Pascal: Converting strings to numeric variables (2 of 2)

```
Begin (*STRFP*)
  Numeric:=['0'..'9'];
  Exponent:=['E','e'];
  Modifier:=['+','-','.',','];
  DP:=False; EX:=False; IM:=True;
  MN:=False; MX:=False; SN:=False;
  DEC:=0; DEX:=0; EDP:=0; INX:=1;
  LEN:=Length(STR); FP:=0;
  STRFP:=False;
  Search;  (* Find start of number *)
  While INX<=LEN Do Begin
     CH:=STR[INX];
     If CH in Numeric+Exponent+Modifier
        Then Begin
           If CH in Numeric
              Then If EX
                 Then Begin
                    If DEX<1000 Then      (* Exponent *)
                       DEX:=DEX*10+ORD(CH)-ORD('0');
                    SN:=True
                 End

                 Else Begin
                    If FP<1.0E8
                       Then               (* Mantissa *)
                       FP:=FP*10+ORD(CH)-ORD('0')
                    Else EDP:=EDP+1;
                    If DP Then
                       (* Digits to right of DP *)
                       DEC:=DEC+1; IM:=False;
                    SN:=True
                 End
              Else Case CH of
                 '+': If SN Then
                         (* Duplicate '+' sign *)
                         Terminate
                      Else SN:=True
                 '-': If SN Then
                         (* Duplicate '-' sign *)
                         Terminate
                      Else Begin
                            If EX Then MX:=True
```

```
                                    Else MN:=True;
                                 SN:=True
                              End;
                        '.': If DP of EX Then
                              (* Duplicate '.' *)
                              Terminate
                              Else DP:=True;
                        'E','e': If EX Then Terminate
                                    (* Duplicate 'E' *)
                              Else Begin
                                 If IM Then
                                    (* Implied mantissa *)
                                    FP:=1.0;
                                 EX:=True;
                                 SN:=False
                              End;
                     End; (*Case*)
                  INX:=INX+1
               End
               Else Terminate  (* End of number *)
            END;
        Terminate  (* End of string *)
      End;

      Function Strint;  (* String to Integer *)

      Var FP: real;

      Begin
        Strint:=STRFP (STR,FP);  (* First convert to real *)
        If ABS(FP)<=MasInt
           Then INT:=ROUND(FP)  (* then round to integer *)
           Else Begin
              String:=False;  (* Integer out of range *)
              INT:=0
           End
      End;

      Begin  (* Unit Initialization *)
      End.
```

This sample program illustrates the use of STRINGSTUF. Use the compiler $V- option to override the normal string length checking.

```
      Program Stringtest;

      Uses STRINGSTUF;  (* tests STRINGSTUF library unit *)

      Var Input,STR: string;
          INT: integer;
          FP: real;

      Begin
```

```
          Page (output);
          Writeln ('STRINGSTUF String => Numeric Conversion:');
          Repeat
            Writeln;
            Write ('String : ');
            Readln (input);
        (*$V-*)
            If STRFP (input,FP) Then
              Begin
                Writelnn ('   real: ',FP);
                If Strint (input,INT)
                  Then Writeln ('integer:  ',INT)
                    Else Writeln('integer:  Out of range.')
              End
                Else Writeln('No numeric value in string.');
        (*$V+*)
          Until input=''
        End.
Apple Tech Notes


Keywords:  <None>

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19960215 11:05:19.00
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Tech Info Library Article Number: 682