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MacIennan, Iva

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RETRO: A COMPUTER PROGRAM FOR PROCESSING LIFE HISTORY DATA

Iva MacLennan

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PREFACE

This Working Note is one of a series of publications resulting from two Rand survey and research projects to investigate the influence of certain economic, institutional and biomedical factors on couples' fertility behavior. One project was funded by the Rockefeller Foundation and conducted in Guatemala in collaboration with the Institute for Nutrition in Central America and Panama (INCAP). The other was funded by the U.S. Agency for International Development and was conducted by The Rand Corporation in collaboration with initially, The Department of Statistics of the Government of Malaysia, and subsequently, Survey Research Malaysia, Sdn. Bhd. Both projects' central purposes are to identify factors within the range of direct public policy influence which directly or indirectly affect birthspacing and family size, and to estimate the magnitude of statistical relationships between these factors and the outcomes of interest.

Both projects have involved development and field testing of survey instruments; training of field personnel; collection, coding and cleaning of data; and statistical investigation of research hypotheses. Project outputs include the resulting data sets, reports on initial research findings, and materials of methodological and operational interest to investigators who use the data sets or are involved in similar or related projects.

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In both projects we administered a number of survey instruments to a panel of respondents. Among these instruments were retrospective life history questionnaires given to ever-pregnant or ever-married women in the sample and to their husbands. These questionnaires elicited unified life histories covering pregnancies, use of contraceptives, breastfeeding, marital status changes, schooling, child deaths, migration, house characteristics, help with children, separations from spouse, ownership of land, and employment and income. Using these time-ordered data in analysis requires that they first be transformed into the desired variables in records of fixed length. For example, one might want each husband's occupation at age 20, or at age of first marriage, or when his wife first worked for income, or at the time of the birth of their first child.

RETRO is the computer program designed to accomplish this task. Users of the retrospective data in Rand's Guatemala and Malaysia surveys will want to use RETRO to prepare data for statistical analysis. In addition, it can be adapted for use with other life history surveys. The source program is available from the author.

Other publications of particular interest to users of the Guatemala and Malaysia survey data are:

Henry L. Corona, Code Book and User's Manual: INCAP - Rand Guatemala Survey, The Rand Corporation, WN-10162-RF, September 1977.

Terry Fain and Tan Poh Kheong, The Malaysian Family Life Survey: Round 1 Codebook, The Rand Corporation, WN-10148-AID, March, 1978.

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INTRODUCTION

The RETRO program is designed to create a file for analysis by retrieving data from life history files. It has been in use at Rand for two years. RETRO is written in the Fortran IV language for use on IBM computers and is currently adapted to input data from either the Guatemalan or Malaysian male or females retrospective survey instruments. It can simultaneously input data from the male and female instruments to create linked husband-wife output records. RETRO can be readily adapted for use with other life history surveys, also.

The richness of the data and the capabilities of RETRO allow the user to retrieve a large variety of variables, such as respondent's age at most recent marriage, highest schooling level attained, average wage earned over the lifespan, type of contraceptive used in a particular pregnancy interval, or the number of children now living.

A distinguishing characteristic of retrospective data is that it contains a time dimension. Each of the four survey instruments that RETRO processes contains approximately 100 substantive questions, but for a single respondent almost any of these questions may be answered up to 40 times, referring to different time periods in the individual's life history. This would create an unmanageably large array if it were to be stored in a fixed format matrix, with a row for each month of the 75 years in which an event may have occurred, and a column for each of the 100 variables.

Instead, RETRO inputs a file which records only initial values and changes in the variables, accompanying each by the month and year of occurrence, and, in some cases, the time duration of the value. (In other cases, the duration is simply determined by a

subsequent occurrence of that variable.) For simplicity, the variables are grouped into event types, such as employment, marriage, and pregnancy; when there is a change in, say, employment status, the date of the change is recorded, along with the new values of all of the employment variables.

Because the amount of data varies for each individual (due to differing numbers of jobs held, pregnancies, etc.), the variable length data record is preceded by a fixed length index record which indicates how many occurrences of each event type appear for that individual. The data for each instrument are arranged in this form by a CONVERT program, which inputs the multiple card images for each respondent, and outputs the index and data records required by RETRO.

This indexed storage method has been used in the Social Accounts Study at Johns Hopkins University[1] and in the Adolescent Society Follow-Up study at Battelle Human Affairs Research Centers[2]. RETRO is unique, however, in several respects: First, any of four distinct survey instruments may provide the input data. Second, the additional capability exists to match the male and female questionnaires, which can then be accessed as if they were a single questionnaire. This allows retrieval of such variables as the husband's occupation at the time of the wife's first pregnancy. And in common with the Battelle MISR system, RETRO offers a number of alternative modes of retrieving data, allowing substantial flexibility

[1] See Nancy Karweit, "Storage and Retrieval of Life History Data," Social Science Research, Vol. 2, No. 1, March 1973.

[2] See Elizabeth Thomson and Margaret Marini, "Multi-File Indexed Sequential Retrieval System (MISR): User's Manual", Battelle, February 1977.

and complexity in the creation of variables for subsequent analysis.

A computer run of RETRO creates an output file of fixed length records containing some subset of the original records and variables (or variables constructed from the original ones by means of a retrieval control card). These fixed length records may be used as input to standard statistical packages or otherwise used as desired.

A record definition card allows multiple output records to be created from a single input household. This may be used, for example, to create a file where the unit of observation is a live birth, a job change, or a change of residence.

The decision to include or exclude an observation can be made both before and after the output variable definitions. The selection criteria are conveyed through one or more logical expressions (comparing a variable to another variable or to a constant) connected by logical connectors (AND or OR) to form a single logical test, which, if true, will eliminate the record from further processing. A logic level control allows the ordering of the expression evaluation, equivalent to the use of parentheses in algebraic equations.

RETRO allows elementary transformations and recodes. Initial

after the initial transformations.

The core of the program is the output variable definitions.

Each output variable is defined on a retrieval control card (sometimes spanning two card images). There are eleven distinct types of retrieval, grouped into three categories:

Retrieval of Value of Variable

- o Static (value never changes)
- o Value at event
- o Age at event
- o Calendar time at event
- o Weighted average value of variable between two events
- o Specified value of variable between two events
- o Secondary age (age of spouse) at event

Retrieval of Length of Time

- o Duration of event
- o Time between two events

Retrieval of Count

- o Number of times in a state between two events
- o Number of code changes between two events

An "event", as mentioned above, can also be an age or calendar date, and can incorporate a time increment or decrement (e.g., nine months before a specified event).

RETRO can accumulate summary statistics for the output variables: means, variances, maxima, minima, and number of zeroes.

The following sections will describe the features of RETRO more thoroughly.

DETAILED DESCRIPTION

General Theory Of Defining Variables With Retrieval Control Cards

A retrieval control card is required to define each variable desired for the output file. The first step in coding one of these cards is to determine the appropriate retrieval type, of which there are presently eleven, which can be grouped into three categories:

Retrieval of Value of Variable

- o Static (value never changes)
- o Value at event
- o Age at event
- o Calendar time at event
- o Weighted average value of variable between two events
- o Specified value of variable between two events
- o Secondary age at event

Retrieval of Length of Time

- o Duration of event
- o Time between two events

Retrieval of Count

- o Number of times in a state between two events
- o Number of code changes between two events

The concept of an event and how to define one will be discussed later. At this point, we will expand a little on each of the retrieval types, and when each might be used.

Retrieval Types

1. Static. The value of these variables never change within a household. They appear at the beginning of the output record, and include such items as the family ID and the date and place of birth of the respondent.
2. Value of variable at an event. This will probably be the most used retrieval type. It returns the value of any variable (except for a static one, which is handled by retrieval type 1) at a point in time determined by the event portion of the retrieval card.
3. Age at event. Returns respondent's age in months at the time of an event when processing either the male or female retrospective. For combined processing, this returns the female's age. (See type 11 for the male's age in combined processing.)
4. Calendar time at an event. Returns the calendar month at the time of an event. (Expressed in a standard month code where January 1900 = 001, January 1901 = 013, September 1974 = .897, etc.) (In general, the standard month is computed as twelve times the last two digits of the year plus the month sequence number.)
5. Weighted average value of variable between two events. Using this method, it is possible to compute either a simple average (each component weighted by one) or an average weighted by another variable, e.g., the average wage during a timespan, weighted by the time at each level.
6. Duration of event. Depending on the event type, this returns either the specified duration of the event or the elapsed time between the event occurrence and the occurrence of the next event of the same type.

7. Elapsed time between two events. This returns the elapsed time between the occurrence of any two events.
8. Number of times in a state between two events. This simply counts the number of events of a particular type between two time points.
9. Specified value of variable between two events. This returns the first or last (or other) value of a variable during a specified interval.
10. Number of code changes between two events. This counts the number of times a particular variable changes its value between two time points.
11. Secondary age at event. Returns male respondent's age in months at the time of an event, when jointly processing the male and female retrospectives.

Numbering Of Variables

The variables are numbered as if there were one and only one occurrence of each event type[1]. This can most easily be understood by looking at an example:

In R03, the Guatemalan female retrospective, there are 19 static variables, 24 variables for each occurrence of event type 1 (pregnancy), 3 variables for each occurrence of event type 2 (marital status), and so on through a total of 12 event types. The static variables are numbered 1 to 19, the pregnancy variables 20 to

[1] See Appendix 2.

43, the marital status ones from 44 to 46, etc. Variable 22 always refers to the result of a pregnancy, and variable 45 to the type of marital status, regardless of whether there are zero, one, or multiple occurrences of these event types for a particular woman.

Thus we see that the numbering scheme necessary for variable retrieval with the RETRO program is separate and distinct from the actual physical location of the data items in the input file (which is generated by the CONVERT program). (In the input file for the above example, if there were two pregnancy events, the 45th variable would be the second variable describing the second pregnancy, or if there were no pregnancies, the 22nd variable would be the third variable describing the first marital status.)

