Macintosh
Sample Code Notes

®

Developer Technical Support

#23: FracApp 2.0

Written by: Keith Rollin

Versions: 2.0   May 1990

Components:	FracApp.MAMake	May 1, 1990
	FracApp.r	May 1, 1990
	GoFigger.a	May 1, 1990
	MFracApp.p	May 1, 1990
	Read Me	May 1, 1990
	UAreaSelector.inc1.p	May 1, 1990
	UAreaSelector.p	May 1, 1990
	UFracApp.inc1.p	May 1, 1990
	UFracApp.p	May 1, 1990
	UOffScreen.inc1.p	May 1, 1990
	UOffScreen.p	May 1, 1990
	URectStack.inc1.p	May 1, 1990
	URectStack.p	May 1, 1990

This program requires MPW 3.1 or greater and MacApp 2.0 final to build. Follow the instructions concerning "OtherRezOptions" in FracApp.MAMake if you are using MPW 3.2.

The first time, build with:

```
MABuild -NeedsColorQD -NeedsFPU [-NeedsMC68020] FracApp -AutoBuild
```

After the first time, MacApp will be properly built, so you can take out the `-AutoBuild`

```
MABuild -NeedsColorQD -NeedsFPU [-NeedsMC68020] FracApp
```

This is a not too small application that can calculate a fractal in full color on the Macintosh II, using direct-68881 code for speed. It saves files on disk in PICT2 format. This version specifically is set up to be fully compatible with Color QuickDraw and supports color table animation when using 32-Bit Color QuickDraw.

Version 1.0
August 1988 by Bo3b Johnson

- Complete MacApp 1.1.1 application.
- Demonstrated speed gains using direct-68881 code.
- Calculated the fractal in the background.
- Printed at 300 dpi (FracApp 300).
- Used the Color Manager (FracApp).
- Used the Palette Manager (FracApp Palette).
- Drew to an off-screen PixMap and GDevice.
- Saved file as PICT2.

- Replaced QuickDraw bottlenecks to reduce memory hit when reading or writing files.
- MultiFinder friendly.
- Color Table animation.
- Custom mouse tracking when etching a selection rectangle.
- Created a new document from the current selection.
- Batch mode—created multiple documents in succession and saved each one.

Version 2.0
May 1990 by Keith Rollin

- Uses MacApp 2.0.
- Broken out into multiple files.
- Uses new 32-Bit Color QuickDraw off-screen routines.
- Palette animation courtesy of 32-Bit Color QuickDraw.
- Implements faster algorithm for figuring Mandelbrot fractals (Mariani/Silver method).
- Shows use of new TDynamicArray class.
- Uses new document structure (TFracAppDocument <- TPICTDocument <- TDocument).
- Fractal calculations broken into their own engine classes.
- Faster core routine to figure pixel colors. Should be fairly optimized for 68882.
- Created new TOffscreen class for handling different off-screen techniques.
- Cleaned up "Unsafe use of an object field as a var or > 4 byte parameter" errors.
- Added Time Manager routines for arbitrating calculation time.
- Document preference for idle time calculations now works in a front-to-back order, rather than all documents being given time simultaneously.
- Added information bar to show elapsed time and algorithm name.
- Added scroll bar information tile to show percentage of fractal complete.
- Uses new header data format, so we use a different version number in header.