**計算機概論作業9**

1. **題目及其題意說明:**

**寫一個可以讀檔的程式，假設在未知數據的情況下，使程式指出最大值與最小值。**

1. **程式設計流程之思考邏輯:**

**已經跟註解打在一起。**

program HW9

implicit none

character(len=20) :: filename

integer :: status, count = 0, value1, maxval, minval, line\_max=1, line\_min=1 !宣告整數有status, count , value1, maxval, minval, line\_max, line\_min ，其中設定行數(line\_max, line\_min出始值=1)

write (\*,\*) "Please enter the input-file name: (read1.txt)"

read (\*,"(A)") filename

write (\*,1) filename

1 format ("The input-file name is: ", a) !設定要讀的資料夾

open (unit=1, file=filename, status="old", action="read", iostat=status) !打開資料夾

openif: if (status==0) then !如果程式讀的檔名正確

read(1, \*, iostat=status) maxval ! 開始讀檔案裡的第一個數據

minval=maxval

count = 1

readloop: do ! 利用迴圈開始比較數據大小並代換列數

read(1, \*, iostat=status) value1

if (status /= 0) exit

count = count + 1

maxval = max(maxval, value1)

minval = min(minval, value1) !假設maxval =第一個讀到的數據(令maxval為比較MAX的代數)

!minval =value 假設minval =第一個讀到的數據(令minval為比較MIN的代數)

if (value1 >= maxval) line\_max = count ! 比較大小，極值會把等號左邊的變數代換掉

if (value1 <= minval) line\_min = count

end do readloop

readif: if (status>0) then

write(\*,5) count + 1

5 format ("An error occurred reading line ", i6)

else readif

write(\*,2) maxval, line\_max !輸出MAX、MIN及所在列數

2 format ("The largest number is ", i5, " which is on the line ", i3)

write(\*,3) minval, line\_min

3 format ("The smallest number is ", i5, " which is on the line ", i3)

end if readif

else openif

write (\*,4) status

4 format ("Error opening file: IOSTAT = ", i6) !若讀到的檔名非指定，輸出Error opening file: IOSTAT =''

end if openif

close (unit=2) ! 結束將資料夾關閉

stop

end program HW9

1. **程式執行之結果:**

**The largest number:100 which is on the line 10  
The smallest number:10 which is on the line 1**

1. **心得:**

**這次的作業也不遜於上次的難度，真的真的很複雜，我一直修修改改了很多次才勉勉強搶把它拼出來，但也還好有同學的幫助才可以讓我完成這次的作業，真的很感謝那些幫助我的人。**