The variables for the male retrospective are similarly numbered, but they are offset to allow for the female variables. This is done whether the male data is being processed alone or jointly with the female data. The first R13 static variable is numbered 91, because there are 90 R03 variables; the first MF3 variable is 129, offset for the 128 MF2 variables.

Contingent Values

The concept of a contingent value is optionally used both in a retrieved variable definition and in an event definition, and greatly increases the complexity of retrieval possible. The basic idea is that retrieval is made contingent upon the value of a variable -- thus one can retrieve, for example, only non-zero wage,

or only data about pregnancies resulting in live births. The contingent value is specified on the control card, as is a flag to indicate whether retrieval should occur when the variable equals the contingent value, or is not equal to the contingent value.

The user has the option of specifying two contingent values. In this case, both of the input variables to be tested for contingency must be in the same event set, e.g., both pregnancy variables or both employment variables. (They may even be the same variable.) The two contingency tests may be combined with either an .AND. or an .OR. logical connector; i.e., either only one or both of the tests may need to be true for the particular value to be considered contingent.

Time/Event Definitions

All retrieval types except type 1 require a time/event definition; types 5 and 7 through 10 require two time/event definitions, a starting and an ending bound. The ultimate outcome of any time/event definition is a date, expressed as a standard month (see explanation of standard months above, under retrieval type 4). There are, however, many ways to specify that date, and these are grouped into eight time/event codes, discussed below.

1. Age in years. This returns the month in which the respondent attained a specified age in years; or for joint processing of the retrospectives, the month the female attained such an age.

2. Age in months. Same as 1 for age in months.
3. Calendar year. Converts the calendar year to a standard month.
4. Calendar month. This most direct form requires no conversion -- the user enters the time in the form of a standard month.
5. Event. This will probably be the most common time/event definition; it is easily the most complex. The user specifies an event, such as the respondent's third pregnancy, and the returned value is the month in which this event occurred. The methodology of this is discussed more fully below.
6. Static. This refers to a variable in the static section of the input record which contains a date (such as the age of the respondent or her birthdate). The referenced variable is assumed to be an age in years, although the coding of a control variable allows a calendar date (a standard month) or, for joint processing, the male's age in years to be processed.
7. Secondary age in years. This returns, for joint processing of the male and female retrospectives, the month in which the male respondent attained a specified age in years.
8. Secondary age in months. Same as 7 for age in months.

Let us now look at some of the options available when an event is defined (with time/event code 5). The basic specification to define an event requires an input variable number and an event number.

Unless a contingent value is specified, the input variable is used only to determine which event set (e.g., pregnancy) we are concerned with, and thus any variable in that set may be specified. When using a contingent value, however, the input variable is used both for set determination and for comparison to see if the value is contingent.

The event number specifies which occurrence of the event type is desired. In its basic form it is simply a positive integer, indicating the first event, the fifth event, or whatever. More complex specifications can be obtained using a contingent value, such as the second pregnancy resulting in a live birth.

There are also several special codes for the event number. One code allows the last event to be retrieved (which would be a different absolute sequence number for each household, since the number of event occurrences vary). Another specifies the first occurrence of the most recent value of a variable. This might be used, for example, to derive information about the most recent marriage. (This may return different information than the "last event" specification. Suppose that the last marital status was separation from her most recent husband, yet we wanted to retrieve information about that marriage, such as the woman's age at most recent marriage.)

Some additional event codes are useful when defining multiple output records from a single input record (household), through the use of record definition cards. (This technique might be used to create, for example, a record for each pregnancy.) The event number

codes allow retrieval of information about the record-defining event (e.g., the particular pregnancy we are creating the record about), or the event (in that same set) preceding or subsequent to the record-defining event.

In addition to the input variable number, the event number, and the contingent value specification, it is also possible to code a time increment (or decrement) in the event definition, and return a time that is a specified number of months before or after that which would otherwise be returned.

Retrieval Options

At this point we will return to the options on the main portion of the retrieval card (as opposed to the time/event descriptions).

An input variable number is coded in the main portion when it is appropriate to indicate the value of the variable of which we want to retrieve the value (as in retrieval types 1, 2, 5, and 9), the variable we want to compare with the contingent value (the above types plus 7 and 8), or, for type 8, to define what state (event set) we are going to count.

When retrieving the value of a variable at an event (type 2), an event number may be coded. In the absence of such a specification, it is assumed that the present event, i.e., the one happening at the month returned by the time/event definition, is desired. The event number, if specified, may be either a positive or negative integer, allowing reference to an event either before or after the present event.

When retrieving the value of a variable between two events (type 9), an event number is necessary to identify the desired occurrence. This event number may be either a positive integer or a special code allowing the last event in the interval to be retrieved.

The distinction between the event number coded in the main portion of the card and the one coded in the time/event description portion may be confusing at first. It is helpful to recall that all of the information in the time/event portion is processed first, and a resulting date is returned to the main portion. That date may come from age information, specified calendar times, or the occurrence of a particular event. The event number in the main portion refers to the event set containing the input variable (in the main portion), which may very well be a different set. For example, we might define a date with the time/event section as the time of the first pregnancy. The variable we are defining might be the wage at that time, or perhaps the wage just before that one. In the latter case, when we code an event number of -1 in the main portion of the control card, we move back to the preceding job event, whereas the event number in the time/event description could only move us among pregnancy events.

The redefinition flag increases efficiency when defining multiple output records from a single input record. In this situation it is likely that some of the variables will be identical for each record associated with a single household. This option

allows the user to flag these variables, and they are created only once per household, and saved for any subsequent use. For example, in creating a file where the unit of observation is a live birth, the age of the mother at first marriage would be the same for all of her births, and need only be searched for once.

Selection Of Records

Through the use of selection cards, it is possible to eliminate a record from further processing on the basis of one or more selection criteria. These criteria may be applied either before definition of the output variables (initial selections) or after (final selections). Initial selections operate on the input data, final selections on the output variables.

Only static variables are allowed in initial selections. Because the data structure allows the non-static variables to appear a varying number of times per household, use of these variables would result in an indeterminate selection criterion.

Each selection card contains a simple logical expression of the form:

A operation B

where A is a variable, B is another variable or a decimal constant, and operation is a relational operator (EQ, GT, LT, GE, LE, NE). A set of selection cards are, by default, strung together by the logical connector OR. Thus if C1 represents the result of the first selection card (true or false), C2 of the second, and so on, the program computes the result of C1.OR.C2.OR.C3, etc. If this final result is true, the associated record is eliminated from further processing.

It is possible to alter this default procedure in two ways: First, the default OR connector may be changed to AND in any or all cases. (The resulting expression is still evaluated from left to right, i.e., there is no implicit hierarchy of operators.) The second possible modification is through the use of logic level controls, equivalent to parentheses in algebraic expressions. In this way the user can control precisely the order in which the logical expressions are evaluated.

The variables on the selection card can be divided into two parts: one set defines the logical expression to be evaluated, the other controls how this expression is to be combined with the one on the previous card. (Clearly this second set is undefined and unnecessary for the first or a single selection card.) The first set is simply the A-variable subscript, the relational operator, a qualifier indicating whether the B-variable is a decimal value or another variable subscript, and the B-variable.

The second set of variables contains the logic level and the logical connector (OR or AND). The logic level is zero by default. In order to force certain combinations to be evaluated first, the user assigns them a higher logic level. The program determines the maximum logic level used, evaluates all such combinations, and then continues, decreasing the level by one at each step and evaluating all relevant combinations, until it finishes at logic level zero. The program can handle up to 99 logic levels, but in actuality, the user should never need more than three or four levels.

An example will clarify how the evaluation process works. For simplicity, the logical expressions on each card will be represented as C1, C2, and so on, each of which will be true or false for a

particular observation. In full form, C1 might test if variable 3 is greater than zero, C2 if variable 6 equals variable 8, or whatever. Suppose the selection criteria we wish to impose could be written algebraically as follows:

IF C1.OR.C2.OR.(C3.AND.C4).OR.((C5.OR.C6).AND.C7)

THEN eliminate record.

The logic levels and connectors on the seven selection cards would look like this (see selection card format for exact codes and columns):

LOGIC LEVEL	CONNECTOR	EXPRESSION
-	-	C1
0	OR	C2
0	OR	C3
1	AND	C4
0	OR	C5
2	OR	C6
1	AND	C7

Note that the logic levels correspond exactly to the number of sets of parentheses enclosing the connector.

Record Definitions

The standard record output is one fixed-length record (containing the variables defined on the retrieval control card) for each input record (household) read in (and not eliminated by the selection criteria). Only if the user desires more than one output

record per household is it necessary to code record definition cards. Such coding might be to create an output file where the unit of observation is, for example, a live birth, rather than a household.

The format of the record definition cards is identical to that of the selection cards, although there are a few general differences between them. In selecting records, if the final result of applying the criteria is true, the record is eliminated; in defining records, only if the result is true is a record created. Secondly, it will generally require only one or two cards to define a record, while one might expect a greater number of reasons to exclude one. Finally, the types of variables allowed for record definitions are different. This is explained below.

The concept of multiple records per household implies usage of an event group that appears a variable number of times per household. And so it is required that the first variable (the A-variable) on the first record definition card be a non-static variable, defining which event set the record definitions consider. The other variables on that and subsequent record definition cards may be static variables, other variables from the same set, or, as permitted, decimal values.

The record definition process works as follows. For each household, the program checks to see how many events appear of the type indicated by the first variable on the first definition card. If that variable is the pregnancy result, for example, the number of pregnancies is computed. This is the number of potential output records for that household. Then it loops through these event

occurrences, checking to see if each one satisfies the complete record definition criteria. Each time it finds one that does, a complete output record is created, before moving on to the next.

