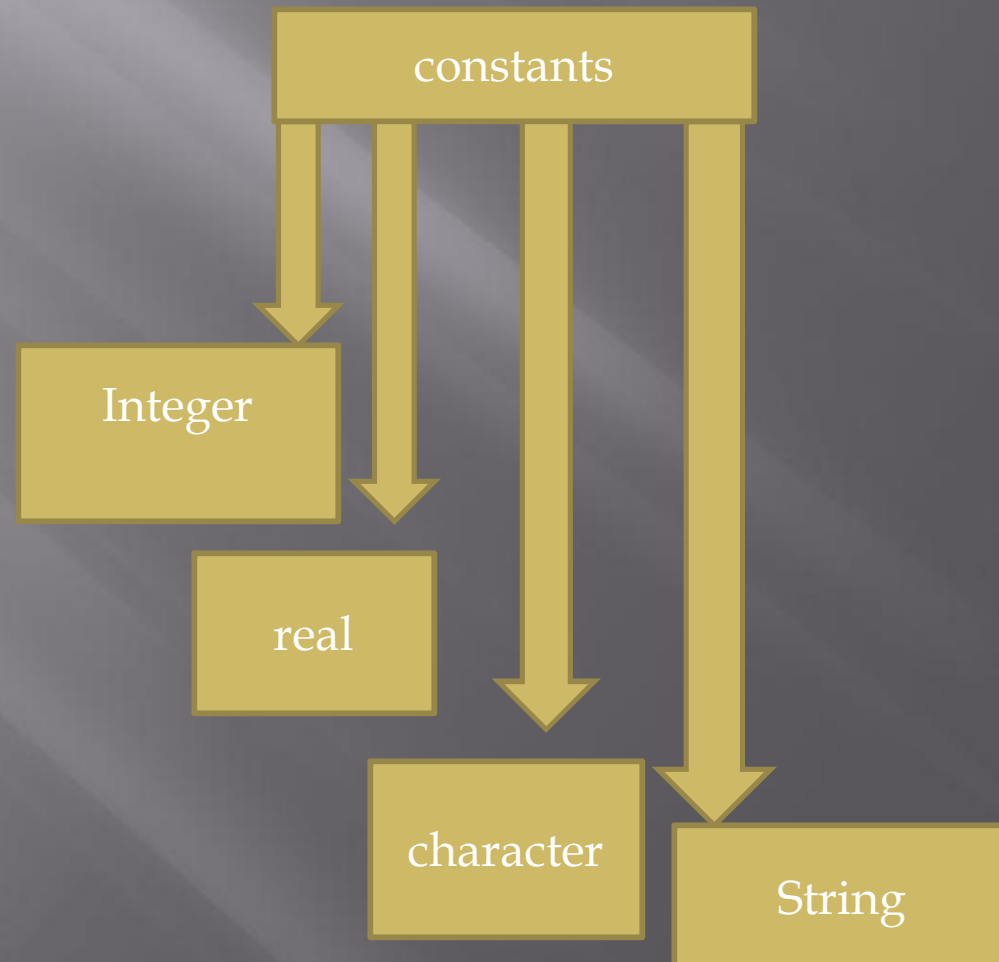


PROGRAMMING FUNDAMENTALS USING C

constants

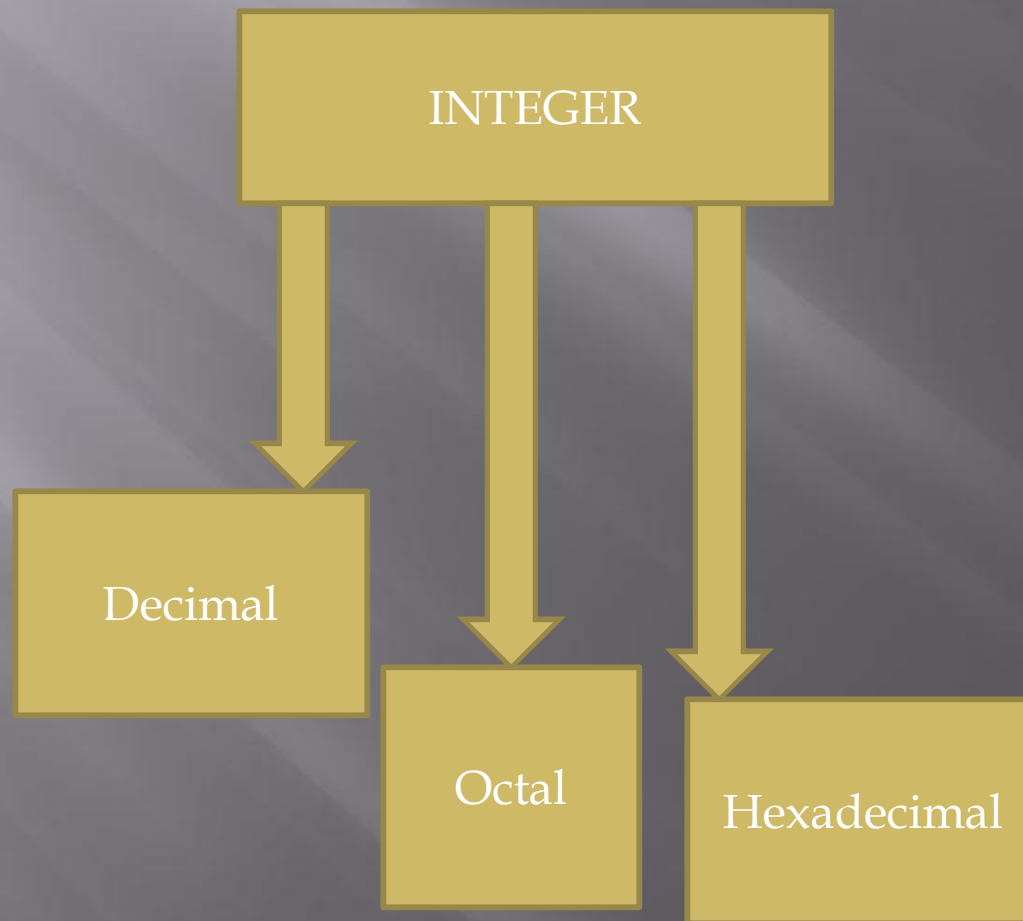
Constants

integer, real, character, string



INTEGER CONSTANTS

It consists of a sequence of digits.



