amount of instalment any more after a certain period. The tool Goal seek can be used for calculating the maturity or amount of loan matching a given payment instalment. The analysis of the chronological change of the ratio of instalment and of repaid amount can show that specific maturity when neither the amount of instalment is high nor the repaid amount exceeds significantly the amount of loan. Here, a two axis diagram of the data can be drawn up, too (Figure 1).

Figure 1: The ratio of amount of instalment and of the amount of repaid loan in proportion of the maturity in case of a loan of HUF 1 000 000 and an interest rate of 10% per year
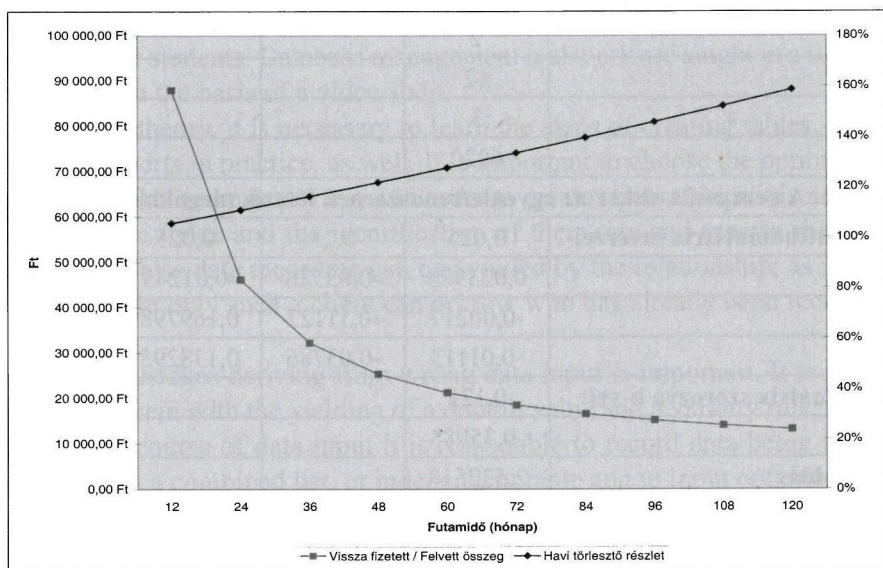
The course on financial modelling to be taught later on requires knowledge on matrix operations. The theory of matrices is ensured by mathematics courses. It is necessary that students are introduced with the concept and input of block formulas and matrix functions. As size of used matrices and because operandus types can not be replaced; the elaborated examples should call special attention of the students to it.

Matrix operations are necessary in the course of the solution of the lineal inhomogeneous simultaneous equations as well. Figure 2 shows a simple way of the solution of the following simultaneous equations:

$10\,x1+32\,x2+3\,x3+1\,x4 = -1$
$5\,x1+-4\,x2+-2\,x3+3\,x4 = 2$
$2\,x1+2\,x2+-1\,x3+9\,x4 = 12$
$1\,x1+-3\,x2+4\,x3+-5\,x4 = 3$

Figure 2: Solution of lineal inhomogeneous simultaneous equations with the help of spreadsheets

Lineáris inhomogén egyenletrendszer megoldása				
Az együttható mátrix A:	10	32	3	1
	5	-4	-2	3
	2	2	-1	9
	1	-3	4	-5
Az egyenletek jobboldala b:	-1			
	2			
	12			
	3			
det A:	6920			
Ha a det A nem nulla akkor az egyenletrendszernek létezik megoldása				
Az együtthatómátrix inverze:	0,025	0,15	-0,025	0,05
	0,023988	-0,03526	-0,01243	-0,03873
	-0,00217	-0,11127	0,169798	0,238439
	-0,01113	-0,03786	0,138295	0,023988
Inverzmátrix szorozva b-vel:	0,125			
	-0,35983			
A megoldás	2,532514			
	1,666908			
Ellenőrzés A*(invA*b):	-1			

	2			
Tkp. visszahelyettesítés	12			
Visszakaptuk az egyenletek jobboldalait	3			

For more complicated tasks, the tool Solver can be used; which allows finding the optimal value for certain formula (objective) in a given cell of the sheet. Solver modifies the value of the given variable cells in a way to reach the objective. Solver can minimise or maximise the objective for various decision variables. Thus Solver is a multivariable Goal seek tool allowing the users to set constraints. In seminars the students used Solver for resolve a transportation example.

