======================================================================= Convert

 Convert

 PROGRAM CONVERT 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

 VERS. 2007-1 (JAN. 2007) \*GENERAL UPDATE Convert

 VERS. 2007-2 (DEC. 2007) \*72 CHARACTER FILE NAMES. Convert

 VERS. 2010-1 (Apr. 2010) \*General update based on user feedback Convert

 VERS. 2012-1 (Aug. 2012) \*Added CODENAME Convert

 \*32 and 64 bit Compatible Convert

 \*Added ERROR stop Convert

 VERS. 2015-1 (Jan. 2015) \*Replaced ALL 3 way IF Statements 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

 Convert

 ORIGINALLY WRITTEN BY Convert

 ------------------------------------ Convert

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 Convert

 AUTHORS MESSAGE Convert

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 THE COMMENTS BELOW SHOULD BE CONSIDERED THE LATEST DOCUMENATION Convert

 FOR THIS PROGRAM INCLUDING ALL RECENT IMPROVEMENTS. PLEASE READ Convert

 ALL OF THESE COMMENTS BEFORE IMPLEMENTATION, PARTICULARLY THE Convert

 COMMENTS CONCERNING COMPUTER DEPENDENT CODING. Convert

 Convert

 AT THE PRESENT TIME WE ARE ATTEMPTING TO DEVELOP A SET OF COMPUTER Convert

 INDEPENDENT PROGRAMS THAT CAN EASILY BE IMPLEMENTED ON ANY ONE Convert

 OF A WIDE VARIETY OF COMPUTERS. IN ORDER TO ASSIST IN THIS PROJECT Convert

 IT WOULD BE APPECIATED IF YOU WOULD NOTIFY THE AUTHOR OF ANY Convert

 COMPILER DIAGNOSTICS, OPERATING PROBLEMS OR SUGGESTIONS ON HOW TO Convert

 IMPROVE THIS PROGRAM. IN PARTICULAR IF YOUR FORTRAN COMPILER, OR Convert

 COMPUTER HAS A SET OF REQUIREMENTS THAT ARE DIFFERENT FROM THOSE Convert

 OF CDC, CRAY OR IBM PLEASE NOTIFY THE AUTHOR AND THIS PROGRAM WILL Convert

 BE MODIFIED TO CONSIDER YOUR COMPUTER SEPERATELY. HOWEVER, IN Convert

 ORDER TO PREVENT A PROLIFERATION OF CODING IT IS IMPERATIVE THAT Convert

 YOU IDENTIFY EXACTLY HOW YOUR FORTRAN COMPILER OR COMPUTER DIFFERS Convert

 FROM THOSE ALREADY CONSIDERED BY THIS PROGRAM. HOPEFULLY,IN THIS Convert

 WAY FUTURE VERSIONS OF THIS PROGRAM WILL BE COMPLETELY COMPATIBLE Convert

 FOR USE ON YOUR COMPUTER. Convert

 Convert

 PURPOSE Convert

 ------- Convert

 THIS PROGRAM IS DESIGNED TO AUTOMATICALLY CONVERT FORTRAN PROGRAMS Convert

 FOR USE ON ANY ONE OF A VARIETY OF, Convert

 (1) COMPUTERS Convert

 (2) COMPILERS Convert

 (3) PRECISIONS (SINGLE OR DOUBLE PRECISION) Convert

 (4) INSTALLATIONS Convert

 (5) STANDARD OR NON-STANDARD FILE NAMES Convert

 Convert

 FORTRAN CODING CONVENTIONS Convert

 -------------------------- Convert

 THIS PROGRAM MAY BE USED TO CONVERT ANY PROGRAM WHICH USES THE Convert

