Fortran Quick Notes

Riley Fiske – September 19th, 2023

* <https://www.youtube.com/watch?v=s9KxEdq-LG4>
* File extensions: f95, f90, etc. for Fortran version
* Begin program with “program [name]”, end with “end program [name]”
  + Case insensitive
* Comments with exclamation mark “!”
* & lets a statement continue onto the next line
* print \*, “Hello World
* variable declarations go before executable commands
* explicitly typed variables:
  + LOGICAL (bools)
  + INTEGER (int)
  + REAL (float)
  + DOUBLE PRECISION
  + COMPLEX
  + CHARACTER
* Conditions:
  + == .eq.
  + /= .ne.
  + > .gt.
  + < .lt.
  + <= .le.
  + >= .ge.
  + .or.
  + .and.
  + .not.
* Loops:
  + do

…  
end do (infinite loop)

* + do ii = 1,10  
     …  
    end do (for finite number)
  + do while (ii > 10)  
     …  
     ii = ii + 1  
    end do (until condition true, while loop)
  + do  
     …  
     if(ii >= 10) exit  
    end do (exit condition midway loop)
* Arrays:
  + integer :: int\_array(6)
    - integer array of 6 elements
  + int\_array = [1,2,3,4,5,6]
    - assign all 6 elements
* Subroutines
  + Similar to program call
  + Call them with “call” within the program
* Functions