There are a few features on the retrieval control cards that are specifically tailored for record definitions. The event number in the time/event definition portion of the card allows codes 96 to 98 to specify the record-defining event, and the events preceding and following it. An example will clarify what this means. Suppose we are creating a record for each live birth, and a particular woman had six pregnancies, of which the first, third, fourth, and fifth resulted in live births. Suppose also that two of the output variables defined are the sex of the record-defining pregnancy (the value of the variable sex of child at the time of the record-defining event), and the sex of the preceding pregnancy result, if a live birth. For this woman, four records would be created. The first variable of each would be the sex of the first, third, fourth, and fifth pregnancies. The second variable would be zero for the first two records, and the sex of the third and fourth pregnancies for the latter two records. (The first zero is because there is no preceding pregnancy; the second because the preceding pregnancy did not result in a live birth. (This would be defined using contingent values; see section on retrieval cards for details.))

Another retrieval card option, the redefinition flag, increases efficiency when creating several records per household. It is likely that some of the variables will be identical for every record

created from the same household. This option allows the user to flag these variables, and they are created only once per household, and saved for any subsequent use. In the above example, the age of the mother at first marriage, e.g., would be the same for all of her births, and need only be searched for once.

Transformations

Transformations may be done both on the input data from the retrospective questionnaires (initial transformations) and on the retrieved variables (final transformations).

Initial transformations may be done on any variable, but if the variable is not a static variable, the transformation will be done for every occurrence of that variable in a given household. For example, if the R03 salary variable (86) is divided by ten, this will be done for every employment event recorded. An initial non-static transformation may involve several variables in the same event set, but only one event set may be evoked. Thus it is possible to use several pregnancy variables in one transformation, but it is not possible to mix a pregnancy variable with an employment variable.

It is important never to specify a date or duration variable as the target variable of a transformation, for it is through these date variables that the program determines which values to retrieve.

Initial transformations are done on the input variables, and use the variable sequence number list. Final transformations are done on the variables defined on the retrieval control cards; these are numbered sequentially, thus variable one would refer to the variable defined on the first retrieval card.

Recodes

The recode option allows the user to modify the input data values. Each recode card specifies a particular value or set of values of a test variable which will cause another specified value to assigned (or, alternatively, added to) a target variable. The test variable and the target variable must be in the same event set (or both static variables); they may be the same variable. Recodes are performed sequentially, both before and after the initial transformations.

It is important never to specify a date or duration variable as the target variable of a recode, for it is through these date variables that the program determines which values to retrieve.

Some types of recoding operations may be done with the transformation cards. For example, a variable may be set equal to zero by multiplying it by zero; a variable may be set equal to another variable by adding zero to the other variable and then storing it atop the variable.

Appendix 1:
Deck Order and Control Card Formats

DECK ORDER

1. Run Control Card
2. Recode Cards (1 to NRC)
3. Initial Transformation Cards (1 to NT1)
4. Second Recode Cards (1 to NRC2)
5. Initial Selections (1 to NS1)
6. Record Definitions (1 to NRD)
7. Output Variable Definitions
(retrieval cards) (1 to MOUT)
8. Final Transformation Cards (1 to NT2)
9. Final Selections (1 to NS2)
10. Input Data (if in card stream)

GENERAL INFORMATION

Information about input file(s) (number of variables, distribution, etc.) is built into program, rather than being fed in by user each time.

Input is read from unit 8; output written on 9. For joint processing of the male and female retrospectives, the female (primary) data is read from unit 8, the male (secondary) data is read from unit 10. For joint processing, both files should be sorted into ascending order by case ID (Malaysia) or village and family IDs (Guatemala), i.e., first all the families in the lowest numbered village, in ascending order, then all the families in the next village, etc.

The total number of output variables, TOUT, is equal to the number of retrieved variables, MOUT, plus the number of variables added by the final transformations, NA2.

If the output records are unformatted, the DCB characteristics for FT09 will be: RECFM=VBS,LRECL=2*TOUT+4.

Formatted records will be in format (TOUT I6), with RECFM=FB,LRECL=x, where x is 6*TOUT.

RUN CONTROL CARD

col.	item	array name
1-2	User ID (RC)	
3-5	# of Recodes	NRC
6-8	# of Initial Transformations	NT1
9-11	# of Initial Selections	NS1
12-14	# of Record Definitions	NRD
15-17	# of Retrieval Cards	MOUT
18-20	# of Final TRs	NT2
21-23	# of Variables Added by Final TRs	NA2
24-26	# of Final Selections	NS2
27	T if Summary Statistics desired	ISTAT
29-31	Questionnaire # (e.g. R03, R13, MF2, MF3; R23 or M23 indicate joint processing of male and female retrospectives)	IQUES
32	T if Formatted Output Records desired	IFORM
34-36	# of Records to Print (default=10)	NUMP
37	T if input records are halfword integers (Guatemalan option only)	ISTAR2
39	T if no testing for unchronological dates in input data is to be done	NCHRON
41-43	# of Second Recodes	NRC2
44-45	# of Records to Process, if not all	NSTOP

TRANSFORMATION CARD

- col. item
- 1-2 User ID (IT for initial; FT for final)
 - 3-5 A-variable Subscript
 - 6-8 B-variable Subscript
 - 9-10 Transformation Code
 - 11-13 Location for Transformed Variable (C-variable)
 - 14-23 Constant (D-"variable")

Transformation Codes

- 01 Addition $C=A+B$
- 02 Subtraction $C=A-B$
- 03 Multiplication $C=A*B$
- 04 Division $C=A/B$
(integer division with result rounded)
- 05 Addition of a Constant $C=A+D$
- 06 Subtraction of a Constant $C=A-D$
- 07 Multiplication of a Constant $C=A*D$
- 08 Division by a Constant $C=A/D$
- 09 Division into a Constant $C=D/A$
- 10 Absolute Value $C=ABS(A)$
- 11 Variable to a Constant power $C=A**D$
- 12 Constant to a Variable power $C=D**A$
- 13 Variable to a Variable power $C=A**B$
- 14 Variable Subtracted from a Constant $C=D-A$

SELECTION and RECORD DEFINITION CARDS

col.	format type	item
1-2		User ID (IS for initial selections; FS for final; RD for record definitions)
3-4	I	Logic Level (default 0)
5	L	Logical Connector (to previous card) T=.AND. F or blank=.OR.
6-8	I	A-variable Subscript
9-10	A	Logical Operation (EQ,GE,LE,GT,LT,NE)
11	L	Qualifier T=B-variable a decimal value F or blank=B a variable subscript
13-20	I	B-variable

For selections, if TRUE, record eliminated.

For record definitions, if TRUE, record created.

RECODE CARDS

var. name	col.	format type	item
	1-2		User ID (IF)
ITS	3-5	I	Test Variable
IOP	6-7	A	Logical Operation (EQ,GE,LE,GT,LT,NE)
IOR	8-12	I	Original Decimal Value
ITR	13-15	I	Target Variable (must be in same event set as test variable) (both can be static variables)
IRC	16-20	I	Recoded Decimal Value
JFLAG	21	L	Type of Recode T=recoded value added to existing value of target var. F or blank=recoded value replaces existing value of target variable

RETRIEVAL CONTROL CARD

Var. #	A	T	name	col.	Description	Notes	Relevancy for retrieval type: (R=required O=optional N=not applic.)										
							1	2	3	4	5	6	7	8	9	10	11

1-2 User ID (OV)

1 M(1) I 3-4 Retrieval Type Possible values: R R R R R R R R R R R R R
 1=Static
 2=Value of variable at event
 3=Age in months at event
 4=Calendar time (standard month)
 5=Weighted average between events
 6=Duration of event
 Time/Event Code 1 must = 5 to indicate desired event.
 7=Elapsed time between 2 events
 8=Number of times in state between 2 events
 9=Value of variable between 2 events (which value is determined by Event #)
 10=# of code changes between 2 events
 11=secondary age in months at event

2 M(2) I 5-7 Input Variable # Nec. for type 7 R R N N R N O R R R N
 if contingent value

3 M(3) I 8-9 Event # For type 2, N O N N N N N N R N N
 Retrieves nth state after Event 1 (below).
 Zero or blank=Present
 Can be negative
 For type 9,
 Non-negative, 1 to n, or 99=Last event

(continued on next page)

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4	M(22)	I	10	Conting. Value Flag		O O N N O N O O O N N
					0=No contingent value 1=One contingent value 2=Two contingent values	
5	M(4)	I	11-15	Contingent Value 1	If item 2 contains this value during timespan, cumulation occurs	
6	LN(1)	L	16	.NOT.Contin.Value 1	If T, .NOT.	
32	LN(4)	L	17	Con.Value Connector	If item 4 is 2, connects the contingent conditions. T=.AND. F or blank=.OR.	
33	M(23)	I	18-20	Input Variable 2	Only used when item 4 is 2 Must be in same set as item 2.	
34	M(24)	I	21-24	Contingent Value 2	Of item 33	
35	LN(9)	L	25	.NOT.Contin.Value 2	If T, .NOT.	
7	ONAME	A	26-33	Output Variable Name		O O O O O O O O O O O
8	M(10)	I	34-36	Subscript of Weight	If unspec. for ret. type 5, 1 assumed	N N N N O N N N N N N
9	RFLAG	L	37	Redefinition Flag	If T, this var. need only be defined once when multiple records created from one HH	O O O O O O O O O O O

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EVENT 1

- 10 M(5 I 38 Time/Event Code 1 Possible values: N R R R R R R R R R R
 1=Age in years
 2=Age in months
 3=Calendar year(last 2 digits)
 4=Calendar month(std.)
 5=Event
 6=Static variable
 7=Secondary age in years
 8=Secondary age in months
 NOTE: For event codes 1-4,7,8, only item 11 required. For code 5, 11 & 12 required, 13-20 optional. For code 6, 11 required, 12 optional. For retrieval type 6, code 5.
- 11 M(6 I 39-42 Input Var.,Time or Age
- 12 M(7 I 43-44 Event # Non-negative; 1 to n.
 Special values:
 99=Last event
 95=First occurrence of most recent value of Input var.
 97=Record-defining event
 96=Event before rec-def.
 98=Event after rec-def.
 For static vars.(time/event code 6):
 0 or blank=var.is an age in years
 1=var.is a calendar date
 2=var.is secondary age in years
- 13 M(9 I 45-48 Time Increment In months. Can be negative.
- 14 M(16 I 49 Conting. Value Flag Only used for events (code 5)
 0=No contingent value
 1=One contingent value
 2=Two contingent values
- 15 M(8 I 50-53 Contingent Value 1 If item 11 contains this value during timespan,cumulation occurs.
- 16 LN(2 L 54 .NOT.Contin.Value 1 If T, .NOT.
- 17 LN(5 L 55 Con.Value Connector If item 14 is 2, connects the contingent conditions.
 T=.AND.
 F or blank=.OR.

