NOTE: This Technical Note has been [retired](). Please see the [Technical Notes]() page for current documentation.

Technical Note PT30
Pascal Routines Passed by Pointer

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Introduction

Routines passed by pointer are used in many places in conjunction with Macintosh system routines. For example, filter procedures for modal dialogs are passed by pointer, as are controls' action procedures (when calling `TrackControl`), and I/O completion routines.

If you're using MPW Pascal, the syntax is usually

where MyProc is the procedure passed by pointer (using the @ symbol).

Because of the way that MPW Pascal (and some other compilers) construct stack frames, any procedure or function passed by pointer **must not** have its declaration nested within another procedure or function. If its declaration is nested, the program will crash, probably with an illegal instruction error. The following example demonstrates this:

```
    PROGRAM CertainDeath;

       PROCEDURE CallDialog;

          VAR
             x : INTEGER;

          FUNCTION MyFilter(theDialog: DialogPtr; VAR theEvent: EventRecord;
                            VAR itemHit: INTEGER): Boolean;
          {note that MyFilter's declaration is nested within CallDialog}

          BEGIN {MyFilter}
             {body of MyFilter}
          END; {MyFilter}

       BEGIN {CallDialog}
          ModalDialog(@MyFilter,itemHit) {<------------ will crash here}
       END; {CallDialog}

    BEGIN {main program}
          CallDialog;
```

References

Macintosh Memory Management: An Introduction

Downloadables

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