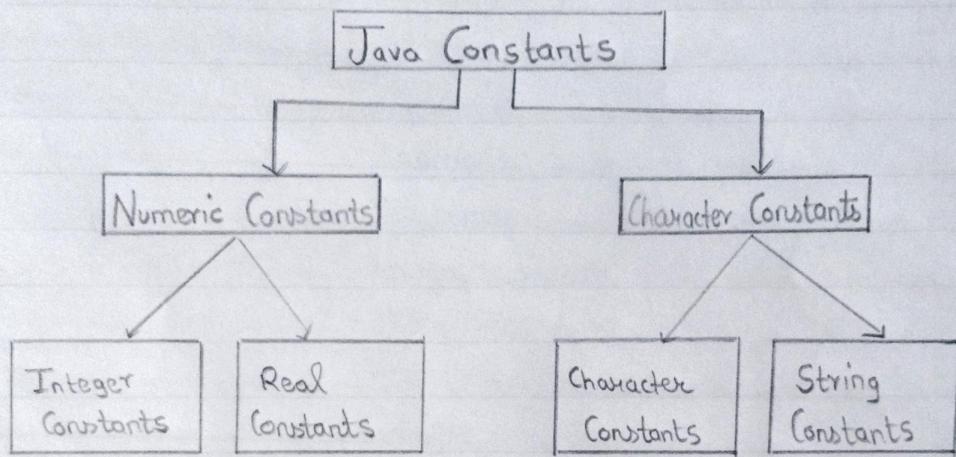


# Practical No. 01

Aim: Create, debug and run java programs based on constants, variables and operators.

Theory:



Java Constants

Concepts:

of constants, variables and operators in Java

## Practical No. 01

Aim: Create, debug and run java programs based on constants, variables and operators.

### Theory:

#### i) Constants:

- Constants in Java refer to fixed values that do not change during execution of programme.
- Constants in Java are divided into two sub-types, numeric constants and character constants.
- The numeric constants are further divided into integer constants and real constants.
- The character constants are further divided into character constants and string constants.

#### • Examples,

##### numeric constants :

i) Integer constants - 123, -321

ii) Real constants - 0.083, -0.15, 0.65E4

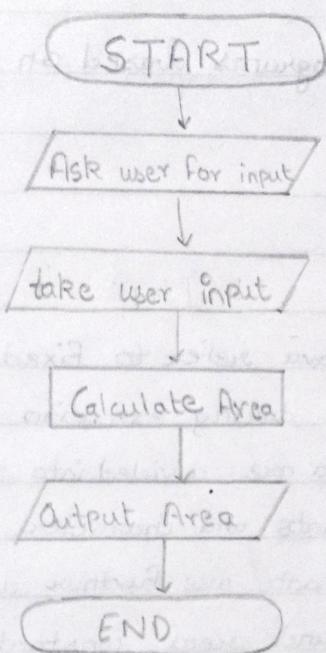
##### character constants :

i) character constants - 'x', '5', 'A'

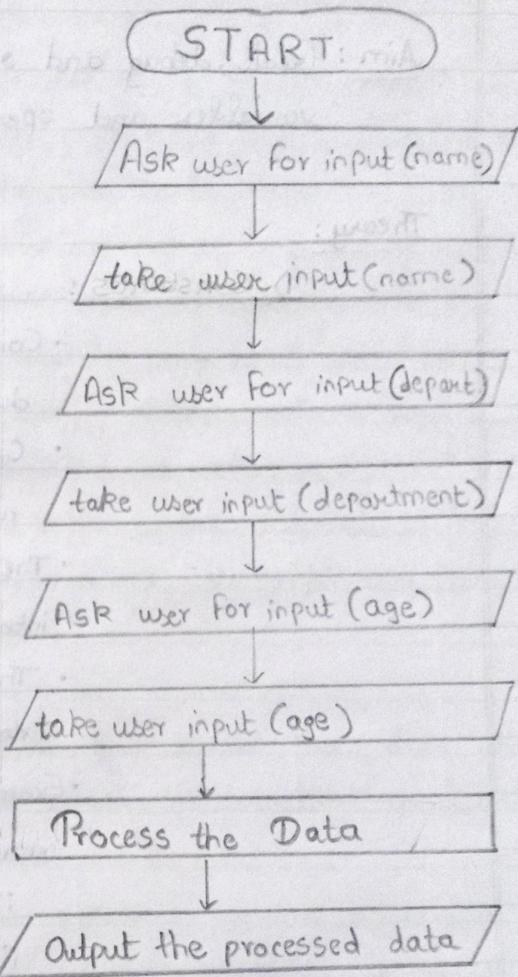
ii) String constants - "Hello", "1997", "?\$.."

