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===== Convert
PROGRAM CONVERT Convert
VERSION 75-1 (APRIL 1975) Convert
VERSION 78-1 (JANUARY 1978) Convert
VERSION 80-1 (AUGUST 1980) IBM VERSION Convert
VERSION 80-2 (DECEMBER 1980) Convert
VERSION 82-1 (JANUARY 1982) Convert
VERSION 83-1 (JANUARY 1983) Convert
VERSION 86-1 (JANUARY 1986) *NEW PROGRAM Convert
                                *FORTRAN-77/H VERSION Convert
                                *MULTIPLE INPUT OPTIONS Convert
VERSION 88-1 (AUGUST 1988) *OPTION...INTERNALLY DEFINE ALL I/O Convert
                                FILE NAMES (SEE, SUBROUTINE FILEIO Convert
                                FOR DETAILS). Convert
                                *IMPROVED BASED ON USER COMMENTS. Convert
                                *ADDED NAMES OPTION TO TURN ON/OFF Convert
                                STANDARD FILE NAMES. Convert
                                *ADDED REWIND OPTION TO TURN ON/OFF Convert
                                REWIND AT START OF PROGRAMS. Convert
                                *DELETED HARWELL AND JAERI OPTIONS Convert
                                (PREVIOUSLY ONLY REQUIRED FOR GRAPHIC Convert
                                INTERFACE. NO LONGER REQUIRED). Convert
VERSION 89-1 (JANUARY 1989) *PSYCHOANALYZED BY PROGRAM FREUD TO Convert
                                INSURE PROGRAM WILL NOT DO ANYTHING Convert
                                CRAZY. Convert
                                *IMPROVED BASED ON USER COMMENTS. Convert
                                *ADDED LIVERMORE CIVIC COMPILER Convert
                                CONVENTIONS. Convert
                                *UPDATED TO USE NEW PROGRAM CONVERT Convert
                                KEYWORDS. Convert
                                *ADDED ENDFILE OPTION TO OPTIONALLY Convert
                                ALLOW END OF FILE TO BE WRITTEN Convert
VERSION 91-1 (JUNE 1991) *ADDED FORTRAN SAVE OPTION Convert
VERSION 92-1 (JANUARY 1992) *ADDED ACTION OPTION - TO CONTROL Convert
                                INTERACTIVE INPUT TO CODES Convert
                                *ADDED BLANK DELIMITED KEYWORD INPUT Convert
                                (REPLACES EARLIER FIXED FIELD INPUT) Convert
                                *WARNING...THE INPUT PARAMETER FORMAT Convert
                                HAS BEEN GENERALIZED - FOR DETAILS Convert
                                SEE BELOW. Convert
VERSION 94-1 (JANUARY 1994) *VARIABLE PROGRAM FILENAMES Convert
                                TO ALLOW ACCESS TO FILE STRUCTURES Convert
                                (WARNING - INPUT PARAMETER FORMAT Convert
                                HAS BEEN CHANGED) Convert
                                *CLOSE ALL FILES BEFORE TERMINATING Convert
                                (SEE, SUBROUTINE ENDIT) Convert
                                *ADDED KEYWORD CLOSE. Convert
VERSION 96-1 (JANUARY 1996) *COMPLETE RE-WRITE Convert
                                *IMPROVED COMPUTER INDEPENDENCE Convert
                                *ALL DOUBLE PRECISION Convert
                                *ON SCREEN OUTPUT Convert
VERSION 99-1 (MARCH 1999) *GENERAL IMPROVEMENTS BASED ON Convert
                                USER FEEDBACK Convert
VERS. 2000-1 (FEBRUARY 2000) *GENERAL IMPROVEMENTS BASED ON Convert
                                USER FEEDBACK Convert
VERS. 2002-1 (MAY 2002) *OPTIONAL INPUT PARAMETERS Convert
VERS. 2004-1 (MARCH 2004) *GENERAL UPDATE Convert
                                Convert
OWNED, MAINTAINED AND DISTRIBUTED BY Convert
----- Convert
THE NUCLEAR DATA SECTION Convert
INTERNATIONAL ATOMIC ENERGY AGENCY Convert
P.O. BOX 100 Convert
A-1400, VIENNA, AUSTRIA Convert
EUROPE Convert
ORIGINALY WRITTEN BY Convert
----- Convert
DERMOTT E. CULLEN Convert
UNIVERSITY OF CALIFORNIA Convert

