Abstract. This chapter describes the tools ISTVS, ISTVW, ISTVA and ISTAN. These tools are supplementary to the basic analysis facilities provided by Toolpack/1 Release 2.

Particular emphasis is given to the instrumentation facilities of ISTAN and to their integration into a Fortran environment based on Toolpack/1 tools.

1. Introduction

This chapter describes the tools ISTVS, ISTVW, ISTVA and ISTAN, and shows some simple examples of their use. These tools supplement the basic analysis facilities of Toolpack/1 Release 2 described in the Chapter “Analysis Tools for Fortran 77”.

2. ISTVS – View Symbols

The Toolpack/1 symbol viewing tool, ISTVS, produces a formatted listing of the symbol table produced by the Toolpack/1 parser, ISTYP. The symbols for each program unit are listed separately, a section being output for each symbol type (label, common block, name, program unit identifier, variable, procedure, statement function and entry point) existing in the program unit. The symbols within each section are listed in alphabetic order.
The listing is headed by user-supplied text concatenated with ‘: Symbol Table Listing’ and followed by the date and time that the listing is being produced.

The output from this tool is not intended to be suitable for inclusion "as is" in documentation. In particular, the output includes such things as parse tree node numbers, which are only useful in connection with the parse tree. Instead, this tool is meant to be a low-level facility for examining symbol tables.

Example VS-1 shows some typical output from this tool.

Example VS-1

Input program:

```fortran
PROGRAM VS1
CALL B(4.)
END
SUBROUTINE B(Y)
REAL X
PRINT *,TAN(Y**2)
END
```

Output from ISTVS:

Example VS-1: Symbol Table Listing, 13:00:30 12 NOV 1986

Program Unit: VS1 Main Program
Procedures:
  B SUBROUTINE
      Called as a subroutine

Program Unit: B SUBROUTINE
Names (Usage Unknown):
  X REAL
      Explicitly typed
Variables:
  Y REAL
      Formal parameter
      In an expression
Procedures:
  TAN Generic
      Standard intrinsic function
      Called as a function
      In an expression