NU-DATA APS
LYNGBYVEJ 70-72
2100 KØBENHAVN Ø

TEL. 01. 29 27 22
APS REG. 78 18
GIRO NR. 7 21 80 60

IPB

INTERACTIVE PLANNING AND BUDGETING

A presentation of IPB, system for Interactive Planning and Budgeting by NU-DATA ApS.

Abstract:

IPB is an interactive system developed for financial planning and budgeting purposes with particular emphasis on the simulation side.

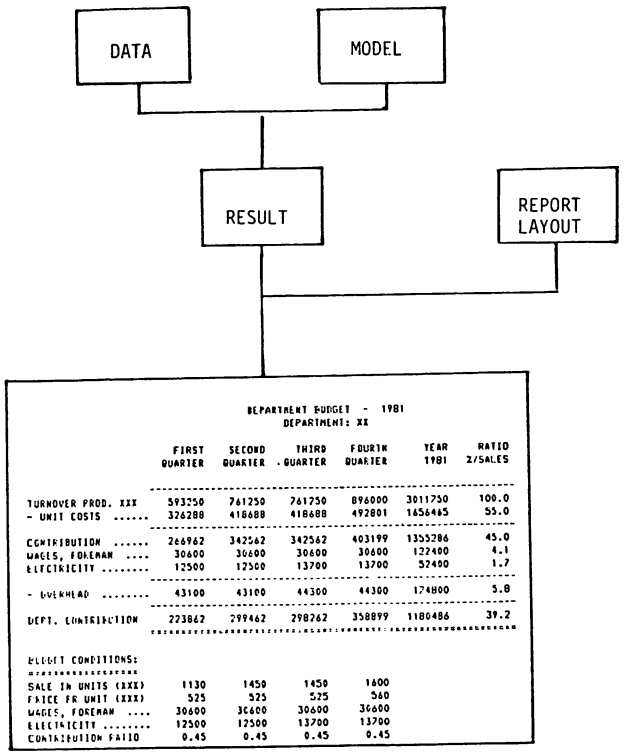
The system has its own "model language" which makes it flexible and easy to use - also for persons without any kind of EDP experience. This enables the user to investigate the impact of uncertain future conditions and improves his understanding of the consequences of alternative actions.

The IPB system is an efficient tool for the manager who knows the problem of not being able to achieve information about the effects on earnings and cash-flow of some specific changes of policy, in a sufficiently quick and accurate manner.

Any accountant or financial manager who knows the problem of being stuck in daily routines, unable to deliver the anyalyses that management justly wants but seldom gets, can also profit from the IPB system.

IPB, system for Interactive Planning and Budgeting

The structure of all planning, budgeting and calculation can in principle be described as:



When combining DATA with certain arithmetic rules (a MODEL) a RESULT is produced. If the RESULT is combined with a REPORT layout the finished text will be written out.

IPB is made to handle exactly this structure, and the calculation and the writing out of a budget is very simple:

```
READY FOR COMMAND
  1.00 BUILD RESUL FROM MODEL AND DATA

READY FOR COMMAND
  1.00 WRITE RESUL AFTER FORM
```

Thus the computer takes care of the calculation/typing work and the decision makers can concentrate on alternatives. The consequences of alternatives can be illustrated like this:

```
READY FOR COMMAND
  1.00 ALTERNATIVE TERMINAL
  1.00 DATA1 DATA2 DATA3
  1.00 D3,D7
  1.00 INFLATION 0.5
```

An inflation rate of 0.5 per cent per periode will be added to the information in the three sets of data in lines 3 and 7.