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AUTHORS MESSAGE

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AT THE PRESENT TIME WE ARE ATTEMPTING TO DEVELOP A SET OF COMPUTER INDEPENDENT PROGRAMS THAT CAN EASILY BE IMPLEMENTED ON ANY ONE OF A WIDE VARIETY OF COMPUTERS. IN ORDER TO ASSIST IN THIS PROJECT IT WOULD BE APPRECIATED IF YOU WOULD NOTIFY THE AUTHOR OF ANY COMPILER DIAGNOSTICS, OPERATING PROBLEMS OR SUGGESTIONS ON HOW TO IMPROVE THIS PROGRAM. IN PARTICULAR IF YOUR FORTRAN COMPILER, OR COMPUTER HAS A SET OF REQUIREMENTS THAT ARE DIFFERENT FROM THOSE OF CDC, CRAY OR IBM PLEASE NOTIFY THE AUTHOR AND THIS PROGRAM WILL BE MODIFIED TO CONSIDER YOUR COMPUTER SEPERATELY. HOWEVER, IN ORDER TO PREVENT A PROLIFERATION OF CODING IT IS IMPERATIVE THAT YOU IDENTIFY EXACTLY HOW YOUR FORTRAN COMPILER OR COMPUTER DIFFERS FROM THOSE ALREADY CONSIDERED BY THIS PROGRAM. HOPEFULLY, IN THIS WAY FUTURE VERSIONS OF THIS PROGRAM WILL BE COMPLETELY COMPATIBLE FOR USE ON YOUR COMPUTER.

PURPOSE

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- (1) COMPUTERS
- (2) COMPILERS
- (3) PRECISIONS (SINGLE OR DOUBLE PRECISION)
- (4) INSTALLATIONS
- (5) STANDARD OR NON-STANDARD FILE NAMES

FORTRAN CODING CONVENTIONS

THIS PROGRAM MAY BE USED TO CONVERT ANY PROGRAM WHICH USES THE FOLLOWING CONVENTIONS.

ALL FORTRAN STATEMENTS THAT DEPEND ON ANY COMBINATION OF COMPUTER,
COMPILER, PRECISION AND/OR INSTALLATION AND STANDARD FILE NAMES
SHOULD BE PRECEDED AND FOLLOWED BY A COMMENT LINE THAT CONTAINS.

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C***** DOUBLE ***** ACTIVATE DOUBLE PRECISION (DEFAULT)
C***** SINGLE ***** ACTIVATE SINGLE PRECISION
C***** CHARACTER *** TREAT CHARACTER ARRAYS AS CHARACTERS(DEFAULT)
C***** INTEGER ***** TREAT CHARACTER ARRAYS AS INTEGERS
C***** STOP ***** ACTIVATE STOP TO TERMINATE PROGRAM
C***** EXIT ***** ACTIVATE EXIT TO TERMINATE PROGRAM
C***** PROGRAM ***** ACTIVATE PROGRAM LINE AND CONTINUATIONS
C***** NAMES ***** ACTIVATE STANDARD FILENAMES
C***** REWIND ***** ACTIVATE REWIND FILES AT START OF PROGRAM
C***** ENDFILE ***** ACTIVATE ENDFILE AT END OF PROGRAM
C***** CIVIC ***** ACTIVATE LIVERMORE CIVIC COMPILER CONVENTIONS
C***** NOID ***** REMOVE LINE ID IN COLUMNS 73-80 (73-80=BLANK)
C***** SAVE ***** SAVE VARIABLES BETWEEN SUBROUTINE CALLS
C***** ACTION ***** ACTIVATE INTERACTIVE INPUT TO CODES
C***** CLOSE ***** ACTIVATE CLOSE ALL FILES BEFORE TERMINATING
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IF THE USER DOES NOT SELECT,

- | | |
|--------------------------|---------------------------------------|
| (1) DOUBLE OR SINGLE | - THE PROGRAM WILL ACTIVATE DOUBLE |
| (2) CHARACTER OR INTEGER | - THE PROGRAM WILL ACTIVATE CHARACTER |
| (3) STOP OR EXIT | - THE PROGRAM WILL ACTIVATE STOP |

(1) DOUBLE AND SINGLE	- THE PROGRAM WILL ACTIVATE DOUBLE
(2) CHARACTER AND INTEGER	- THE PROGRAM WILL ACTIVATE CHARACTER
(3) STOP AND EXIT	- THE PROGRAM WILL ACTIVATE STOP

WHERE CODING IS COMPUTER OR COMPILER DEPENDENT CODING WILL BE PRESENT FOR ALL POSSIBLE OPTIONS. THIS PROGRAM WILL ALLOW THE USER TO CONVERT PROGRAMS FOR USE WITH ANY COMBINATION OF OPTIONS. FOR EXAMPLES OF HOW THIS CONVENTION IS USED SEE THE LISTING OF THIS PROGRAM AND THE COMMENTS BELOW ON COMPUTER DEPENDENT CODING.

