Getting Started with Neatroff

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The present document explains the steps necessary for setting up and using Neatroff. It uses the neatroff_make Git repository, which contains a set of standard macro packages and a top-level Makefile to obtain and build Neatroff and its helper programs, which are referred to as Neat* throughout this document. More details about Neatroff and the programs that accompany it are available at its homepage http://litcave.rudi.ir/.

Using Neatroff Without Installation

To use Neatroff without installing it, neatroff_make can be retrieved as follows:

```
$ git clone https://repo.or.cz/neatroff_make.git
```

This branch assumes that the resulting directory will not be removed and shall contain Neatroff fonts, macros, and binaries when using Neatroff. The "init" make target, clones the necessary Git repositories and obtains Ghostscript fonts. The "neat" target compiles the programs and generates Neatroff font descriptions. Finally, the demo/ subdirectory contains small examples and a Makefile to demonstrate how to use Neatroff.

```
$ make init
$ make neat
$ cd demo && make
```

To compile Neatroff documents outside of neatroff_make/demo, the Makefile in this directory serves as a good template. Copy it to your document directory and modify its BASE macro to point to the neatroff_make/ directory.

To add new fonts, simply place them in the fonts/ subdirectory and re-make the "neat" target. To use the new font in Neatroff, the file name without its extension must be mounted. For instance, if the name of the font is NewFont.ttf, the following Troff code mounts and uses this font.

```
.fp - F1 NewFont
.ft F1
Text in NewFont
```

Installing Neatroff

This section describes how to install Neatroff in system directories. First modify the BASE macro in neatroff_make/Makefile to point to the installation location. Then, after compilining Neatroff as described in the previous section, build the Makefile's install target.

```
$ make install
```

Note that this command may need to be executed by the superuser, depending on the directory specified as BASE. At this point Neat* should be installed. As described in the previous section, the Makefile in the demo/ subdirectory is a good template for compiling Neatroff documents. You need to update its value of the BASE macro.

Adding Fonts: A remarkable design decision in troff was the separation of output devices, for instance for Postscript, from the troff typesetting program. This separation requires generating device-independent font descriptions, listing available glyphs for each font and their metrics. Neatroff's font descriptions can be generated with the Neatmkfn program as follows (BASE is Neatroff's installation directory):

```
$ neatmkfn -b -a <fontpath.afm >$BASE/devutf/fontname
$ neatmkfn -b -o <fontpath.ttf >$BASE/devutf/fontname
```

After generating the font description, the new font can be mounted in troff just as other fonts with the .fp request:

```
.fp 12 F2 fontname
```

Alternatively, you can place your fonts in the neatroff_make/fonts/ directory before running make neat; the neat Makefile target generates and installs font descriptions for all fonts in that directory automatically. This is especially convenient when the number of fonts is large.

There is another method of using fonts in Neatroff that creates the font descrip-

tions on the fly. Despite its overhead, this method may be convenient when testing new fonts. It uses the fp macro package, which is included in neatroff_make (-mfp should be passed to Neatroff). First, the value of the fp.src string register should specify the directory containing new fonts. The package defines .fp.ttf, .fp.otf, and .fp.afm macros, whose behaviour is quite similar to the standard .fp request, except that the third argument should be the name of the font file without its extension. Thus, for mounting /path/to/fonts/NewFont.ttf, test.tr can contain:

```
.ds fp.src "/path/to/fonts/
.fp.ttf - F3 NewFont
.ft F3
Testing the new font...
```

More Information

Neatroff Introduction

Explains the differences between Neatroff and other troff implementations. Available at http://litcave.rudi.ir/neatroff.pdf.

Typesetting Mathematics with Neateqn

Introduces the Neateqn preprocessor for typesetting mathematical equations. Available at http://litcave.rudi.ir/neateqn.pdf.

Neatroff Introduction in Farsi

Explains specifying text direction in right-to-left languages and Keshideh adjustment in Farsi. Available at http://litcave.rudi.ir/neatfarsi.pdf.