#### 2) Variables :

- A variable is an identifier that denotes a storage location used to store a data value.
- Unlike constants that remain unchanged during the execution of a program, a variable may take different values at different times during the



Code 1 flow chart:  
Constants



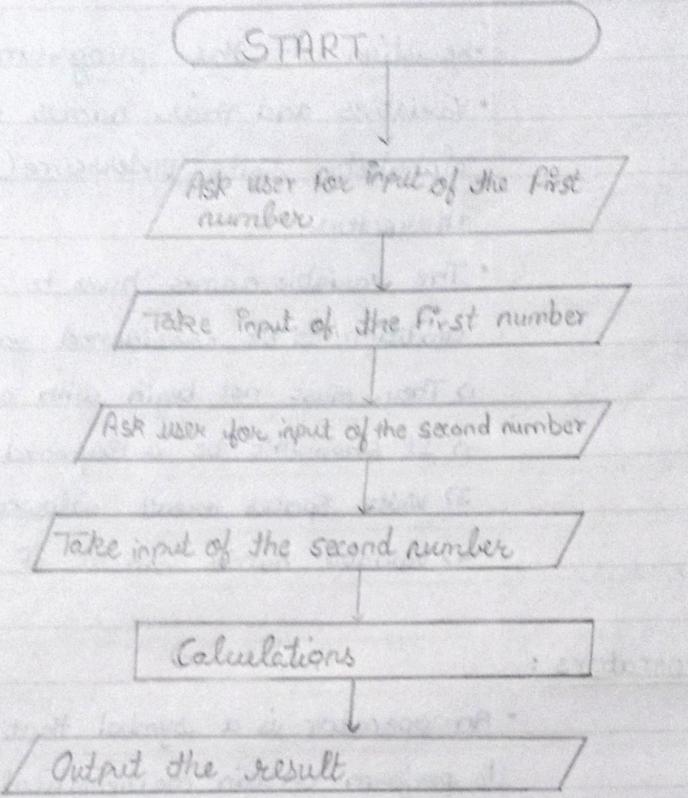
Code 2 flow chart: Operator

execution of the program.

- Variables and their names may consist of alphabets, digits, underscore (-), and dollar (\$) characters.
- The variable names have to meet the below condition to be considered valid.
  - 1) They must not begin with a digit.
  - 2) It shouldn't be a keyword.
  - 3) White spaces aren't allowed.
  - 4) Variable names can be of any length.

### 3) Operators :

- An operator is a symbol that tells the computer to perform certain mathematical or logical manipulations.
- The java operators can be specified into a number of related categories as below.
  - 1) Arithmetic operators , e.g. +, -, /, \*, %.
  - 2) Relational operators , e.g. <, >, ==, !=
  - 3) Logical operators , e.g. &&, ||, !
  - 4) Assignment operators , e.g. =
  - 5) Increment / Decrement operators . ++, --
  - 6) Conditional operators , ( ? ? )
  - 7) Bitwise operators , &, !, ^, ~, <<, >>, >>
  - 8) Special operators



### Code & flow chart : Operators

#### Conclusion :

Hence, by performing this practical, I learnt about the concepts of constants, variables and operators in Java. I also created, debugged and executed three Java programs on the concepts of constants, variables and operators respectively.