Macros

The use of macros can atomize repetitive operations without real programming. The simple macro recording tool records each step taken in Visual Basic language while performing series of commands. The recorded macros can be run anytime. By modifying the recorded steps, the macros can be tailored for the user. It is important for the students to know macros because they can simplify their examples and see how to make spreadsheet programmes. Visual Basic as optional course can be learnt later on by students.

Database management

Fundaments

Databases are used frequently in everyday life. The use of database is essential knowledge for students. Database management and work are taught in a semester-long course on the basis of a video shop.

Beside the theory, it is necessary to learn the steps of creating tables, queries, forms and reports in practice, as well. It is important to choose the optimal types and size of fields and primary keys. In order to create relationships it is necessary to select relate fields and the identification of their size and type in the related sheets. Even false data recording can be avoided by the relationship; as it can be determined that only such a client can borrow who has already been recorded in the database.

Filtering mistakes deriving from wrong data input is important. It is possible to moderate them with the yielding of a default value and a validity rule, an input mask. In the course of data input it is reasonable to record data being repeated many times in a combined list, or independent table and to input optionally them into the fields. It is good to prepare a form for the users as well, because they understand it better.

Databases are built in order to get information from them later on. The tool that can be used for this purpose is query, which can be created via the graphic interface of the database manager. In order to create a query, it is necessary to define conditions for each type of fields and the relations given in rows or columns. The use of the graphic surface is more difficult sometimes than that of SQL but it is good to learn this first. SQL knowledge is inevitable, although one semester is enough only to get information on its basics.

It is also important to know how to create diagrams and reports; as the relations of the data can be better presented. The students learn how to create them step-by-step.

Automation of simple tasks

Database management is used generally by non-proficient user. They require a simple user interface and data presentation that they understand easily. Several such options are provided by the database manager, when knowledge of programming language is not required and can be easily programmed in 4G language. The easiest is to place tasks being used on a relate board, where functions start with button press. We may create a shortcut by pulling the icon of the relate board onto the desktop, and it initiates the database by a simple double-click.

The forms facilitate the data input. It is possible to put data of several tables; thus table "borrowing" shows the data of films and clients as well. Of course, we need to avoid that the data can be modified from here. If the basis of the forms is parametrical query, returned DVD's can be searched and recorded in the database. By using complementary forms, we can record data in several datasheets; e.g. if more DVD's of one movie arrived. By using calculated elements the fee to be paid for late returning can be given; which is supported by simple arithmetical operations and the integrated function "date()".

Summary

By using up the given number of lessons, the students managed to get knowledge on extended user options beyond the basics of spreadsheet and database management. These provide fundaments for complex IT – e.g. DMS, CSS and MIS – systems.

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MS Excel Súgó

BARNA, RÓBERT–HONFI, VID

A LEVELEZŐS PÉNZÜGY ÉS SZÁMVITEL SZAKOS HALLGATÓK INFORMATIKAI KÉPZÉSE A KAPOSVÁRI EGYETEMEN

Ma már az élet semmilyen területén nem kerülhető meg az informatika alkalmazása. Az egyes szakterületek természetesen más és más igényt támasztanak vele szemben.

Egyetemünkön minden szaknak speciális informatikai ismeretet oktat tanszékünk. A pénzügy és számvitel szakos hallgatók alapképzése során is több igény merül fel: az oktatás ki kell hogy elégítse a későbbi tantárgyak informatikai igényét, be kell, hogy mutatassa a matematika és statisztika feladatok megoldásának lehetőségeit, kellő szemlélet kialakításával fel kell hogy készítse a hallgatót a későbbi tudásbővítésre, a munkahelyén használt szoftverek használatának megtanulására. Cikkünkben szeretnénk bemutatni a levelezős pénzügy-számvitel szakos hallgatók informatika képzésének elveit illetve ennek gyakorlati példáit is.