REFERENCES

LINE	COLS.	DESCRIPTION
1	1-72	BLANK DELIMITED KEYWORDS
2	1-60	ENDF/B INPUT DATA FILENAME (STANDARD OPTION = ENDFB.IN)
3	1-60	ENDF/B OUTPUT DATA FILENAME (STANDARD OPTION = ENDFB.OUT)

LEGAL KEYWORDS INCLUDE.

DOUBLE	ACTIVATE DOUBLE PRECISION (DEFAULT)
SINGLE	ACTIVATE SINGLE PRECISION
CHARACTER	TREAT CHARACTER ARRAYS AS CHARACTERS(DEFAULT)
INTEGER	TREAT CHARACTER ARRAYS AS INTEGERS
PROGRAM	ACTIVATE PROGRAM LINE AND CONTINUATIONS
NAMES	ACTIVATE STANDARD FILENAMES
REWIND	ACTIVATE REWIND FILES AT START OF PROGRAM
ENDFILE	ACTIVATE ENDFILE AT END OF PROGRAM
CIVIC	ACTIVATE LIVERMORE CIVIC COMPILER CONVENTIONS
NOID	REMOVE LINE ID IN COLUMNS 73-80 (73-80=BLANK)
SAVE	SAVE VARIABLES BETWEEN SUBROUTINE CALLS
ACTION	ACTIVATE INTERACTIVE INPUT FOR CODES
CLOSE	ACTIVATE CLOSE ALL FILES BEFORE TERMINATING

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TO USE A PROGRAM IN SINGLE PRECISION, USE THE STANDARD FILE NAMES,
REWIND ALL UNITS AT THE START OF THE PROGRAM AND TREAT CHARACTER
ARRAYS AS CHARACTER (FORTRAN-77 CONVENTION).

READ \PREPRO93\RECENT\RECENT.OLD AND
WRITE \PREPRO93\RECENT\RECENT.NEW

THE FOLLOWING 3 INPUT LINES ARE REQUIRED,

SINGLE NAMES REWIND CHARACTER
\PREPR093\RECENT\RECENT.OLD
\PREPR093\RECENT\RECENT.NEW

NOTE, SINCE CHARACTER IS THE STANDARD OPTION THE KEYWORD CHARACTER
NEED NOT APPEAR ON THE ABOVE INPUT LINE.

EXAMPLE INPUT NO. 2

[illegible]

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CONTAINS A KEYWORD, THE NEXT LINE THAT CONTAINS A KEYWORD MUST
CONTAIN THE SAME KEYWORD).

PROGRAM LINE
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THE FORTRAN FILE MAY START WITH A PROGRAM LINE AND CONTINUATIONS.
FOR USE ON CDC-7600 OR CRAY-1 COMPUTERS THIS PROGRAM CAN ACTIVATE
THE PROGRAM LINE AND CONTINUATION LINES. FOR USE ON OTHER TYPES OF
COMPUTERS THIS PROGRAM WILL AUTOMATICALLY DE-ACTIVATE THE PROGRAM
LINE AND CONTINUATION LINES. THIS CONVENTIONS HAS BEEN INTRODUCED
BECAUSE SOME CDC-7600 COMPILERS CONSIDER IT AN ERROR IF THE FIRST
LINE IS NOT A PROGRAM LINE. PRECEDING COMMENT LINES ARE NOT
ALLOWED. THEREFORE THE NORMAL CONVENTION, DESCRIBED ABOVE, OF
USING PRECEDING AND FOLLOWING COMMENT LINES, CANNOT BE USED AT
THE BEGINNING OF THE PROGRAM.

COMMENT LINES
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COMMENT LINES MAY APPEAR ON LINES BETWEEN PAIRS OF KEYWORD LINES
ONLY IF THE COMMENT LINES CONTAINS C-- IN COLUMNS 1-3. ANY LINE
THAT CONTAINS ANYTHING ELSE IN COLUMNS 1-3 MAY BE ACTIVATED
BY THIS PROGRAM BY SETTING COLUMN 1 BLANK AND CAN LEAD TO ERRORS
DURING COMPILATION AND/OR EXECUTION.

INPUT FILES
-----
UNIT  DESCRIPTION
-----
   2  INPUT LINE (BCD - 80 CHARACTERS/RECORD)
  10  ORIGINAL PROGRAM (BCD - 80 CHARACTERS/RECORD)

OUTPUT FILES
-----
UNIT  DESCRIPTION
-----
   3  OUTPUT REPORT (BCD - 120 CHARACTERS/RECORD)
  11  RE-FORMATTED PROGRAM (BCD - 80 CHARACTERS/RECORD)

OPTIONAL STANDARD FILE NAMES (SEE SUBROUTINE FILIO1 AND FILIO2)
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UNIT  FILE NAME
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   2  CONVERT.INP
   3  CONVERT.LST
  10  CONVERT.IN
  11  CONVERT.OUT

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