 FOLLOWING CONVENTIONS. Convert

 Convert

 ALL FORTRAN STATEMENTS THAT DEPEND ON ANY COMBINATION OF COMPUTER, Convert

 COMPILER, PRECISION AND/OR INSTALLATION AND STANDARD FILE NAMES Convert

 SHOULD BE PRECEDED AND FOLLOWED BY A COMMENT LINE THAT CONTAINS, Convert

 Convert

 C\*\*\*\*\* DOUBLE \*\*\*\*\*\* ACTIVATE DOUBLE PRECISION (DEFAULT) Convert

 C\*\*\*\*\* SINGLE \*\*\*\*\*\* ACTIVATE SINGLE PRECISION Convert

 C\*\*\*\*\* CHARACTER \*\*\* TREAT CHARACTER ARRAYS AS CHARACTERS(DEFAULT) Convert

 C\*\*\*\*\* INTEGER \*\*\*\*\* TREAT CHARACTER ARRAYS AS INTEGERS Convert

 C\*\*\*\*\* STOP \*\*\*\*\*\*\*\* ACTIVATE STOP TO TERMINATE PROGRAM Convert

 C\*\*\*\*\* EXIT \*\*\*\*\*\*\*\* ACTIVATE EXIT TO TERMINATE PROGRAM Convert

 C\*\*\*\*\* PROGRAM \*\*\*\*\* ACTIVATE PROGRAM LINE AND CONTINUATIONS Convert

 C\*\*\*\*\* NAMES \*\*\*\*\*\*\* ACTIVATE STANDARD FILENAMES Convert

 C\*\*\*\*\* REWIND \*\*\*\*\*\* ACTIVATE REWIND FILES AT START OF PROGRAM Convert

 C\*\*\*\*\* ENDFILE \*\*\*\*\* ACTIVATE ENDFILE AT END OF PROGRAM Convert

 C\*\*\*\*\* CIVIC \*\*\*\*\*\*\* ACTIVATE LIVERMORE CIVIC COMPILER CONVENTIONS Convert

 C\*\*\*\*\* NOID \*\*\*\*\*\*\*\* REMOVE LINE ID IN COLUMNS 73-80 (73-80=BLANK) Convert

 C\*\*\*\*\* SAVE \*\*\*\*\*\*\*\* SAVE VARIABLES BETWEEN SUBROUTINE CALLS Convert

 C\*\*\*\*\* ACTION \*\*\*\*\*\* ACTIVATE INTERACTIVE INPUT TO CODES Convert

 C\*\*\*\*\* CLOSE \*\*\*\*\*\*\* ACTIVATE CLOSE ALL FILES BEFORE TERMINATING Convert

 Convert

 IF THE USER DOES NOT SELECT, Convert

 (1) DOUBLE OR SINGLE - THE PROGRAM WILL ACTIVATE DOUBLE Convert

 (2) CHARACTER OR INTEGER - THE PROGRAM WILL ACTIVATE CHARACTER Convert

 (3) STOP OR EXIT - THE PROGRAM WILL ACTIVATE STOP Convert

 Convert

 IF THE USER SELECTS, Convert

 (1) DOUBLE AND SINGLE - THE PROGRAM WILL ACTIVATE DOUBLE Convert

 (2) CHARACTER AND INTEGER - THE PROGRAM WILL ACTIVATE CHARACTER Convert

 (3) STOP AND EXIT - THE PROGRAM WILL ACTIVATE STOP Convert

 Convert

 IF THE USER DOES NOT SELECT PROGRAM, NAMES, REWIND, ENDFILE, Convert

 CIVIC, NOID, SAVE OR ACTION THESE OPTIONS WILL BE TURNED OFF. Convert

 Convert

 WHERE CODING IS COMPUTER OR COMPILER DEPENDENT CODING WILL BE Convert

 PRESENT FOR ALL POSSIBLE OPTIONS. THIS PROGRAM WILL ALLOW THE Convert

 THE USER TO CONVERT PROGRAMS FOR USE WITH ANY COMBINATION OF Convert

 OPTIONS. FOR EXAMPLES OF HOW THIS CONVENTION IS USED SEE THE Convert

 LISTING OF THIS PROGRAM AND THE COMMENTS BELOW ON COMPUTER Convert

 DEPENDENT CODING. Convert

 Convert

 INPUT LINES Convert

 ----------- Convert

 LINE COLS. DESCRIPTION Convert

