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-- File: StringDefs.Mesa
-- Edited by Johnsson on April 11, 1978 9:52 AM

DIRECTORY AltoDefs: FROM "altodefs";

StringDefs: DEFINITIONS =
  BEGIN

    StringHeaderSize: PRIVATE CARDINAL = 2;

    CharsPerWord: CARDINAL = AltoDefs.CharsPerWord;
    charlength: CARDINAL = AltoDefs.charlength;
    CharsPerPage: CARDINAL = AltoDefs.CharsPerPage;
    LogCharsPerPage: CARDINAL = AltoDefs.LogCharsPerPage;

    SubStringDescriptor: TYPE = RECORD [
      base: STRING,
      offset, length: CARDINAL];

    SubString: TYPE = POINTER TO SubStringDescriptor;

    Overflow: SIGNAL;
    InvalidNumber: SIGNAL;
    StringBoundsFault: SIGNAL [s:STRING] RETURNS [ns:STRING];

    WordsForString: PROCEDURE [nchars:CARDINAL] RETURNS [CARDINAL];

    AppendChar: PROCEDURE [s:STRING, c:CHARACTER];
    AppendString: PROCEDURE [to,from:STRING];
    EqualString, EquivalentString: PROCEDURE [s1,s2:STRING] RETURNS [BOOLEAN];
    EqualStrings, EquivalentStrings: PROCEDURE [s1,s2:STRING] RETURNS [BOOLEAN];

    AppendSubString: PROCEDURE[to:STRING, from:SubString];
    EqualSubStrings, EquivalentSubStrings: PROCEDURE [s1,s2:SubString] RETURNS [BOOLEAN];
    EqualSubString, EquivalentSubString: PROCEDURE [s1,s2:SubString] RETURNS [BOOLEAN];
    DeleteSubString: PROCEDURE [s:SubString];

    -- routines for converting between strings and numbers

    StringToDecimal: PROCEDURE [STRING] RETURNS [INTEGER];
    StringToOctal: PROCEDURE [STRING] RETURNS [UNSPECIFIED];
    StringToNumber: PROCEDURE [s: STRING, radix: CARDINAL]
      RETURNS [UNSPECIFIED];
    StringToLongNumber: PROCEDURE [s: STRING, radix: CARDINAL]
      RETURNS [LONG INTEGER];
    AppendNumber: PROCEDURE [s: STRING, n: CARDINAL, radix: CARDINAL];
    AppendDecimal: PROCEDURE [s: STRING, n: INTEGER];
    AppendOctal: PROCEDURE [s: STRING, n: UNSPECIFIED];
    AppendLongNumber: PROCEDURE [s: STRING, n: LONG INTEGER, radix: CARDINAL];

    -- routines for bcp1 strings

    bcp1StringHeaderSize: PRIVATE CARDINAL = 1;
    bcp1MaxLength: PRIVATE CARDINAL = 255;

    bcp1STRING: TYPE = PRIVATE MACHINE DEPENDENT RECORD[
      SELECT OVERLAID * FROM
        length => [
          length: [0..bcp1MaxLength], body: CHARACTER],
        characters => [
          char: PACKED ARRAY [-1..bcp1MaxLength) OF CHARACTER],
      ENDCASE];

    bcp1StringOverflow, mesaStringOverflow: SIGNAL;
    WordsForBcp1String: PROCEDURE [nchars:CARDINAL] RETURNS [CARDINAL];
    MesaToBcp1String: PROCEDURE [s:STRING, t:POINTER TO bcp1STRING];
    Bcp1ToMesaString: PROCEDURE [t:POINTER TO bcp1STRING, s:STRING];

  END.
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