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- 18 M(17 I 56-58 Input Variable 2 Only used when item 14 is 2
Must be in same set as item 11.
- 19 M(18 I 59-62 Contingent Value 2 Of item 18
- 20 LN(7 L 63 .NOT.Contin.Value 2 If T, .NOT.
- 36 E2FLAGL 64 Second Event Flag If T, event on continuation card

EVENT 2 For comments on values and usage, see Event 1 above.
These variables are coded on a retrieval continuation card, included only when a second event definition is required (retrieval types 5, 7-10). When this card is included, col.64 of the first retrieval card must contain T.

- 21 M(11 I 38 Time/Event Code 2 N N N N R N R R R R R
- 22 M(12 I 39-42 Input Var., Time or Age
- 23 M(13 I 43-44 Event #
- 24 M(15 I 45-48 Time Increment
- 25 M(19 I 49 Conting. Value Flag (Only used for code 5)
- 26 M(14 I 50-53 Contingent Value 1 Of item 22
- 27 LN(3 L 54 .NOT.Contin.Value 1
- 28 LN(6 L 55 Con.Value Connector
- 29 M(20 I 56-58 Input Variable 2
- 30 M(21 I 59-62 Contingent Value 2 Of item 1
- 31 LN(8 L 63 .NOT.Contin.Value 2

Appendix 2:
Variable Sequence Numbers

R03 Variable Sequence Numbers
Guatemalan Female Retrospective

Event Number	Variable Sequence Number	Description	Original Card Number	Original Columns

STATIC VARIABLES				
	01	form number	0	2-3
	02	village number	0	7-8
	03	family number	0	9-11
	04	respondent ID	0	12-13
	05	sex	0	14
	06	interview date: day	0	15-16
	07	interview date: std.month	0	17-20
	08	birthdate: day	0	21-22
	09	birthdate: std.month	0	23-26
	10	age in years	0	27-28
	11	age verification	0	29
	12	number of adopted children	0	30
	13	number of pregnancies	0	31-32
	14	pregnant now	0	33
	15	number of living children	0	34-35
	16	number of dead children	0	36-37
	17	number of miscarriages & abortions	0	38
	18	number of stillbirths	0	39
	19	interviewer number	0	40
EVENT 1-- PREGNANCY				
	20	child birthdate: std.month	1	41-42
	21	child birthdate: day	1	39-40
	22	pregnancy result	1	31
	23	reason for miscarriage or abortion	1	32
	24	child ID	1	33-34
	25	sex	1	35
	26	age in months	1	36-38
	27	age verification	1	43
	28	child deathdate: std.month	1	46-49
	29	child deathdate: day	1	44-45
	30	length of life (if dead)(3-day)	1	50-52
	31	place of childbirth	1	53
	32	assistance in childbirth	1	54
	33	reason hospitalized or not	1	55
	34	last month lactated (std.)	1	56-57
	35	length of lactation (3-day)	1	58-60
	36	reason for short nursing	1	61
	37	month began to wean (std.)	1	62-63
	38	age of child at weaning (3-day)	1	64-66
	39	first food	1	67-69
	40	month of first menstruation (std)	1	70-71
	41	interval until menstruation(3-day)	1	72-74
	42	child away duration(total months)	4	31-33
	43	reason child away	4	34

R03 Variable Sequence Numbers (continued)

EVENT 2 -- MARITAL STATUS			
44	date	2	27-28
45	marital status	2	29
46	husband number	2	30
EVENT 3 -- CONTRACEPTION			
47	date	2	32-33
48	duration (3-day)	2	34-36
49	method of contraception	2	31
EVENT 4 -- ILLNESS			
50	date	2	37-38
51	duration (3-day)	2	39-40
52	type of illness	2	41-42
EVENT 5 -- SEPARATION			
53	date	2	27-28
54	duration (3-day)	2	44-46
55	type of separation	2	43
EVENT 6 -- SPOUSE OCCUPATION			
56	date	2	??
57	spouse occupation code	2	47-48
EVENT 7 -- MIGRATION			
58	date	3	27-28
59	type of place	3	29
60	place ID	3	30-32
EVENT 8 -- HOUSE DATA			
61	date	3	33-34
62	tenancy type	3	35
63	ownership type	3	36
64	rent or mortgage per month	3	37-38
65	number of rooms	3	39
66	roof material	3	40
67	wall material	3	41
68	floor material	3	42
69	family type	3	43
70	number of persons	3	44-45
71	number of children who work	3	46
72	number of adults who work	3	47
EVENT 9 -- RELIGION			
73	date	3	33-34
74	religion	3	48
EVENT 10 -- HH HELP WITH CHILDREN			
75	date	4	27-28
76	who	4	29
77	regularity	4	30

R03 Variable Sequence Numbers (continued)

EVENT 11 -- SCHOOLING

78	start date (std.month)	4	35-36
79	duration (3-day)	4	37-38
80	type of schooling	4	39-40

EVENT 12 -- EMPLOYMENT

81	start date	5	27-28
82	duration (3-day)	5	42-44
83	type of job	5	29-30
84	place of work	5	31
85	type of industry	5	32
86	salary	5	33-36
87	frequency of pay	5	37
88	payment in kind	5	38
89	days per week	5	39
90	hours per day	5	40-41

NOTE: Calendar dates are recorded in the data using a standard month code incorporating the year and month (see Appendix 3). Duration of time variables are recorded either in months or in a three-day code, as indicated in the variable descriptions. The three-day code equals 1 for 0-3 days, 2 for 4-6 days, and so on through 990, indicating a period longer than 8 years, 3 months.

R13 Variable Sequence Numbers
Guatemalan Male Retrospective

Event Number	Variable Sequence Number	Description	Original Card Number	Original Columns
STATIC VARIABLES				
	91	form number	0	2-3
	92	village number	0	7-8
	93	family number	0	9-11
	94	respondent ID	0	12-13
	95	sex	0	14
	96	interview date: day	0	15-16
	97	interview date: std.month	0	17-20
	98	birthdate: day	0	21-22
	99	birthdate: std.month	0	23-26
	100	age in years	0	27-28
	101	age verification	0	29
	102	# of children born alive	0	30-31
	103	# of kids, present nuclear family	0	32-33
	104	# of children adopted from family	0	34-35
	105	# of other adopted children	0	36-37
	106	interviewer number	0	38
	107	birth order of respondent	2	45-46
	108	number of kids his mother had	2	47-48
EVENT 13 -- MIGRATION				
	109	date	1	25-26
	110	type of place	1	27
	111	place ID	1	28-30
	112	residence	1	31
EVENT 14 -- SUPPORT OF PARENTS' FAMILY				
	113	date	1	35-36
	114	who supports family	1	32
	115	how family supported	1	33-34
EVENT 15 -- EMPLOYMENT				
	116	start date	1	35-36
	117	duration (in months)	1	54-56
	118	type of job	1	37-38
	119	occupation code	1	39-40
	120	place of work	1	41-43
	121	type of enterprise	1	44
	122	salary	1	45-48
	123	frequency of pay	1	49
	124	payment in kind	1	50
	125	days per week	1	51
	126	hours per day	1	52-53
	127	# years worked in seasonal occ.	1	57-58

R13 Variable Sequence Numbers (continued)

EVENT 15 -- EMPLOYMENT (continued)			
128	activities	1	59-60
129	amount of land planted	1	61-63
130	land units	1	64-65
131	number of employees	1	66-68
132	who migrated for work	1	69
133	how often home	1	70
EVENT 16 -- MARITAL STATUS			
134	date	2	21-22
135	marital status	2	23
136	wife number	2	24
137	number of children of wif	2	25-26
EVENT 17 -- HOUSE DATA			
138	date	2	27-28
139	tenancy type	2	29
140	ownership type	2	30
141	rent or mortgage per month	2	31-32
142	land ownership	2	33
143	roof material	2	34
144	wall material	2	35
145	floor material	2	36
146	family type	2	37
147	number of persons	2	38-39
148	number of children who work	2	40
149	number of adults who work	2	41
150	number of other houses	2	42
151	number of other land parcels	2	43
EVENT 18 -- RELIGION			
152	date	2	27-28
153	religion	2	44
EVENT 19 -- HELP WITH WORK			
154	date	3	21-22
155	who	3	23-24
156	frequency	3	25
EVENT 20 -- ILLNESS			
157	date	3	26-27
158	duration (3-day code)	3	28-29
159	type of illness	3	30-31
EVENT 21 -- SCHOOLING			
160	start date	3	32-33
161	duration (3-day code)	3	34-35
162	type	3	36-37

R13 Variable Sequence Numbers (continued)

EVENT 22	-- ORGANIZATIONS		
163	date	3	21-22
164	type of organization	3	38-39
165	duties or offices held	3	40-41
EVENT 23	-- CULTIVATION OF OWNED LAND		
166	date	3	21-22
167	amount of land worked	3	42-44
168	land units	3	45-46
169	land ownership	3	47
EVENT 24	-- MOTORIZED VEHICLES		
170	date	3	21-22
171	type of vehicle	3	48
172	vehicle type	3	56
EVENT 25	-- LIVESTOCK		
173	date	3	21-22
174	extraordinary # of livestock	3	49-50
EVENT 26	-- EXTRAORDINARY INCOME		
175	date	3	21-22
176	type of extraordinary income	3	51
177	quantity of extra income	3	52-55

NOTE: Calendar dates are recorded in the data using a standard month code incorporating the year and month (see Appendix 3). Duration of time variables are recorded either in months or in a three-day code, as indicated in the variable descriptions. The three-day code equals 1 for 0-3 days, 2 for 4-6 days, and so on through 990, indicating a period longer than 8 years, 3 months.