 ---- ----- -------------------------------------- Convert

 1 1-72 BLANK DELIMITED KEYWORDS Convert

 2 1-60 ENDF/B INPUT DATA FILENAME Convert

 (STANDARD OPTION = ENDFB.IN) Convert

 3 1-60 ENDF/B OUTPUT DATA FILENAME Convert

 (STANDARD OPTION = ENDFB.OUT) Convert

 Convert

 \*THE FIRST INPUT LINE IS 72 CHARACTERS. Convert

 \*KEYWORDS MAY BE LOCATED ANYWHERE WITHIN THESE 72 CHARACTERS Convert

 \*THERE MAY BE ANY NUMBER OF KEYWORDS INPUT Convert

 \*EACH KEYWORD MUST BE BLANK DELIMITED, E.G., DOUBLE CHARACTER Convert

 IS LEGAL INPUT - DOUBLECHARACTER IS NOT LEGAL INPUT. Convert

 \*THERE MUST BE ONE OR MORE BLANKS BETWEEN KEYWORDS Convert

 Convert

 \*NOTE, THIS NEW INPUT PARAMETER FORMAT (VERSION 92-1) IS COMPLETELY Convert

 COMPATIBLE WITH THE OLDER FIXED FIELD FORMAT. SO THAT IF YOU HAVE Convert

 INPUT THAT YOU HAVE USED IN THE PAST YOU CAN CONTINUE TO USE IT. Convert

 Convert

 LEGAL KEYWORDS INCLUDE, Convert

 Convert

 DOUBLE ACTIVATE DOUBLE PRECISION (DEFAULT) Convert

 SINGLE ACTIVATE SINGLE PRECISION Convert

 CHARACTER TREAT CHARACTER ARRAYS AS CHARACTERS(DEFAULT) Convert

 INTEGER TREAT CHARACTER ARRAYS AS INTEGERS Convert

 PROGRAM ACTIVATE PROGRAM LINE AND CONTINUATIONS Convert

 NAMES ACTIVATE STANDARD FILENAMES Convert

 REWIND ACTIVATE REWIND FILES AT START OF PROGRAM Convert

 ENDFILE ACTIVATE ENDFILE AT END OF PROGRAM Convert

 CIVIC ACTIVATE LIVERMORE CIVIC COMPILER CONVENTIONS Convert

 NOID REMOVE LINE ID IN COLUMNS 73-80 (73-80=BLANK) Convert

 SAVE SAVE VARIABLES BETWEEN SUBROUTINE CALLS Convert

 ACTION ACTIVATE INTERACTIVE INPUT FOR CODES Convert

 CLOSE ACTIVATE CLOSE ALL FILES BEFORE TERMINATING Convert

 Convert

 EXAMPLE INPUT NO. 1 Convert

 ------------------- Convert

 TO USE A PROGRAM IN SINGLE PRECISION, USE THE STANDARD FILE NAMES, Convert

 REWIND ALL UNITS AT THE START OF THE PROGRAM AND TREAT CHARACTER Convert

 ARRAYS AS CHARACTER (FORTRAN-77 CONVENTION). Convert

 Convert

 READ \PREPRO93\RECENT\RECENT.OLD AND Convert

 WRITE \PREPRO93\RECENT\RECENT.NEW Convert

 Convert

 THE FOLLOWING 3 INPUT LINES ARE REQUIRED, Convert

 Convert

 SINGLE NAMES REWIND CHARACTER Convert

 \PREPRO93\RECENT\RECENT.OLD Convert

 \PREPRO93\RECENT\RECENT.NEW Convert

 Convert

 NOTE, SINCE CHARACTER IS THE STANDARD OPTION THE KEYWORD CHARACTER Convert

 NEED NOT APPEAR ON THE ABOVE INPUT LINE. Convert

 Convert

 EXAMPLE INPUT NO. 2 Convert

 ------------------- Convert

 TO USE A PROGRAM IN DOUBLE PRECISION AND TREAT ALL CHARACTER Convert

 ARRAYS AS INTEGER (FORTRAN-H CONVENTION). Convert

 Convert

 USE THE STANDARD FILENAMES TO READ = CONVERT.IN AND WRITE = Convert

