FORTRAN - PROGRAMMING STYLE

Programming style is all about following some rules while developing programs. These good practices impart values like readability, and unambiguity into your program.

A good program should have the following characteristics:

- Readability
- Proper logical structure
- Self-explanatory notes and comments

For example, if you make a comment like the following, it will not be of much help:

```
! loop from 1 to 10
do i=1,10
```

However, if you are calculating binomial coefficient, and need this loop for nCr then a comment like this will be helpful:

```
! loop to calculate nCr
do i=1,10
```

- Indented code blocks to make various levels of code clear.
- Self-checking codes to ensure there will be no numerical errors like division by zero, square root of a negative real number or logarithm of a negative real number.
- Including codes that ensure variables do not take illegal or out of range values, i.e., input validation.
- Not putting checks where it would be unnecessary and slows down the execution. For example:

```
real :: x
x = sin(y) + 1.0

if (x >= 0.0) then
   z = sqrt(x)
end if
```

- Clearly written code using appropriate algorithms.
- Splitting the long expressions using the continuation marker '&'.
- Making meaningful variable names.