MF2 Variable Sequence Numbers
 Malaysian Female Retrospective

Event Number	Variable Sequence Number	Description	Original Ques./ Card Number (col.3)	Original Columns
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 STATIC VARIABLES

001	form number	MF2 /	2
002	survey round number	MF2 /	1
003	case I.D. number	MF2 /	04-07
004	area reference number	MF1 / 9	12-17
005	interviewer number	MF1 / 9	27-28
006	witnessed by supervisor	MF1 / 9	29-30
007	call at which completed	MF1 / 9	34
008	interview date: day	MF1 / 9	35-36
009	interview date: std.month	MF1 / 9	37-40
010	length of interview	MF1 / 9	41-43
011	language of interview	MF1 / 9	44-45
012	# children in HH 9 or less	MF1 / 9	50-51
013	# children in HH 10-14	MF1 / 9	52-53
014	# adults in HH 15 and over	MF1 / 9	54-55
015	respondant I.D.	MF1 /	11-13
016	months stayed last year	MF1 /	23-24
017	birthdate: std.month	MF1 /	25-28
018	birthdate: day	MF1 /	29-30
019	sex	MF1 /	31
020	race	MF1 /	32
021	document inspected	MF1 /	33
022	age at last birthday	MF1 /	34-35
023	marital status	MF1 /	36
024	work status	MF1 /	37
025	literacy	MF1 /	38-39
026	education status	MF1 /	40
027	educ. level completed	MF1 /	41-42
028	started school pre-54	MF1 /	43
029	highest certificate received	MF1 /	44
030	medium of instruction	MF1 /	45
031	type of school	MF1 /	46

EVENT: 1 -- PREGNANCY

032	date (std.month)	MF2 / 1	13-16
033	actual month coded	MF2 / 1	15-16
034	event serial number	MF2 / 1	08-09
035	card type	MF2 / 1	10
036	day	MF2 / 1	17-18
037	supporting documents inspected	MF2 / 1	19
038	duration of pregnancy	MF2 / 1	20-21
039	reason for abortion/miscarriage	MF2 / 1	22
040	pregnancy outcome	MF2 / 1	23
041	sex of child	MF2 / 1	24
042	HH member serial number	MF2 / 1	25-27
043	birth weight	MF2 / 1	28-31

MF2 Variable Sequence Numbers (continued)

EVENT 1 -- PREGNANCY (continued)

044	approximate birth weight	MF2 / 1	32
045	death date (std.month)	MF2 / 1	33-36
046	death day	MF2 / 1	37-38
047	supporting document inspected	MF2 / 1	39
048	was child breastfed	MF2 / 1	40
049	time period of breastfeeding	MF2 / 1	41-42
050	time unit	MF2 / 1	43
051	currently breastfeeding	MF2 / 1	44
052	reason short breastfeeding	MF2 / 1	45-46
053	time first food	MF2 / 1	47-48
054	time unit	MF2 / 1	49
055	interval until menstruation	MF2 / 1	50-51
056	time unit	MF2 / 1	52
057	contraceptive used longest	MF2 / 1	53-54
058	contraceptive used next longest	MF2 / 1	55-56
059	total period of protection	MF2 / 1	57-59
060	time unit	MF2 / 1	60
061	age first menstruation	MF2 / 1	61-62
062	date first menst.(std.month)	MF2 / 1	63-66
063	age ceased menstruation	MF2 / 1	67-68
064	date ceased menst.(std.month)	MF2 / 1	69-72

EVENT 2 -- MARRIAGE

065	date (std.month)	MF2 / 2	13-16
066	actual month coded	MF2 / 2	15-16
067	event serial number	MF2 / 2	08-09
068	card type	MF2 / 2	10
069	marital status	MF2 / 2	17
070	husband's occupation	MF2 / 2	18-20
071	months of separation	MF2 / 2	21-22
072	completeness of separation	MF2 / 2	23

EVENT 3 -- MIGRATION/HOUSING

073	date (std.month)	MF2 / 3	13-16
074	actual month coded	MF2 / 3	15-16
075	event serial number	MF2 / 3	08-09
076	card type	MF2 / 3	10
077	town/mukim of residence	MF2 / 3	17-18
078	state or country of residence	MF2 / 3	19-20
079	tenure in house	MF2 / 3	21
080	monthly rental	MF2 / 3	22-25
081	furnishing of rented accom.	MF2 / 3	26
082	number living/sleeping rooms	MF2 / 3	27-28
083	material of outer walls	MF2 / 3	29
084	water supply	MF2 / 3	30
085	electricity	MF2 / 3	31
086	toilet facilities	MF2 / 3	32
087	shower/long bath	MF2 / 3	33

EVENT 4 -- CHILD CARE

088	date (std.month)	MF2 / 4	13-16
089	actual month coded	MF2 / 4	15-16

MF2 Variable Sequence Numbers (continued)

EVENT 4 -- CHILD CARE (continued)

090	event serial number	MF2 / 4	08-09
091	card type	MF2 / 4	10
092	parents/grandparents	MF2 / 4	17
093	other relatives 10 and up	MF2 / 4	18
094	other relative under 10	MF2 / 4	19
095	servants	MF2 / 4	20
096	other persons	MF2 / 4	21
097	own children under 15 at home	MF2 / 4	22
098	most frequent type of help	MF2 / 4	23
099	2nd most frequent type of help	MF2 / 4	24
100	3rd most frequent type of help	MF2 / 4	25
101	total period of help received	MF2 / 4	26-27
102	time unit	MF2 / 4	28
103	number of hours per week	MF2 / 4	29-30

EVENT 5 -- EDUCATION and TRAINING

104	date (std.month)	MF2 / 5	13-16
105	actual month coded	MF2 / 5	15-16
106	event serial number	MF2 / 5	08-09
107	card type	MF2 / 5	10
108	education/training status	MF2 / 5	17
109	full/part-time educ./training	MF2 / 5	18

EVENT 6 -- WORK HISTORY

110	date (std.month)	MF2 / 6	13-16
111	actual month coded	MF2 / 6	15-16
112	event serial number	MF2 / 6	08-09
113	card type	MF2 / 6	10
114	number of jobs	MF2 / 6	17
115	activity status, main job	MF2 / 6	18
116	activity status, second job	MF2 / 6	19
117	activity descrip., main	MF2 / 6	20-21
118	activity descrip., second	MF2 / 6	22-23
119	distance to work, main	MF2 / 6	24
120	amount of earnings (*10)	MF2 / 6	25-30
121	unit of earnings	MF2 / 6	31
122	type of kind or bonus	MF2 / 6	32
123	amount of kind	MF2 / 6	33-37
124	unit of kind	MF2 / 6	38
125	hours worked per week	MF2 / 6	39-40
126	weeks of work code	MF2 / 6	41
127	weeks looking for work	MF2 / 6	42-43
128	overseas next period	MF2 / 6	44

NOTE: Calendar dates are recorded in the data using a standard month code incorporating the year and month (see Appendix 3).

MF3 Variable Sequence Numbers
Malaysian Male Retrospective

Event Number	Variable Sequence Number	Description	Original Ques./ Card Number(col.3)	Original Columns
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STATIC VARIABLES

129	form number	MF3 /	2
130	survey round number	MF3 /	1
131	case I.D. number	MF3 /	04-07
132	area reference number	MF1 / 9	12-17
133	interviewer number	MF1 / 9	27-28
134	witnessed by supervisor	MF1 / 9	29-30
135	call at which completed	MF1 / 9	34
136	interview date: day	MF1 / 9	35-36
137	interview date: std.month	MF1 / 9	37-40
138	length of interview	MF1 / 9	41-43
139	language of interview	MF1 / 9	44-45
140	# children in HH 9 or less	MF1 / 9	50-51
141	# children in HH 10-14	MF1 / 9	52-53
142	# adults in HH 15 and over	MF1 / 9	54-55
143	respondant I.D.	MF1 /	11-13
144	months stayed last year	MF1 /	23-24
145	birthdate: std.month	MF1 /	25-28
146	birthdate: day	MF1 /	29-30
147	sex	MF1 /	31
148	race	MF1 /	32
149	document inspected	MF1 /	33
150	age at last birthday	MF1 /	34-35
151	marital status	MF1 /	36
152	work status	MF1 /	37
153	literacy	MF1 /	38-39
154	education status	MF1 /	40
155	educ. level completed	MF1 /	41-42
156	started school pre-54	MF1 /	43
157	highest certificate received	MF1 /	44
158	medium of instruction	MF1 /	45
159	type of school	MF1 /	46

EVENT 7 -- EDUCATION and TRAINING

160	date (std.month)	MF3 / 1	13-16
161	actual month coded	MF3 / 1	15-16
162	event serial number	MF3 / 1	08-09
163	card type	MF3 / 1	10
164	education/training status	MF3 / 1	17
165	full/part-time educ./training	MF3 / 1	18

MF3 Variable Sequence Numbers (continued)

EVENT 8 -- MARRIAGE

166	date (std.month)	MF3 / 1	13-16
167	actual month coded	MF3 / 1	15-16
168	event serial number	MF3 / 1	08-09
169	card type	MF3 / 1	10
170	marital status	MF3 / 1	19
171	wife number	MF3 / 1	20

EVENT 9 -- EMPLOYMENT

172	date (std.month)	MF3 / 2	13-16
173	actual month coded	MF3 / 2	15-16
174	event serial number	MF3 / 2	08-09
175	card type	MF3 / 2	10
176	number of jobs	MF3 / 2	17
177	activity status, main job	MF3 / 2	18
178	activity status, second job	MF3 / 2	19
179	activity descrip., main	MF3 / 2	20-21
180	activity descrip., second	MF3 / 2	22-23
181	distance to work, main	MF3 / 2	24
182	amount of earnings (*10)	MF3 / 2	25-30
183	unit of earnings	MF3 / 2	31
184	type of kind or bonus	MF3 / 2	32
185	amount of kind	MF3 / 2	33-37
186	unit of kind	MF3 / 2	38
187	hours worked per week	MF3 / 2	39-40
188	weeks of work code	MF3 / 2	41
189	weeks looking for work	MF3 / 2	42-43
190	overseas next period	MF3 / 2	44

EVENT 10 -- PROPERTY and GIFTS

191	date (std.month)	MF3 / 3	13-16
192	actual month coded	MF3 / 3	15-16
193	event serial number	MF3 / 3	08-09
194	card type	MF3 / 3	10
195	property type	MF3 / 3	17
196	method of acquisition/disposal	MF3 / 3	18
197	amount of land	MF3 / 3	19-22
198	unit of land	MF3 / 3	23
199	property value	MF3 / 3	24-29
200	gift type	MF3 / 3	30
201	method of acquisition	MF3 / 3	31
202	value of item	MF3 / 3	32-37

NOTE: Calendar dates are recorded in the data using a standard month code incorporating the year and month (see Appendix 3).