 CONVERT.OUT (THIS CAN BE DONE BY LEAVING THE SECOND AND THIRD Convert

 INPUT LINES BLANK). Convert

 Convert

 THE FOLLOWING 3 INPUT LINES ARE REQUIRED, Convert

 Convert

 DOUBLE INTEGER Convert

 (NOTE, THIS IS A BLANK LINE) Convert

 (NOTE, THIS IS A BLANK LINE) Convert

 Convert

 NOTE, SINCE DOUBLE IS THE STANDARD OPTION THE KEYWORD DOUBLE Convert

 NEED NOT APPEAR ON THE ABOVE INPUT LINE. Convert

 Convert

 EXAMPLE INPUT NO. 3 Convert

 ------------------- Convert

 TO ACTIVATE THE PROGRAM LINE, USE DOUBLE PRECISION AND TREAT ALL Convert

 CHARACTER ARRAYS AS CHARACTER. Convert

 Convert

 Convert

 READ \PREPRO93\RECENT\RECENT.OLD AND Convert

 WRITE THE STANDARD FILENAME = CONVERT.OUT (LEAVE THE THIRD INPUT Convert

 LINE BLANK). Convert

 Convert

 THE FOLLOWING 3 INPUT LINES ARE REQUIRED, Convert

 Convert

 PROGRAM Convert

 \PREPRO93\RECENT\RECENT.OLD Convert

 (NOTE, THIS IS A BLANK LINE) Convert

 Convert

 NOTE, SINCE DOUBLE, CHARACTER AND EXIT ARE THE STANDARD OPTIONS Convert

 THEY NEED NOT APPEAR ON THE ABOVE INPUT LINE AND IN THIS EXAMPLE Convert

 HAVE BEEN OMITTED. Convert

 Convert

 WARNING Convert

 ------- Convert

 (1) THE PROGRAM WILL ALWAYS ACTIVATE DOUBLE OR SINGLE, CHARACTER Convert

 OR INTEGER (AS DESCRIBED ABOVE). Convert

 Convert

 (2) CODING IN THE PROGRAM FOR ANY KEYWORDS THAT ARE NOT ACTIVATED Convert

 WILL BE CONVERTED TO COMMENT LINES AND AS SUCH WILL EFFECTIVELY Convert

 DISAPPEAR FROM THE PROGRAM. THEREFORE IF THE KEYWORDS PROGRAM, Convert

 NAMES, REWIND, ENDFILE, CIVIC OR NOID ARE NOT INPUT BY THE USER Convert

 THESE OPTIONS WILL BE TURNED OFF AND ANY CODING USING THESE Convert

 KEYWORDS WILL EFFECTIVELY DISAPPEAR FROM THE PROGRAM. Convert

 Convert

 (3) THE SERIES OF CODES THAT ARE DESIGNED TO BE AUTOMATICALLY Convert

 TRANSLATED BY THIS PROGRAM REQUIRE THAT ALL CALCULATIONS BE Convert

 PERFORMED IN DOUBLE PRECISION ON SHORT WORD LENGTH COMPUTERS Convert

 (E.G., IBM COMPUTERS). THIS PROGRAM WILL ALLOW YOU TO SPECIFY Convert

 EITHER DOUBLE OR SINGLE PRECISION. HOWEVER, IF YOU SPECIFY Convert

 SINGLE PRECISION THIS PROGRAM WILL PRINT A WARNING MESSAGE THAT Convert

 THE CONVERTED PROGRAM SHOULD ONLY BE USED ON LONG WORD LENGTH Convert

 COMPUTERS (E.G., CDC COMPUTERS). Convert

 Convert

 PROGRAM OPERATION Convert

 ----------------- Convert

 THE PROGRAM WILL SEARCH FOR COMMENT LINES THAT START WITH C\*\* Convert

 IN COLUMNS 1-3 FOLLOWED BY ANY ONE OF THE ALLOWED KEYWORDS Convert

 IF THE KEYWORD IS THE SAME AS ONE OF THE KEYWORDS INPUT BY Convert

 THE USER ALL LINES UP TO THE NEXT LINE WITH C\*\* IN COLUMNS 1-3 Convert

