======================================================================= Dictin

 Dictin

 PROGRAM DICTIN (Renamed from DICTION to eliminate conflict with Dictin

 UNIX diction command - 12/22/02) Dictin

 ============== Dictin

 VERSION 81-1 (SEPTEMBER 1981) Dictin

 VERSION 82-1 (JANUARY 1982) Dictin

 VERSION 83-1 (JANUARY 1983) \*KEEP ORIGINAL MOD. NUMBER Dictin

 \*NEW, MORE COMPATIBLE I/O UNITS. Dictin

 VERSION 84-1 (SEPTEMBER 1984)\*UPDATED TO HANDLE ENDF/B-VI FORMAT. Dictin

 (PROGRAM WILL NOW WORK ON ALL Dictin

 VERSIONS OF THE ENDF/B FORMAT). Dictin

 VERSION 85-1 (AUGUST 1985) \*FORTRAN-77/H VERSION Dictin

 VERSION 86-1 (JANUARY 1986) \*MAT ORDER CHECK. Dictin

 \*IF NO HOLLERITH SECTION COPY MAT. Dictin

 VERSION 88-1 (JULY 1988) \*OPTION...INTERNALLY DEFINE ALL I/O Dictin

 FILE NAMES (SEE, SUBROUTINE FILEIO Dictin

 FOR DETAILS). Dictin

 \*IMPROVED BASED ON USER COMMENTS. Dictin

 VERSION 89-1 (JANUARY 1989) \*PSYCHOANALYZED BY PROGRAM FREUD TO Dictin

 INSURE PROGRAM WILL NOT DO ANYTHING Dictin

 CRAZY. Dictin

 \*IMPROVED BASED ON USER COMMENTS. Dictin

 \*ADDED LIVERMORE CIVIC COMPILER Dictin

 CONVENTIONS. Dictin

 \*UPDATED TO USE NEW PROGRAM CONVERT Dictin

 KEYWORDS. Dictin

 VERSION 92-1 (JANUARY 1992) \*UPDATED BASED ON USER COMMENTS. Dictin

 \*UP TO 6000 SECTIONS PER TAPE. Dictin

 \*CHANGED DEFAULT MOD NUMBER FOR NEW Dictin

 SECTIONS FROM 0 TO 1 Dictin

 VERSION 94-1 (JANUARY 1994) \*VARIABLE ENDF/B DATA FILENAMES Dictin

 TO ALLOW ACCESS TO FILE STRUCTURES Dictin

 (WARNING - INPUT PARAMETER FORMAT Dictin

 HAS BEEN CHANGED) Dictin

 \*CLOSE ALL FILES BEFORE TERMINATING Dictin

 (SEE, SUBROUTINE ENDIT) Dictin

 \*ADDED FORTRAN SAVE OPTION Dictin

 VERSION 96-1 (JANUARY 1996) \*COMPLETE RE-WRITE Dictin

 \*IMPROVED COMPUTER INDEPENDENCE Dictin

 \*ALL DOUBLE PRECISION Dictin

 \*ON SCREEN OUTPUT Dictin

 \*UNIFORM TREATMENT OF ENDF/B I/O Dictin

 \*IMPROVED OUTPUT PRECISION Dictin

 VERSION 99-1 (MARCH 1999) \*CORRECTED CHARACTER TO FLOATING Dictin

 POINT READ FOR MORE DIGITS Dictin

 \*UPDATED TEST FOR ENDF/B FORMAT Dictin

 VERSION BASED ON RECENT FORMAT CHANGE Dictin

 \*GENERAL IMPROVEMENTS BASED ON Dictin

 USER FEEDBACK Dictin

 VERS. 2000-1 (FEBRUARY 2000)\*GENERAL IMPROVEMENTS BASED ON Dictin

 USER FEEDBACK Dictin

 VERS. 2002-1 (MAY 2002) \*OPTIONAL INPUT PARAMETERS Dictin

 \*RENAMED dictin TO ELIMINATE CONFLICT Dictin

 WITH UNIX diction COMMAND. Dictin

 \*ADDED DOCUMENTATION LINE TO COMMENTS. Dictin

 VERS. 2004-1 (JAN. 2004) \*GENERAL UPDATE BASED ON USER FEEDBACK Dictin

 \*UP TO 100,000 SECTIONS PER TAPE. Dictin