Appendix 3:
Standard Month Codes

STANDARD MONTH CODES

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1900	001	002	003	004	005	006	007	008	009	010	011	012
1901	013	014	015	016	017	018	019	020	021	022	023	024
1902	025	026	027	028	029	030	031	032	033	034	035	036
1903	037	038	039	040	041	042	043	044	045	046	047	048
1904	049	050	051	052	053	054	055	056	057	058	059	060
1905	061	062	063	064	065	066	067	068	069	070	071	072
1906	073	074	075	076	077	078	079	080	081	082	083	084
1907	085	086	087	088	089	090	091	092	093	094	095	096
1908	097	098	099	100	101	102	103	104	105	106	107	108
1909	109	110	111	112	113	114	115	116	117	118	119	120
1910	121	122	123	124	125	126	127	128	129	130	131	132
1911	133	134	135	136	137	138	139	140	141	142	143	144
1912	145	146	147	148	149	150	151	152	153	154	155	156
1913	157	158	159	160	161	162	163	164	165	166	167	168
1914	169	170	171	172	173	174	175	176	177	178	179	180
1915	181	182	183	184	185	186	187	188	189	190	191	192
1916	193	194	195	196	197	198	199	200	201	202	203	204
1917	205	206	207	208	209	210	211	212	213	214	215	216
1918	217	218	219	220	221	222	223	224	225	226	227	228
1919	229	230	231	232	233	234	235	236	237	238	239	240
1920	241	242	243	244	245	246	247	248	249	250	251	252
1921	253	254	255	256	257	258	259	260	261	262	263	264
1922	265	266	267	268	269	270	271	272	273	274	275	276
1923	277	278	279	280	281	282	283	284	285	286	287	288
1924	289	290	291	292	293	294	295	296	297	298	299	300
1925	301	302	303	304	305	306	307	308	309	310	311	312
1926	313	314	315	316	317	318	319	320	321	322	323	324
1927	325	326	327	328	329	330	331	332	333	334	335	336
1928	337	338	339	340	341	342	343	344	345	346	347	348
1929	349	350	351	352	353	354	355	356	357	358	359	360
1930	361	362	363	364	365	366	367	368	369	370	371	372
1931	373	374	375	376	377	378	379	380	381	382	383	384
1932	385	386	387	388	389	390	391	392	393	394	395	396
1933	397	398	399	400	401	402	403	404	405	406	407	408
1934	409	410	411	412	413	414	415	416	417	418	419	420
1935	421	422	423	424	425	426	427	428	429	430	431	432
1936	433	434	435	436	437	438	439	440	441	442	443	444
1937	445	446	447	448	449	450	451	452	453	454	455	456
1938	457	458	459	460	461	462	463	464	465	466	467	468
1939	469	470	471	472	473	474	475	476	477	478	479	480
1940	481	482	483	484	485	486	487	488	489	490	491	492

STANDARD MONTH CODES (continued)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1941	493	494	495	496	497	498	499	500	501	502	503	504
1942	505	506	507	508	509	510	511	512	513	514	515	516
1943	517	518	519	520	521	522	523	524	525	526	527	528
1944	529	530	531	532	533	534	535	536	537	538	539	540
1945	541	542	543	544	545	546	547	548	549	550	551	552
1946	553	554	555	556	557	558	559	560	561	562	563	564
1947	565	566	567	568	569	570	571	572	573	574	575	576
1948	577	578	579	580	581	582	583	584	585	586	587	588
1949	589	590	591	592	593	594	595	596	597	598	599	600
1950	601	602	603	604	605	606	607	608	609	610	611	612
1951	613	614	615	616	617	618	619	620	621	622	623	624
1952	625	626	627	628	629	630	631	632	633	634	635	636
1953	637	638	639	640	641	642	643	644	645	646	647	648
1954	649	650	651	652	653	654	655	656	657	658	659	660
1955	661	662	663	664	665	666	667	668	669	670	671	672
1956	673	674	675	676	677	678	679	680	681	682	683	684
1957	685	686	687	688	689	690	691	692	693	694	695	696
1958	697	698	699	700	701	702	703	704	705	706	707	708
1959	709	710	711	712	713	714	715	716	717	718	719	720
1960	721	722	723	724	725	726	727	728	729	730	731	732
1961	733	734	735	736	737	738	739	740	741	742	743	744
1962	745	746	747	748	749	750	751	752	753	754	755	756
1963	757	758	759	760	761	762	763	764	765	766	767	768
1964	769	770	771	772	773	774	775	776	777	778	779	780
1965	781	782	783	784	785	786	787	788	789	790	791	792
1966	793	794	795	796	797	798	799	800	801	802	803	804
1967	805	806	807	808	809	810	811	812	813	814	815	816
1968	817	818	819	820	821	822	823	824	825	826	827	828
1969	829	830	831	832	833	834	835	836	837	838	839	840
1970	841	842	843	844	845	846	847	848	849	850	851	852
1971	853	854	855	856	857	858	859	860	861	862	863	864
1972	865	866	867	868	869	870	871	872	873	874	875	876
1973	877	878	879	880	881	882	883	884	885	886	887	888
1974	889	890	891	892	893	894	895	896	897	898	899	900
1975	901	902	903	904	905	906	907	908	909	910	911	912
1976	913	914	915	916	917	918	919	920	921	922	923	924
1977	925	926	927	928	929	930	931	932	933	934	935	936
1978	937	938	939	940	941	942	943	944	945	946	947	948
1979	949	950	951	952	953	954	955	956	957	958	959	960
1980	961	962	963	964	965	966	967	968	969	970	971	972

Appendix 4:
Sample Deck Setups and Outputs

EXAMPLE 1
 Joint Processing of the Guatemalan
 Male and Female Retrospectives

```
//          JOB
//BOTH EXEC PGM=RETROALL,REGION=150K
//STEPLIB DD DSN=B.B9910.A1789.IVALIB,DISP=SHR
//GO.FT05F001 DD DDNAME=SYSIN
//GO.FT06F001 DD SYSOUT=A
//GO.FT07F001 DD SYSOUT=B
//GO.FT08F001 DD ----> R03 CONVERTed Input Data Location
//GO.FT09F001 DD ----> Location for Output File
//GO.FT10F001 DD ----> R13 CONVERTed Input Data Location
//GO.SYSIN DD *
RC          6          T R23      1T T
OV11          HUSBAGEI      6009701          (1)
OV02080-11    OT          WSCHOOL      6000701          (2)
OV05126          AVGHOURS      5002201          T (3)
          5002299
OV06          DUR.HELP      5007601          (4)
OV07 45 1 5          W MS=5      10015          T (5)
          6000701
OV10045          W#MSTATS      5004601      1 1          T (6)
          6000701
/*
```

The options on the Run Control card specify that six Retrieval cards are included, that summary statistics are to be calculated, that the R03 and R13 are to be processed jointly, that one household is to be printed, that the input data is stored as halfword integers, and that no chronological testing should be done. The six output variables are as follows:

- (1) The husband's age in months at the interview.
- (2) The highest level of schooling attained by the wife at the time of the interview. (The event number of -1 and the nonzero contingency force the program to look back for the most recent schooling event recorded. Otherwise a value of zero would be returned unless the woman were in school at the date of the interview. This is because schooling contains a coded duration and thus does not continue until a subsequent event.)
- (3) Average hours per day worked by husband between wife's first and last pregnancies.
- (4) Duration in months of first household help with child care event.
- (5) Number of months between wife's age 15 and interview that her marital status was 5 (married).
- (6) Number of changes in marital status of wife between the first time her husband number equals 1 and the interview.

Guide to RETRO Printed Output

After a heading which includes the version of RETRO being accessed, the program prints information gleaned from the Run Control card, with explanatory labels. The remaining control cards are listed in the input format for user information.

For each household printed, the data are displayed as read in and again after any recodes or transformations. The first information after the family ID is the contents of the index record. The user need not be concerned with the starting positions, but may be interested in how many events of each type occur for that household. Next, the actual input data are printed, beginning with the static variables. Each line of data is preceded by two numbers, the first indicating the event type (e.g., pregnancy is event type 1), the second indicating the sequence number for that occurrence of that event type within the household. These are followed by the actual input data values.

Some processing information is printed. First the birthdate(s) (SBM) and interview date(s) (NOW) of the respondent(s) are printed (SBM2 and NOW2 refer to the male respondent for joint processing). Then, for each output variable that is created, the standard month time returned by the event portion of the retrieval card is printed. Finally, the output record is displayed.

By checking the printed output records with the input data, the user can determine if he is retrieving the variables he hoped to. In cases of uncertainty, the printed times are helpful in tracing what has been retrieved.

When data processing is completed, RETRO prints record counts and, if requested, summary statistics.

RETROSPECTIVE VARIABLE RETRIEVAL PROGRAM

VERSION 6 -- FEBRUARY 1978

THIS RUN COMBINES DATA FROM R03 & R13, THE GUATEMALAN RETROSPECTIVES.