If DATA1, 2 and 3 contain information about three departments three department budgets can be made using the same calculation rules on all three sets of data.

```
READY FOR COMMAND
  1.00 BUILD BUDG1 FROM MODEL AND DATA1
  1.00 BUILD BUDG2 FROM MODEL AND DATA2
  1.00 BUILD BUDG3 FROM MODEL AND DATA3
```


The department budgets can be added up to a total budget:

```
READY FOR COMMAND
  1.00 ADD BUDG1 BUDG2 BUDG3 TO TOTAL
```

The TOTAL result can now be written out according to the same report layout as the department budgets:

```
READY FOR COMMAND
  1.00 WRITE TOTAL AFTER FORM
```

If several alternatives are made in relation to the base budget it is only the changes which will be of interest. If the new budget is deducted from the old one these changes will be in focus:

```
READY FOR COMMAND
  1.00 SUBTRACT OLD TOTAL TO CHANG
```

When the budget is to be written out the command JUMP can be used. This entails that only the lines whose value differs from 0 (zero) are written out. The text will have the usual layout, but only factors which have been changed compared with the original ones will be included.

```
READY FOR COMMAND
  1.00 WRITE CHANG AFTER FORM JUMP
```

IPB has about 60 commands and instructions of which 7 are used in the above examples. These commands/instructions make it very easy for people without EDP experience to make their own models and reports, and also registration and processing of data are facilitated.

In the following we will give a brief description of the various commands and instructions.

Summary of commands and instructions and their most important characteristics

COMMANDS

ADD file name1, ..., file name n TO file name.

Adds two or more data files line by line and column by column.

TERMINAL
ALTERNATIVE REFERENCE file name

These commands are used to analyse 'what if' situations. New alternatives can often be analysed by modifying existing data files (e.g. insertion of new figures, adding a constant value to existing values, change of percentage, or making an alternative inflation). By using the command ALTERNATIVE such modifications of existing data can be made in three different ways:-

- line by line
- in a sequence of lines
- in lines and files referenced in a file (if the command is REFERENCE).

AUTO file name

Executes a sequence of commands and instructions stored on the strategy file in question.

BUILD file name FROM file name (AND file name)

This command results in accomplishing an arithmetic operation defined in a model file. The result of the calculations will be stored on an existing data file or on a new data file. If the calculations require input the command (AND file name) specifies where the input can be accessed.

COPY file name TO file name

Copies files. Especially useful in connection with alternative calculations (ALTERNATIVE) if a copy of the original data is required.

DATA file name

Entry of data. The data entered will be kept on a data file of the specified name.

DIVIDE file name 1, ..., file name n TO file name

This command allows the user to divide data files quantity by quantity.

GET file name

Creates a new file by joining lines from one or more existing files.

MATRIX file name * file name TO file name

The command executes different kinds of matrix operations.

MERGE file name 1, (file name 2) TO file name

This command enables the user to create new data files from existing data files in any possible way.

MODEL file name

Definition of arithmetic operations. These will be kept in a file under the specified name.

MULTIPLY file name 1, ..., file name n TO file name

The use of this command multiplies two or more data files quantity by quantity.

PURGE file name

Deletes the file.

REFERENCE file name

In connection with alternative calculations it may often be useful to alter several lines in different data files by one operation. For instance all lines containing information of a currency will be changed by a percentage as a result of a new rate of exchange; or all lines containing information of the price of petrol per gallon will be increased by the amount XX, which is a new tax. The REFERENCE command allows the user to combine any data line in any data file by a reference.

REPORT file name

Definition of output structure, i.e. which lines and columns from which file are to be written and which layout is to be used.

SCHEME file name

This command is used to design and print schemes for data.

STOP

Terminates the program.

STRATEGY file name

Allows the user to create a chain of commands and instructions. The sequence of commands and instructions will be kept in a strategy file after which it is possible to execute the sequence by one command only. This command can be used for example when the company budget is to be gathered from several department budgets, etc.

SUBTRACT file name 1, ..., file name n TO file name

Subtracts data files quantity by quantity.

UPDATE file name

Any column and line in the specified data file can be updated (changed) by the use of UPDATE.

WRITE file name AFTER file name

This command prints a data file according to the structure specified under REPORT.