 VERS. 2007-1 (JAN. 2007) \*CHECKED AGAINST ALL ENDF/B-VII. Dictin

 \*UP TO 500,000 SECTIONS PER TAPE. Dictin

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

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

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

 \*32 and 64 bit Compatible Dictin

 \*Added ERROR stops Dictin

 VERS. 2015-1 (Jan. 2015) \*Corrected END = it was saying ERROR. Dictin

 \*Replaced ALL 3 way IF Statements. Dictin

 **VERS. 2015-2 (Mar. 2015) \*Corrected Seqence Numbers Dictin**

 **1) Restart at 1 for each MAT/MF/MT. Dictin**

 **2) 99999 on section end, MT=0 Dictin**

 **3) 0 on MF = 0 Dictin**

 **Dictin**

 **2015-2 Acknowledgment Dictin**

 **===================== Dictin**

 **I thank Jean-Christophe Sublet (UKAEA) for contributing MAC Dictin**

 **executables and Bojan Zefran (IJS, Slovenia) for contributing Dictin**

 **LINUX (32 or 63 bit) executables. And most of all I must thank Dictin**

 **Andrej Trkov (NDS, IAEA) for overseeing the entire PREPRO project Dictin**

 **at IAEA, Vienna. This was a truly International team who worked Dictin**

 **together to produce PREPRO 2015-2. Dictin**

 Dictin

 OWNED, MAINTAINED AND DISTRIBUTED BY Dictin

 ------------------------------------ Dictin

 THE NUCLEAR DATA SECTION Dictin

 INTERNATIONAL ATOMIC ENERGY AGENCY Dictin

 P.O. BOX 100 Dictin

 A-1400, VIENNA, AUSTRIA Dictin

 EUROPE Dictin

 Dictin

 ORIGINALLY WRITTEN BY Dictin

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 AUTHORS MESSAGE Dictin

 --------------- Dictin

 THE COMMENTS BELOW SHOULD BE CONSIDERED THE LATEST DOCUMENATION Dictin

 FOR THIS PROGRAM INCLUDING ALL RECENT IMPROVEMENTS. PLEASE READ Dictin

 ALL OF THESE COMMENTS BEFORE IMPLEMENTATION. Dictin

 Dictin

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

 INDEPENDENT PROGRAMS THAT CAN EASILY BE IMPLEMENTED ON ANY ONE Dictin

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

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

 COMPILER DIAGNOSTICS, OPERATING PROBLEMS OR SUGGESTIONS ON HOW TO Dictin

 IMPROVE THIS PROGRAM. HOPEFULLY, IN THIS WAY FUTURE VERSIONS OF Dictin

 THIS PROGRAM WILL BE COMPLETELY COMPATIBLE FOR USE ON YOUR Dictin

 COMPUTER. Dictin

 Dictin

 PURPOSE Dictin

 ------- Dictin

 THIS PROGRAM IS DESIGNED TO CREATE A REACTION INDEX FOR EACH Dictin

 MATERIAL ON AN ENDF/B FORMATTED TAPE AND TO INSERT THIS REACTION Dictin

 INDEX IN FILE 1, SECTION 451 OF EACH MATERIAL. Dictin

 Dictin

 IN THE DESCRIPTION THAT FOLLOWS FOR SIMPLICITY THE ENDF/B Dictin

 TERMINOLOGY---ENDF/B TAPE---WILL BE USED. IN FACT THE ACTUAL Dictin

