

FORTRAN 77 Programming in UNIX ENCE 202, Spring 2000

This document provides step-by-step instructions for FORTRAN 77 program creation and debugging on a UNIX machine. If you log directly into a UNIX machine, you may follow these instructions from any terminal window. Otherwise, you must login through a telnet window to a UNIX machine before you proceed with step 1 below. This handout describes the editing of FORTRAN source code file **assakkaf.for** and provides instructions for compiling, linking, and running the resulting program. This handout does not describe specifics with the UNIX environment. If you are completely unfamiliar with UNIX, I recommend that you attend the TA's office hours, log in to a machine, and ask questions until you can at least use some basic commands (including `man`, `ls`, `mkdir`, `mv`, `cp`, `cd`).

Step 1: Create your FORTRAN source code file. I will officially use the **pico** editor in this class, although you may use another editor such as **emacs** if you prefer. From the UNIX prompt, edit your FORTRAN program by typing the following at the command line:

```
pico assakkaf.for
```

The **pico** editor window will open on your screen, displaying the contents of the file "assakkaf.for" (blank if it did not yet exist) along with a list of standard **pico** commands at the bottom of the window. At this point, you may type the program into the window, using the arrow keys to move the cursor and backspace/delete to remove undesired characters.

The **pico** editor commands are listed at the bottom of window, such as "**^G**", and are described next to their symbol (e.g., "**^G**" means "Get Help"). You may initiate any of these commands by holding down the *Ctrl* key on your keyboard while pressing the letter indicated after the "**^**". For example, if you want to exit from the **pico** editor (the "**^X**" command), hold down the *Ctrl* key and simultaneously press **x** on the keyboard. I strongly recommend that you spend some time familiarizing yourself with **pico** early in the term because you will use it for every assignment.

Step 2: Compile and link your FORTRAN program. After you have saved your source code file, exit the **pico** editor. Use the **f77** compiler to compile and link the program with the following command:

```
F77 assakkaf.for -o assakkaf.exe
```

In the above command, you are telling the FORTRAN compiler/linker (**f77**) to compile and link the source code file "assakkaf.for", then store the resulting executable program under file name "assakkaf.exe". You may use the **ls** UNIX command to verify that the executable program "assakkaf.exe" has been created. If **gcc** fails, it will print error messages to the screen that may help you identify and

correct problems in your source code file (“assakkaf.for”). In this case, you must return to Step 1 to edit your program before you again attempt to compile your program.

Step 3: Run your FORTRAN program. After **f77** successfully produces an executable file, you may run the program. This is done by typing the executable program name at the UNIX prompt:

assakkaf.exe

If the observed output is correct, you have completed your assignment and may e-mail the source code file as specified in the “Homework E-mail Submission” handout. If the observed output is incorrect, you must return to *Step 1* to edit, re-compile, and re-run your program.