

# Basics of FORTRAN Language

- Computer language used in scientific field
- Install using command 'sudo apt-get install gfortran' in Linux terminal
- Case insensitive
- Comments are written with symbol !
- It supports 97 characters (A-Z a-z 0-9 = + - \* \*\* / ( ) . % & : ; , blank < ? > [ ] { } ! ~ etc)
- FORTRAN has three section: Declaration (declare the variables), Execution(Run the code and give the output), and Termination(Terminate the program by end program followed by name).
- Variables : Variables are computer memory in which value of different types is stored. FORTRAN supports different types of variables.

Note that : variables name should be unique, meaningful name according to task so, human can understand easily, variables character length should be up to 63 but make short and clean, should be started from number, do not include unsupported characters by FORTRAN like \$.

## ➤ Data Types:

Integer      0, -22, 12346, +17 etc

Real          8., 90.9, +1.0e-3, 0.12e+1, -0.00099 etc.

Character    'my name is pawan', 'a', '9004', 'blank', "this is Fortran language" etc. here, should be written inside "" or ' '.

Logical      .true. Or .false.

Complex     (2,3) first gives real number while second gives imaginary.

Default integer    i,j,k,l,m,n

## ➤ Declaration of variables

integer :: a,b,c,number1, number2

real :: a,b,c,number1,number2

**character :: name, age, class**

➤ **Assignments :**

**variable\_name = expression**

**i.e. a = 2.3, name = 'pawan', age = 20**

➤ **Operators :**

+	Addition
-	Subtraction
*	Multiplication
/	Division
**	Exponentiation

➤ **Simple structure :**

**program any\_name**

**implicit none**

**variable declaration**

**statement(s)**

**end program any\_name (given above in first)**

**finally save the file with extension '.f90' i.e. sum.f90**

➤ **First program**

- **open the terminal (Alt+Ctrl+T)**
- **type gedit first\_program & and press enter**
- **Start the as given in exaple**