 MEDIUM MAY BE TAPE, CARDS, DISK, OR ANY OTHER MEDIUM. Dictin

 Dictin

 ENDF/B FORMAT Dictin

 ------------- Dictin

 THIS PROGRAM ONLY USES THE ENDF/B BCD OR CARD IMAGE FORMAT (AS Dictin

 OPPOSED TO THE BINARY FORMAT) AND CAN HANDLE DATA IN ANY VERSION Dictin

 OF THE ENDF/B FORMAT (I.E., ENDF/B-I, II,III, IV, V OR VI FORMAT). Dictin

 Dictin

 THIS PROGRAM WILL AUTOMATICALLY DETERMINE WHICH VERSION OF THE Dictin

 ENDF/B FORMAT EACH MAT IS IN AND WILL THEN PROPERLY REPLACE THE Dictin

 REACTION INDEX FOR EACH MAT. DIFFERENT MATS ON THE SAME TAPE MAY Dictin

 EVEN BE IN DIFFERENT VERSIONS OF THE ENDF/B FORMAT. Dictin

 Dictin

 IT IS ASSUMED THAT THE DATA IS CORRECTLY CODED IN THE ENDF/B Dictin

 FORMAT AND NO ERROR CHECKING IS PERFORMED. IN PARTICULAR IT IS Dictin

 ASSUMED THAT THE MAT, MF AND MT ON EACH LINE IS CORRECT. SEQUENCE Dictin

 NUMBERS (COLUMNS 76-80) NEED NOT BE PRESENT ON INPUT, BUT WILL BE Dictin

 CORRECTLY OUTPUT ON ALL LINES. Dictin

 Dictin

 ENDF/B FORMAT VERSION Dictin

 --------------------- Dictin

 THE ENDF/B FORMAT CAN BE DETERMINED FROM THE SECOND LINE OF Dictin

 THE HOLLERITH SECTION (MF=1, MT=451). Dictin

 ENDF/B-IV = N1 - LINE COUNT (POSITIVE) Dictin

 ENDFB/-V = N1 = N2 =0 Dictin

 ENDF/B-VI = N1 =0, N2= VERSION NUMBER (6 OR MORE) Dictin

 Dictin

 SECTION SIZE Dictin

 ------------ Dictin

 SINCE THIS PROGRAM ONLY READS THE DATA ONE LINE AT A TIME THERE Dictin

 IS NO LIMIT TO THE SIZE OF ANY GIVEN SECTION, E.G. THE TOTAL Dictin

 CROSS SECTION MAY BE DESCRIBED BY 200,000 DATA POINTS. Dictin

 Dictin

 NUMBER OF SECTIONS PER TAPE Dictin

 --------------------------- Dictin

 IT IS ASSUMED THAT THE ENDF/B TAPE CONTAINS 100,000 OR FEWER Dictin

 SECTIONS = 100,000 OR FEWER MAT,MF,MT COMBINATIONS. IF THIS LIMIT Dictin

 IS EXCEEDED THIS PROGRAM WILL TERMINATE EXECUTION. IF NEED BE THIS Dictin

 LIMIT CAN EASILY BE CHANGED BY CHANGING THE DIMENSION STATEMENT Dictin

 BELOW AND RE-DEFINING THE VARIABLE MAXTAB IN THE BELOW DATA Dictin

 STATEMENT. ALTERNATIVELY THE ENDF/B TAPE MAY BE DIVIDED INTO A Dictin

 NUMBER SMALLER TAPES EACH CONTAINING 100,000 OR FEWER SECTIONS. Dictin

 EACH ENDF/B TAPE CAN THEN RUN THROUGH THIS PROGRAM AND THE OUTPUT Dictin

 FOR EACH ENDF/B TAPE CAN THEN BE RE-COMBINED (I.E., MERGED BACK Dictin

 TOGETHER). Dictin

 Dictin

 HOLLERITH SECTION Dictin

 ----------------- Dictin

 IF ANY MATERIAL DOES NOT INITIALLY CONATIN A SECTION MF=1, MT=451 Dictin

 A WARNING MESSAGE WILL BE PRINTED AND THE MATERIAL WILL BE COPIED. Dictin

 Dictin

 IF ANY MATERIAL INITIALLY CONTAINS A SECTION MF=1, MT=451 A NEW Dictin