 FOLLOWED BY THE SAME KEYWORD WILL BE SET ACTIVE BY SETTING COLUMN Convert

 1 TO BLANK. IF THE KEYWORDS DIFFERS FROM THAT INPUT BY THE USER Convert

 ALL LINES UP TO THE NEXT LINE WITH C\*\* IN COLUMNS 1-3 FOLLOWED BY Convert

 THE SAME KEYWORD WILL BE SET INACTIVE BY SETTING COLUMN 1 TO C. Convert

 Convert

 KEYWORDS MAY NOT BE NESTED (I.E., THIS PROGRAM WILL ONLY OPERATE Convert

 PROPERLY IF KEYWORDS APPEAR IN PAIRS. ONCE A LINE IS FOUND THAT Convert

 CONTAINS A KEYWORD, THE NEXT LINE THAT CONTAINS A KEYWORD MUST Convert

 CONTAIN THE SAME KEYWORD). Convert

 Convert

 PROGRAM LINE Convert

 ------------ Convert

 THE FORTRAN FILE MAY START WITH A PROGRAM LINE AND CONTINUATIONS. Convert

 FOR USE ON CDC-7600 OR CRAY-1 COMPUTERS THIS PROGRAM CAN ACTIVATE Convert

 THE PROGRAM LINE AND CONTINUATION LINES. FOR USE ON OTHER TYPES OF Convert

 COMPUTERS THIS PROGRAM WILL AUTOMATICALLY DE-ACTIVATE THE PROGRAM Convert

 LINE AND CONTINUATION LINES. THIS CONVENTIONS HAS BEEN INTRODUCED Convert

 BECAUSE SOME CDC-7600 COMPILERS CONSIDER IT AN ERROR IF THE FIRST Convert

 LINE IS NOT A PROGRAM LINE. PRECEEDING COMMENT LINES ARE NOT Convert

 ALLOWED. THEREFORE THE NORMAL CONVENTION, DESCRIBED ABOVE, OF Convert

 USING PRECEDING AND FOLLOWING COMMENT LINES, CANNOT BE USED AT Convert

 THE BEGINNING OF THE PROGRAM. Convert

 Convert

 COMMENT LINES Convert

 ------------- Convert

 COMMENT LINES MAY APPEAR ON LINES BETWEEN PAIRS OF KEYWORD LINES Convert

 ONLY IF THE COMMENT LINES CONTAINS C-- IN COLUMS 1-3. ANY LINE Convert

 THAT CONTAINS ANYTHING ELSE IN COLUMNS 1-3 MAY BE ACTIVATED Convert

 BY THIS PROGRAM BY SETTING COLUMN 1 BLANK AND CAN LEAD TO ERRORS Convert

 DURING COMPILATION AND/OR EXECUTION. Convert

 Convert

 INPUT FILES Convert

 ----------- Convert

 UNIT DESCRIPTION Convert

 ---- ----------- Convert

 2 INPUT LINE (BCD - 80 CHARACTERS/RECORD) Convert

 10 ORIGINAL PROGRAM (BCD - 80 CHARACTERS/RECORD) Convert

 Convert

 OUTPUT FILES Convert

 ------------ Convert

 UNIT DESCRIPTION Convert

 ---- ----------- Convert

 3 OUTPUT REPORT (BCD - 120 CHARACTERS/RECORD) Convert

 11 RE-FORMATTED PROGRAM (BCD - 80 CHARACTERS/RECORD) Convert

 Convert

 OPTIONAL STANDARD FILE NAMES (SEE SUBROUTINE FILIO1 AND FILIO2) Convert

 --------------------------------------------------------------- Convert

 UNIT FILE NAME Convert

 ---- ---------- Convert

 2 CONVERT.INP Convert

 3 CONVERT.LST Convert

 10 CONVERT.IN Convert

 11 CONVERT.OUT Convert

 Convert

 ======================================================================= Convert