NO. OF RECODES = 0
 NO. OF INITIAL TRANSFORMATIONS = 0
 NO. OF SECOND RECODES = 0
 NO. OF INITIAL SELECTIONS = 0
 NO. OF RECORD DEFINITIONS = 0
 NO. OF OUTPUT VARIABLES = 6
 NO. OF FINAL TRANSFORMATIONS = 0
 VARIABLES ADDED BY FINAL TRANS = 0
 NO. OF FINAL SELECTIONS = 0

SUMMARY STATISTICS WILL BE CALCULATED

OUTPUT RECORDS WILL BE UNFORMATTED (VBS, LRECL= 28)

INPUT RECORDS SHOULD BE HALFWORD INTEGERS

1 HOUSEHOLDS WILL BE PRINTED

DATA WILL NOT BE TESTED FOR UNCHRONOLOGICAL DATES

CONTROL CARD LISTING:

OV11 0 00	OFF 0	OFHUSBAGEI	OF6	97 1	00	OFF 0	OFF	1
OV 2 80-11	OTF 0	OFVRSCHDUL	OF6	7 1	00	OFF 0	OFF	2
OV 5126 00	OFF 0	OFVAVGHOURS	OF5	22 1	00	OFF 0	OFF	3
				5 2299	00	OFF 0	OF	3
OV 6 0 00	OFF 0	OFDUR_HELP	OF5	76 1	00	OFF 0	OFF	4
OV 7 45 01	SFF 0	OFW MS=5	OF1	15 0	00	OFF 0	OFF	5
				6 7 1	00	OFF 0	OF	5
OV10 45 00	OFF 0	OFW#MSTATS	OF5	46 1	01	1FF 0	OFF	6
				6 7 1	00	OFF 0	OF	6

INPUT RECORD # 1 VILL. 3 FAM. 4
 1155 VARIABLES

7 PREGNANCY EVENTS STARTING IN POSITION 20
 2 MARITAL STATI STARTING IN POSITION 188
 1 CONTRACPTION EVENTS STARTING IN POSITION 194
 0 ILLNESSES STARTING IN POSITION 197
 3 SEPARATION EVENTS STARTING IN POSITION 197
 1 SPOUSE OCC. EVENTS STARTING IN POSITION 206
 2 MIGRATIONS STARTING IN POSITION 208
 6 HOUSE CHANGES STARTING IN POSITION 214
 1 RELIGION EVENTS STARTING IN POSITION 286
 1 HH HELP EVENTS STARTING IN POSITION 288
 2 SCHOOLING EVENTS STARTING IN POSITION 291
 22 EMPLOYMENT EVENTS STARTING IN POSITION 297

14 MIGRATIONS STARTING IN POSITION 535
 3 PARENTAL SUPPORT EVENTS STARTING IN POSITION
 26 EMPLOYMENT EVENTS STARTING IN POSITION 600
 3 MARITAL STATI STARTING IN POSITION 1068
 4 HOUSE CHANGES STARTING IN POSITION 1090
 1 RELIGION EVENTS STARTING IN POSITION 1136
 0 WORK HELP EVENTS STARTING IN POSITION 1138
 1 ILLNESSES STARTING IN POSITION 1138
 2 SCHOOLING EVENTS STARTING IN POSITION 1141
 1 ORGANIZATIONS STARTING IN POSITION 1147
 1 LAND CULTIVATION EVENTS STARTING IN POSITION 1150
 0 ROTORIZED VEHICLES STARTING IN POSITION 1154
 1 LIVESTOCK EVENTS STARTING IN POSITION 1154
 0 EXTRAORDINARY INCOME EVENTS STARTING IN POSITION 1156

STATIC	3	3	4	2	2	22	839	25	408	40	3	0	7	0	6	1	0	0	6
1 1	13	3	4	1	1	6	918	6	400	42	2	8	0	0	6	1	0	0	6
	669	0	1	0	3	1	230	2	0	0	0	1	3	0	670	130	6	665	80
1 2	667	0	0	0	0	0	0	0	0	0	0	1	3	0	697	110	4	693	90
	696	0	1	0	4	2	203	2	0	0	0	1	3	0	697	110	4	693	90
1 3	691	0	0	0	0	0	0	0	0	0	0	1	3	0	697	110	4	693	90
	710	9	5	0	5	2	190	2	710	9	2	1	6	0	710	2	7	715	0
1 4	715	0	0	0	0	0	0	0	0	0	0	1	6	0	710	2	7	715	0
	737	0	1	0	6	1	163	2	0	0	0	1	6	0	742	170	0	737	120
1 5	739	0	0	0	0	0	0	0	0	0	0	1	6	0	742	170	0	737	120
	770	0	1	0	7	2	129	3	0	0	0	1	6	0	772	140	0	775	50
1 6	775	0	0	0	0	0	0	0	0	0	0	1	6	0	772	140	0	775	50
	813	0	1	0	8	2	87	3	0	0	0	1	6	0	807	180	0	807	60
1 7	811	0	0	0	0	0	0	0	0	0	0	1	6	0	807	180	0	807	60
	832	0	1	0	9	1	67	3	0	0	0	1	6	0	835	270	0	832	120
2 1	835	150	0	0	0	0	0	0	0	0	0	1	6	0	835	270	0	832	120
2 2	578	1	0	0	0	0	0	0	0	0	0	1	6	0	835	270	0	832	120
3 1	642	5	1	0	0	0	0	0	0	0	0	1	6	0	835	270	0	832	120
5 1	863	36	6	0	0	0	0	0	0	0	0	1	6	0	835	270	0	832	120
5 2	859	2	2	0	0	0	0	0	0	0	0	1	6	0	835	270	0	832	120
5 3	871	2	2	0	0	0	0	0	0	0	0	1	6	0	835	270	0	832	120
6 1	883	2	2	0	0	0	0	0	0	0	0	1	6	0	835	270	0	832	120
7 1	642	3	0	0	0	0	0	0	0	0	0	1	6	0	835	270	0	832	120
7 2	408	3	225	0	0	0	0	0	0	0	0	1	6	0	835	270	0	832	120
8 1	497	3	226	0	0	0	0	0	0	0	0	1	6	0	835	270	0	832	120
8 2	408	5	0	0	2	2	4	1	7	3	0	2	0	0	0	0	0	0	0
8 3	427	5	0	0	2	2	4	1	7	3	0	2	0	0	0	0	0	0	0
	487	7	1	0	2	2	1	1	7	4	0	1	2	0	0	0	0	0	0

15 16	735	2	1	1	331	7	1080	5	3	6	8	5	13	0	0	5	1	6
15 17	737	7	3	1	331	2	0	0	0	5	8	5	14	50	12	0	0	0
15 18	737	2	1	1	331	7	13	2	0	1	8	5	13	0	0	2	0	0
15 19	744	1	13	12	277	2	500	5	0	5	10	5	42	0	0	0	1	6
15 20	794	2	2	5	331	7	140	4	3	6	8	4	11	0	0	20	1	6
15 21	796	8	3	1	331	2	0	0	0	5	8	4	14	50	12	0	0	0
15 22	796	2	1	1	331	7	15	2	0	1	8	4	13	0	0	3	0	0
15 23	842	2	1	1	329	7	10	2	3	6	8	2	14	0	0	50	1	6
15 24	844	8	3	1	331	2	0	0	0	6	8	2	14	60	12	0	0	0
15 25	865	12	7	1	331	7	300	5	2	6	8	4	13	0	0	0	0	0
15 26	866	10	3	1	331	2	0	0	0	1	8	4	14	50	12	1	0	0
16 1	484	1	0	0														
16 2	630	5	1	8														
16 3	918	5	1	7														
17 1	484	8	0	0	0	2	2	1	7	10	3	3	0	0	0	0	0	0
17 2	630	3	0	0	0	2	4	1	5	3	0	2	0	0	0	0	0	0
17 3	787	7	1	0	5	2	2	1	9	6	0	1	0	0	0	0	0	0
17 4	918	7	1	0	5	2	4	1	9	9	2	3	0	0	0	0	0	0
18 1	484	1																
20 1	880	1	4															
21 1	529	90	1															
21 2	541	90	3															
22 1	871	12	1															
23 1	859	96	12	3														
25 1	883	4																

SBN= 408 NOW= 899 SBN2= 400 NOW2= 918
 VAR. 1 TIME= 918
 VAR. 2 TIME= 899
 VAR. 3 TIME= 669
 VAR. 3 TIME= 832
 VAR. 4 TIME= 770
 VAR. 5 TIME= 588
 VAR. 5 TIME= 899
 VAR. 6 TIME= 642
 VAR. 6 TIME= 899
 OUTPUT RECORD # 1

518 2 8 6148 257 0

0 RECORDS WITH UNCHRONOLOGICAL DATES THROWN OUT
 23 FEMALE RECORDS READ
 24 MALE RECORDS READ
 19 MATCHED RECORDS FOUND
 19 RECORDS INITIALLY SELECTED
 19 OUTPUT RECORDS

		MEAN	VARIANCE	MAXIMUM	MINIMUM	# OF ZEROS
HUSBAGEI	1	530.526	7930.78	734	382	0
WSCHOOL	2	1.21053	1.42936	4	0	8
AVG HOURS	3	6.52637	8.24931	8	0	3
DUR.HELP	4	51.8421	4080.76	167	0	10
W NS=5	5	79.1053	8452.41	257	0	9
W#MSTATS	6	0.736842	1.87812	5	0	12

EXAMPLE 2
Multiple Records per Household from the
Malaysian Female Retrospective

```
//          JOB
//MF2 EXEC PGM=RETROALL,REGION=150K
//STEPLIB DD DSN=B.B9910.A1789.IVALIB,DISP=SHR
//GO.FT05F001 DD DDNAME=SYSIN
//GO.FT06F001 DD SYSOUT=A
//GO.FT07F001 DD SYSOUT=B
//GO.FT08F001 DD ----> MF2 CONVERTed Input Data Location
//GO.FT09F001 DD ----> Location for Output File
//GO.SYSIN DD *                               Var.#
RC          1 5          T MF2T 1
RD 040GET          0
OV01004          AREA ID T (1)
OV03          AGE 5 4097 (2)
OV04          FIRSTPRG T50040 1 1 OT (3)
OV08 40 1 1 #LIVEBIR 1 10 T (4)
          5 4097
OV09 57991 OT CONTRA 1 10 T (5)
          5 4097
/*
```

The options on the Run Control card specify that one Record Definition card and five Retrieval cards are included, that summary statistics are to be calculated, that the input data will be from MF2, and that one household is to be printed. The Record Definition card states that an output record is to be created for every nonzero occurrence of the pregnancy outcome variable. The five output variables are as follows:

- (1) The area reference number (to be defined only once per household).
- (2) Respondent's age in months at this pregnancy.
- (3) Standard month date of first nonzero pregnancy outcome.
- (4) Number of nonzero pregnancy outcomes between age 10 and this pregnancy.
- (5) Most recent contraceptive type used between age 10 and this pregnancy.