 REACTION INDEX WILL BE CREATED AND INSERTED. THE INITIAL SECTION Dictin

 MF=1, MT=451 MAY OR MAY NOT CONTAIN A REACTION INDEX. Dictin

 Dictin

 IF THE MATERIAL INITIALLY CONTAINS A REACTION INDEX IT WILL BE Dictin

 USED TO DEFINE THE MOD NUMBER FOR CORRESPONDING SECTIONS IN THE Dictin

 NEW REACTION INDEX (I.E. IF A SECTION FROM THE ORIGINAL REACTION Dictin

 INDEX HAS THE SAME MF/MT NUMBERS AS A SECTION IN THE NEW REACTION Dictin

 INDEX THE MOD NUMBER FROM THE ORIGINAL REACTION INDEX WILL BE USED Dictin

 IN THE NEW REACTION INDEX). OTHERWISE THE MOD NUMBER IN THE NEW Dictin

 REACTION INDEX WILL BE SET EQUAL TO ZERO. Dictin

 Dictin

 PROGRAM OPERATION Dictin

 ----------------- Dictin

 THE ENTIRE ENDF/B TAPE IS FIRST READ AND A DICTIONARY ENTRY IS Dictin

 CREATED FOR EACH SECTION OF THE TAPE. THE ENDF/B TAPE IS THEN Dictin

 REWOUND AND READ A SECOND TIME. DURING THIS SECOND PASS THE Dictin

 DICTIONARY OF EACH MAT IS REPLACED. THIS VERSION OF DICTIN Dictin

 DOES NOT USE SCRATCH FILES AND IS MORE EFFICIENT THAN EARLIER Dictin

 VERSIONS OF DICTIN. Dictin

 Dictin

 INPUT LINES Dictin

 ----------- Dictin

 LINE COLS. DESCRIPTION Dictin

 ---- ----- ------------------------------ Dictin

 1 1-60 ENDF/B INPUT DATA FILENAME Dictin

 (STANDARD OPTION = ENDFB.IN) Dictin

 2 1-60 ENDF/B OUTPUT DATA FILENAME Dictin

 (STANDARD OPTION = ENDFB.OUT) Dictin

 Dictin

 EXAMPLE INPUT NO. 1 Dictin

 ------------------- Dictin

 READ \ENDFB6\K300\ENDFB.IN AND WRITE \ENDFB\K300\ENDFB.OUT. THE Dictin

 FOLLOWING 2 INPUT LINES ARE REQUIRED, Dictin

 Dictin

 \ENDFB6\K300\ENDFB.IN Dictin

 \ENDFB6\K300\ENDFB.OUT Dictin

 Dictin

 EXAMPLE INPUT NO. 2 Dictin

 ------------------- Dictin

 USE THE DEFAULT FILENAMES TO READ ENDFB.IN AND WRITE ENDFB.OUT. Dictin

 2 BLANK INPUT LINES ARE REQUIRED Dictin

 Dictin

 INPUT FILES Dictin

 ----------- Dictin

 UNIT DESCRIPTION Dictin

 ---- ----------- Dictin

 2 INPUT PARAMETERS (BCD - 80 CHARACTERS/RECORD) Dictin

 10 ORIGINAL TAPE OF ENDF/B DATA (BCD - 80 CHARACTERS/RECORD) Dictin

 Dictin

 OUTPUT FILES Dictin

 ------------ Dictin

 UNIT DESCRIPTION Dictin

 ---- ----------- Dictin

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

 11 FINAL TAPE OF ENDF/B DATA (BCD - 80 CHARACTERS/RECORD) Dictin

 Dictin

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

 --------------------------------------------------------------- Dictin

 UNIT FILE NAME Dictin

 ---- ---------- Dictin

 2 DICTIN.INP Dictin

 3 DICTIN.LST Dictin

 10 ENDFB.IN Dictin

 11 ENDFB.OUT Dictin

 Dictin

 ======================================================================= Dictin