In-class Exercise 2 (Open book, 10 minutes)

Section_____________

Student ID_________________________Name(Print)____________________________

Loop: Chapman 4.1
Array: Chapman 6.1, 7.1.4

1. Write a Fortran 95/2003 function that outputs the maximum value from an input array of real type numbers. Please name your function maxFromArray.

   !start your function here
   real function maxFromArray( array, N )

   !start your input argument declarations here
   implicit none
   integer,intent(in)::N
   real, dimension(N), intent(in)::array

   !start your local variable declaration here
   integer::i=0

   !initialize output here
   maxFromArray = array(1)

   !start your loop here
   do i = 2, N
     if ( maxFromArray < array(i) ) then
       maxFromArray = array(i)
     end if
   end do

   !close your function here
   end function
2. Please complete the following program which calls the function you just wrote.

```fortran
program testMax
  implicit none

  integer, parameter::Size = 6
  real,dimension(Size)::array = 0.0
  !declare the function you wrote in problem 1
  real::maxFromArray
  !declare the counter in the counting loop
  integer::i=0

  write(*,*) "Enter ", Size, " real numbers:"
  !start a counting loop using the counter declared
  do i = 1, Size
    read(*,*) array(i)
  end do

  write(*,*) "The maximum is:"
  write(*,*) maxFromArray(array, Size)
end program
```

3. Now the above program has been compiled to an executable file named testMax. Please finish the last line displayed on the monitor when running the program with the following input information.

```
[jxue@backus tests]$ ./testMax
Enter 6 real numbers:
1
3
6
2
-1
0
The maximum is:

6.000000
```