

Assignment 1

Due Tues. Sep. 8

1. Download the program quadratic.f (from myprogs)
2. Look at the the program quadratic.f and try to understand it, we discussed it in class.
3. Compile and link the program by typing:
gfortran -g -Wall -fno-automatic -ffixed-form -fbounds-check -fno-second-underscore quadratic.f
gfortran -g -Wall -fno-automatic -ffixed-form -fbounds-check -fno-second-underscore quadratic.o -o quadratic

4. Run the program by typing:
quadratic
5. Try some values that give imaginary roots
6. Try the extreme equation

$$x^2 - 20,000x + 1 = 0$$

using the 2 different methods.

Discuss the results and the advantages of the 2 methods.

If you have trouble with the equation above change the 20,000 to 2,000 or discuss how you could modify the program to handle even more extreme values.

7. Compiler Flags

Above we used the following flags

```
FFLAGS=-g -Wall -fno-automatic -ffixed-form -fbounds-check -fno-second-underscore
```

By using the manual (man gfortran) explain what each and every flag means.

8. Makefile

Write a Makefile to compile and link the program and test that it works.

Make sure to delete the files quadratic and quadratic.o (or you could add a clean target to your Makefile) and type make quadratic

9. Write a Fortran or C program to print `Hello World` to the terminal. Add it to your Makefile and Compile it, link it and run it. Turn in hardcopy of your program and your Makefile.