Guide to RETRO Printed Output

After a heading which includes the version of RETRO being accessed, the program prints information gleaned from the Run Control card, with explanatory labels. The remaining control cards are listed in the input format for user information.

For each household printed, the data are displayed as read in and again after any recodes or transformations. The first information after the family ID is the contents of the index record. The user need not be concerned with the starting positions, but may be interested in how many events of each type occur for that household. Next, the actual input data are printed, beginning with the static variables. Each line of data is preceded by two numbers, the first indicating the event type (e.g., pregnancy is event type 1), the second indicating the sequence number for that occurrence of that event type within the household. These are followed by the actual input data values.

Some processing information is printed. First the birthdate(s) (SBM) and interview date(s) (NOW) of the respondent(s) are printed (SBM2 and NOW2 refer to the male respondent for joint processing). Then, for each output variable that is created, the standard month time returned by the event portion of the retrieval card is printed. Finally, the output record is displayed.

By checking the printed output records with the input data, the user can determine if he is retrieving the variables he hoped to. In cases of uncertainty, the printed times are helpful in tracing what has been retrieved.

When data processing is completed, RETRO prints record counts and, if requested, summary statistics.

INPUT RECORD # 1 CASE 2
 77 VARIABLES

12 PREGNANCY EVENTS STARTING IN POSITION 32
 3 MARITAL STATUS STARTING IN POSITION 428
 4 MIGRATION/HOUSING EVENTS STARTING IN POSITION 452
 2 CHILD CARE EVENTS STARTING IN POSITION 512
 1 SCHOOLING EVENTS STARTING IN POSITION 544
 12 EMPLOYMENT EVENTS STARTING IN POSITION 550

STATIC	2	1	2950155	9	99	1	12	921	15	4	2	2	2	2	12	355	99	2	2
1 1	527	15	1	1	99	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1 2	590	2	2	2	24	0	0	0	1	1	61	600	0	0	0	0	0	0	0
1 3	607	99	3	2	99	0	0	0	1	1	0	602	0	607	99	0	1	5	3
1 4	620	8	4	2	9	0	0	0	1	2	62	700	0	0	0	0	1	30	3
1 5	653	5	5	2	31	0	0	0	1	2	63	608	0	0	0	0	1	30	3
1 6	682	10	6	2	20	0	0	0	1	1	64	613	0	0	0	0	1	24	3
1 7	712	4	7	2	13	0	0	0	1	1	65	802	0	0	0	0	1	36	3
1 8	751	7	8	2	11	1	0	0	1	2	11	703	0	0	0	0	1	30	3
1 9	779	11	9	2	14	1	0	0	1	2	12	607	0	0	0	0	1	36	3
1 10	815	11	10	2	16	1	0	0	1	2	13	600	0	0	0	0	1	18	3
1 11	831	3	11	2	17	1	0	0	1	1	14	604	0	0	0	0	0	0	0
1 12	921	9	12	3	12	1	0	0	0	0	0	0	0	0	0	0	0	0	0
2 1	527	15	1	1	5	62	0	0	0	0	0	0	0	0	0	0	0	0	0
2 2	535	14	2	3	5	62	0	0	0	0	0	0	0	0	0	0	0	0	0
2 3	878	13	3	4	5	62	36	4	0	0	0	0	0	0	0	0	0	0	0
3 1	355	99	1	0	99	4	0	0	0	0	0	0	0	0	0	0	0	0	0
3 2	518	13	2	1	99	4	1	0	0	4	2	0	0	0	4	0	0	0	0
3 3	535	99	3	2	34	5	1	0	0	3	2	0	0	0	3	0	0	0	0
3 4	734	13	4	2	33	5	4	0	0	3	1	4	0	0	4	0	0	0	0
4 1	527	15	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
4 2	535	99	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 1	535	99	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 1	535	99	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 2	542	13	2	2	1	1	0	62	0	3	1300	5	5	378	6	27	8	0	0
6 3	578	13	3	3	1	1	0	62	0	3	1300	5	5	378	6	27	8	0	0
6 4	614	13	4	3	1	1	0	62	0	3	1300	5	5	378	6	27	8	0	0
6 5	650	13	5	3	1	1	0	62	0	3	1300	5	5	378	6	27	8	0	0
6 6	686	13	6	4	1	1	0	62	0	3	1300	5	5	378	6	27	8	0	0
6 7	734	13	7	2	1	1	0	62	0	2	2000	5	5	498	6	27	8	0	0
6 8	770	13	8	3	1	1	0	62	0	2	2000	5	5	498	6	27	8	0	0
6 9	806	13	9	3	1	1	0	62	0	2	2000	5	5	498	6	27	8	0	0
6 10	842	13	10	3	1	1	0	62	0	2	2000	5	5	498	6	27	8	0	0
6 11	878	13	11	3	1	1	0	62	0	2	2000	5	5	498	6	27	8	0	0
6 12	921	9	12	3	1	1	0	62	0	2	2000	5	5	498	6	27	8	0	0

12 POTENTIAL OUTPUT RECORDS

SBR#	NOV#	SBR2#	NOV2#	VAR#	TIME#	OUTPUT RECORD #	950155	172	590	0	0
SBR# 355	NOV# 921	SBR2= 355	NOV2= 921	VAR. 2	TIME= 527						
				VAR. 3	TIME= 590						
				VAR. 4	TIME= 475						
				VAR. 4	TIME= 527						
				VAR. 5	TIME= 475						
				VAR. 5	TIME= 527						
				OUTPUT RECORD # 1		950155	172	590	0	0	
				VAR. 2	TIME= 590						
				VAR. 4	TIME= 475						
				VAR. 4	TIME= 590						
				VAR. 5	TIME= 475						
				VAR. 5	TIME= 590						
				OUTPUT RECORD # 2		950155	235	590	1	0	
				VAR. 2	TIME= 607						
				VAR. 4	TIME= 475						
				VAR. 4	TIME= 607						
				VAR. 5	TIME= 475						
				VAR. 5	TIME= 607						
				OUTPUT RECORD # 3		950155	252	590	2	0	
				VAR. 2	TIME= 620						
				VAR. 4	TIME= 475						
				VAR. 4	TIME= 620						
				VAR. 5	TIME= 475						
				VAR. 5	TIME= 620						
				OUTPUT RECORD # 4		950155	265	590	3	0	
				VAR. 2	TIME= 653						
				VAR. 4	TIME= 475						
				VAR. 4	TIME= 653						
				VAR. 5	TIME= 475						
				VAR. 5	TIME= 653						
				OUTPUT RECORD # 5		950155	298	590	4	0	
				VAR. 2	TIME= 682						
				VAR. 4	TIME= 475						
				VAR. 4	TIME= 682						
				VAR. 5	TIME= 475						
				VAR. 5	TIME= 682						
				OUTPUT RECORD # 6		950155	327	590	5	0	
				VAR. 2	TIME= 712						
				VAR. 4	TIME= 475						
				VAR. 4	TIME= 712						
				VAR. 5	TIME= 475						
				VAR. 5	TIME= 712						
				OUTPUT RECORD # 7		950155	357	590	6	0	
				VAR. 2	TIME= 751						
				VAR. 4	TIME= 475						
				VAR. 4	TIME= 751						
				VAR. 5	TIME= 475						
				VAR. 5	TIME= 751						
				OUTPUT RECORD # 8		950155	396	590	7	0	
				VAR. 2	TIME= 779						
				VAR. 4	TIME= 475						
				VAR. 4	TIME= 779						
				VAR. 5	TIME= 475						
				VAR. 5	TIME= 779						
				OUTPUT RECORD # 9		950155	424	590	8	0	
				VAR. 2	TIME= 815						
				VAR. 4	TIME= 475						
				VAR. 4	TIME= 815						
				VAR. 5	TIME= 475						
				VAR. 5	TIME= 815						

OUTPUT RECORD #	10	950155	460	590	9	0
VAR. 2	TIME= 831					
VAR. 4	TIME= 475					
VAR. 4	TIME= 831					
VAR. 5	TIME= 475					
VAR. 5	TIME= 831					
OUTPUT RECORD #	11	950155	476	590	10	1
VAR. 2	TIME= 921					
VAR. 4	TIME= 475					
VAR. 4	TIME= 921					
VAR. 5	TIME= 475					
VAR. 5	TIME= 921					
OUTPUT RECORD #	12	950155	566	590	10	1

INPUT RECORD #	15	CASE	56	CONTAINS	UNCHRONOLOGICAL	DATES	AND	HAS	BEEN	THROWN	OUT
INPUT RECORD #	18	CASE	59	CONTAINS	UNCHRONOLOGICAL	DATES	AND	HAS	BEEN	THROWN	OUT

2 RECORDS WITH UNCHRONOLOGICAL DATES THROWN OUT
23 RECORDS READ
21 RECORDS INITIALLY SELECTED
150 OUTPUT RECORDS

		MEAN	VARIANCE	MAXIMUM	MINIMUM	# OF ZEROS
AREA ID	1	948767.	0.641306D 08	951375	99999	0
AGE	2	301.180	7394.85	566	140	0
FIRSTPRG	3	717.647	15724.7	914	0	2
#LIVEBIR	4	3.58667	7.96249	11	0	23
CONTRA	5	2.86667	21.1689	12	0	100