

ADAS Subroutine r8fctn

FUNCTION R8FCTN(STR , IABT)

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C-----
C
C ***** FORTRAN77 REAL*8 FUNCTION: R8FCTN *****
C
C PURPOSE : TO CONVERT A FLOATING POINT NUMBER STORED IN A STRING
C           INTO A REAL*8 VARIABLE.
C
C CALLING PROGRAM: GENERAL USE
C
C FUNCTION:
C
C           (R*8)  R8FCTN  = FUNCTION NAME
C           (C*(*)) STR    = STRING CONTAINING SINGLE FLOATING POINT NO.
C           (I*4)  IABT    = RETURN CODE:
C                       0 => NO ERROR
C                       2 => ERROR (A VALUE 'R8FCTN=0.0' WILL BE
C                               RETURNED) .
C                       9 => OVERFLOW ERROR (EXPONENT > IUOFLW)
C                               (A VALUE 'R8FCTN=0.0' RETURNED)
C                       10 => UNDERFLOW ERROR (EXPONENT <-IUOFLW)
C                               (A VALUE 'R8FCTN=0.0' RETURNED)
C
C           (I*4)  IUOFLW  = PARAMETER = MODULUS OF MAXIMUM ALLOWED
C                               EXPONENT = 60
C
C           (C*1)  CH0     = PARAMETER = '0'
C           (C*1)  CH9     = PARAMETER = '9'
C           (C*1)  BLANK   = PARAMETER = ' '
C           (C*1)  CPLUS   = PARAMETER = '+'
C           (C*1)  CMINUS  = PARAMETER = '-'
C           (C*1)  CPNT    = PARAMETER = '.'
C           (C*1)  CHE     = PARAMETER = 'E'
C           (C*1)  CHD     = PARAMETER = 'D'
C           (C*1)  CLE     = PARAMETER = 'e'
C           (C*1)  CLD     = PARAMETER = 'd'
C
C           (I*4)  ILEN    = LENGTH OF 'STR' STRING IN BYTES
C           (I*4)  M1      = STARTING BYTE IN 'STR' OF NUMBER
C                               INCLUDING SIGN
C           (I*4)  M2      = LAST BYTE IN 'STR' OF NUMBER
C           (I*4)  IE      = STARTING BYTE OF EXPONENT IN 'STR'
C                               IGNORING ANY SIGN PRESENT.
C           (I*4)  MS      = 0 => MANTISSA HAS NO SIGN
C                               1 => MANTISSA HAS A SIGN
C           (I*4)  IS      = 0 => EXPONENT HAS NO SIGN
C                               1 => EXPONENT HAS A SIGN
C           (I*4)  IPOW    = EXPONENT
C           (I*4)  ICH0    = ICHAR('0')
C           (I*4)  ICH9    = ICHAR('9')
C           (I*4)  ISTR    = ICHAR(CURRENT BYTE POSITION IN 'STR')
C           (I*4)  I       = GENERAL USE
```

C
C (L*4) LMANT = .TRUE. => MANTISSA BEING ANALYSED
C .FALSE. => EXPONENT BEING ANALYSED
C (L*4) LPOINT = .TRUE. => DECIMAL POINT FOUND IN MANTISSA
C .FALSE. => NO DECIMAL POINT FOUND IN MANT.
C (L*4) LFOUND = .TRUE. => ALL OF THE INPUT NUMBER BYTES
C HAVE BEEN ASSESSED.
C .FALSE. => INPUT NUMBER BYTES STILL BEING
C ASSESSED.

C NOTE: AN ERROR WILL OCCUR (IABT=2) IF THERE IS MORE THAN ONE
C NUMBER OCCURING IN THE STRING 'STR()'

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C DATE: 26/10/90

C VERSION : 1.2

C DATE : 20-12-2001

C MODIFIED : Martin O'Mullane

C - Removed mainframe listing information beyond column 72.

C VERSION : 1.3

C DATE : 03-12-2003

C MODIFIED : Hugh Summers

C - Allowed lower case 'e' or 'd' in the real number spec.

C VERSION : 1.4

C DATE : 10-04-2007

C MODIFIED : Allan Whiteford

C - Modified documentation as part of automated
C subroutine documentation preparation.

C
C
C-----
C CHARACTER*(*) STR
C INTEGER IABT