INSTRUCTIONS

COLUMNS

The system operates with columns 1 - 30. If the user wants to change the number of columns or if certain columns should be reserved for later use the instruction COLUMNS should be applied.

CONSTANT

Replaces specified data by a constant.

DATE

Writes today's date.

DECIMAL

Controls the number of decimals in the output.

DIVISOR

This instruction is used to reduce the values in one or more lines in a data file by a divisor.

FACTOR

This instruction is used to increase the values of one or more lines in a data file by a factor.

HEADING

Prints a heading on all pages in a report.

IF

Used as a conditional expression under GET and MERGE.

IF - - - ELSE

Logical espression which can be used in the calculations.

INFLATION

Adds inflation to defined data lines (a percentage calculation).

INTERVAL

All lines in data files, model files, report files, reference files as well as in strategy files are numbered. The system generates line numbers automatically with increments of 1. This can, however, be changed arbitrarily by the instruction INTERVAL.

LINE

Prints a line of specified characters in the report.

LIST

Gives a listing of the file which is in use.

MINUS

Subtracts a constant from data specified by the user.

MOVE

Moves one or more columns in a data file.

NEWCOL

Changes the number of active columns in data and model files.

PAGE

Changes to a new report page.

PERCENTAGE

Changes specified data by X per cent.

PLACE

Is used to copy sequences of lines as well as single lines from a data file to a model file.

PLUS

Adds a constant to data specified by the user.

READY

Terminates the use of any command; the system is then ready for a new command.

RECIPROCAL

Gives a reciprocal change on one or more lines in a data file

SEQUENCE

Controls the sequence in which the columns are to be printed in the report.

SUBHEADING

Prints a column heading.

TEXT

Inserts a text line in the report.

UNIT

Defines the unit in which the output should be printed. E.g. the output is wanted in thousands (UNIT 1000), hundredths (UNIT 0,01) etc.

Cxx

Defines the column number. Arithmetic operations can be executed on lines as well as on columns.

Dxxx.xx

Definition of data lines (up to 99999 in one data file).

DMxxx.xx

Modifications of data line xxx.xx

Lxxx.xx

Definition of model lines (used when arithmetic operations are executed on columns).

Mxxx.xx

Modifications of line xxx.xx

Pxxx.xx - Pyyy.yy

Purges lines xxx.xx - yyy.yy

Survey of commands and instructions

Instructions \ Commands	ADD	ALTERNATIVE	AUTO	BUILD	COPY	CPU	DATA	DIVIDE	GET	MATRIX	MERGE	MODEL	MULTIPLY	PURGE	REFERENCE	REPORT	SCHEME	STOP	STRATEGY	SUBTRACT	UPDATE	WRITE
COLUMNS							*					*										
CONSTANT		*																				
DATE																*						
DECIMAL																*						
DIVISOR		*																				
FACTOR		*																				
HEADING																*						
IF ..... ELSE												*										
IF									*		*											
INFLATION		*																				
INTERVAL							*		*			*			*	*			S			
LINE																*						
LIST							*					*			*	*			S			
MINUS		*																				
MOVE							*															
NEWCOL							*															
PAGE																*						
PERCENTAGE		*																				
PLACE												*										
PLUS		*																				
READY		*					*		*		*	*			*	*	*		S			*
RECIPROCAL		*														*						
SEQUENCE																*						
SUBHEADING																*	*					
TEXT																*						
UNIT																*						
Cxx												*				*						
Dxxx.xx		*										*			*	*	*					*
DMxxx.xx							*					*			*	*			S			
Lxxx.xx							*		*		*	*			*	*			S			
Mxxx.xx							*					*			*	*			S			
Pxxx.xx							*					*			*	*			S			
*(asterisk)							*					*			*	*			S			
;(semicolon)							*					*			*	*			S			
Data line							*															
Model line												*										
Column calculation												*										