```
 1:
 2: ****************************************
 3: ./codes/series.f90
 4:
 5: PROGRAM series
 6: !**
 7: !** Investigate a well known series
 8: !**
 9:
10:   IMPLICIT NONE
11:
12:   !*** Use parameter to govern the array sizes and the
13:   !*** loop limits. This makes the code easier to maintain
14:   !*** if the problem size changes.
15:
16:   INTEGER, PARAMETER  :: n=6
17:   INTEGER :: maxaa,i,j,count
18:   INTEGER, DIMENSION(n) :: aa
19:   REAL :: ppn,pn,fibnum
20:   REAL, DIMENSION(n) :: bb
21:
22:   aa=(/3,7,5,4,14,21/)
23:
24:   !*** First sort into ascending numeric order
25:   !*** Note the loop index variables
26:
27:   DO i=1,n-1 ! ** outer loop
28:     DO j=i+1,n !** inner loop
29:       IF (aa(j) <  aa(i)) THEN
30:         pn=aa(i) !** Temp Store
31:         aa(i)=aa(j)
32:         aa(j)=pn
33:       END IF
34:     ENDDO
35:   ENDDO
36:
37:   maxaa=aa(n)
38:
39:   ppn=1
40:   pn=1
41:   count=1
42:
43:   !*** Loop up to the maximum number required in the series
44:   !*** The first two values stored in "pn" and "ppn"
45:   DO i=3,maxaa
46:     fibnum=ppn+pn
47:     IF (i == aa(count)) THEN
48:       bb(count)=fibnum
49:       count=count+1
50:     ENDIF
51:
52:     ppn=pn
53:     pn=fibnum
54:
55:   ENDDO
56:
57:   DO i=1,n
58:     PRINT*,aa(i),bb(i)
59:   ENDDO
60:
61: END PROGRAM series
62: ****************************************
63:
```