

Volume Five: Advanced Procedures

This volume begins the discussion of some specialized information that is of interest to those wanting to become advanced assembly language programmers. Many of the techniques appearing in this volume rarely find their way into typical assembly language programs; this is not because this material is unimportant, but, rather, because most assembly language programs are not written by advanced assembly language programmers. This volume is also of interest to those intending to write compilers or other language translators. This volume discusses the run-time environments that may high level languages use.

- Chapter One: Thunks
This chapter describes a special type of indirect procedure call known as the *thunk*. Thunks are useful for deferring the execution of sequences of code in the program.
- Chapter Two: Low Level Iterator Implementation
This chapter discusses how to implement iterators in "pure" assembly language (a topic too advanced to present in earlier volumes of this text). This chapter also discusses alternative implementations of iterators in an assembly language program.
- Chapter Three: Coroutines
This chapter describes a special type of program unit known as the coroutine. Coroutines are excellent structures to use when several pieces of code "take turns" executing, such as when players take turns in a game.
- Chapter Four: Low Level Parameter Implementation
This chapter discusses several new ways to pass parameters and how to implement parameter passing in low-level ("pure") assembly language.
- Chapter Five: Lexical Nesting
This chapter discusses the concept of block structured programming languages and how to implement local and non-local automatic variable access in a program.
- Chapter Six: Questions and Exercises
This chapter provides questions, programming projects, and laboratory exercises for this volume.

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