DECIMAL INTEGER CONSTANTS

- ▣ Integer Constants Consisting of a set of digits, 0 through 9, preceded by an optional - or + sign.
- ▣ Examples of valid decimal integer constants
345, -3456, 0, 6789

OCTAL INTERGER CONSTANTS

- ▣ Integer constants consisting of sequence of digits from the set 0 through 7 starting with 0 is said to be octal integer constants.
- ▣
- ▣ Examples of valid octal integer constants 010, 0456, 0, 02345

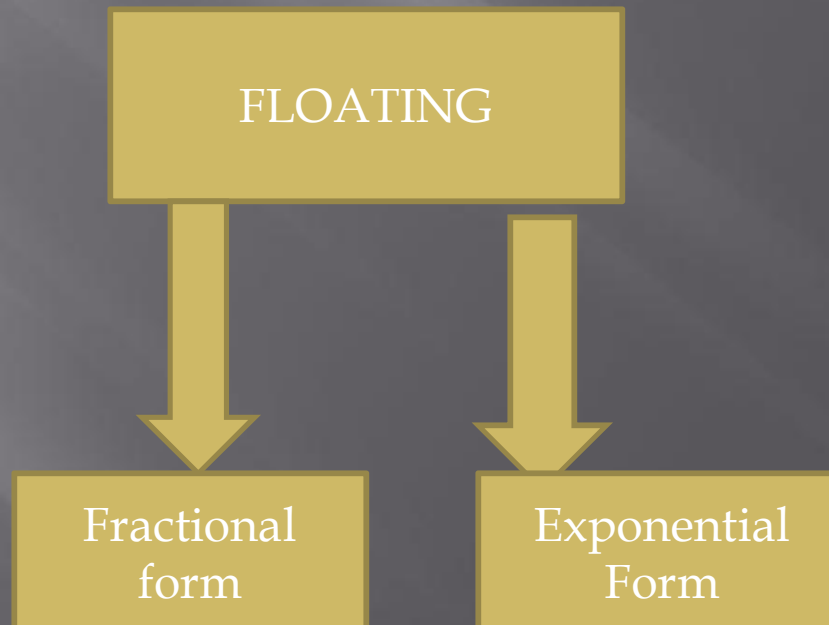
HEXADECIMAL INTEGER CONSTANTS

- ▣ Hexadecimal integer constants are integer constants having sequence of digits preceded by 0x or 0X. They may also include alphabets from A to F or a to f representing numbers 10 to 15.
- ▣ Example of valid hexadecimal integer constants 0xAB9,0X89d,0X123A,0xBCD

FLOATING POINT CONSTANTS

The constants which have decimal point are known as floating point constants

- ▣ Floating point constants can be written in two forms,



RULES FOR CONSTRUCTING FLOATING POINT CONSTANT IN FRACTIONAL FORM

1. It must have at least one digit.
2. It may be either positive or negative. Default is positive.

e.g. some valid floating points constants in fractional form are

+225.75 0.0 426.0 -335.675 -9999.99

Some invalid fractional point constants are

9,975.67 invalid character (,)

927.675 invalid character (blank)

+36-76.76 invalid character(-)

THE RULE FOR CONSTRUCTING THESE ARE :

- ▣ Mantissa and exponent part should be separated by e.
- ▣ Mantissa part may have a positive or negative sign. Default sign is always positive.
- ▣ The range of floating constants is $-3.4e + 38$ to a max of $3.4e + 38$
- ▣ E.g.
- ▣ $3.2r - 10$ $-4.75r + 30$ $+0.67e + 35$

CHARACTER CONSTANTS

- ▣ It may be an alphabet, digit or a special symbol enclosed in single quotation marks.
- ▣ Both quotation marks are pointing towards left.
- ▣ Character constant has a range from - 128 to + 127.
- ▣ Character constants have integer values that are determined by the character set of computer called ASCII i.e. American standard code of information interchange values. For ASCII table value user can refer to Appendix given at end.
- ▣ E.g
- ▣ 'A' '1' '-' 'z' '='

These non graphic characters can be represented by using escape sequence represented by a backslash (\) followed by one or more character . It takes only one byte of space as it represents a single character .

ESCAPE SEQUENCE

DESCRIPTION

▣

A

▣ Audible alert (bell)

B

▣ Backspace

F

▣ Form feed

N

▣ New line

R

▣ Carriage return

T

▣ Horizontal tab

V

▣ Vertical

\

▣ Backslash

“

▣ Double quotation mark

STRING

A string constant is a constant that consists of any number of consecutive characters i.e. a sequence of characters enclosed by a double quotation mark marks

e.g. "Neha Mittal", "Ashish", " ", "2526", the sum of numbers = " ,INDIAN", "A" are some string constants

SOME KEYS POINTS ABOUT STRING CONSTANT

1. A sequence of any numbers of characters enclosed in double quotation marks constant
2. The compiler automatically inserts a NULL character (`\0`) at the end of every string constants, which is not visible when string is displayed. So `"A"` is a string constant because it is a combination of characters `'A'` and `'\0'`, whereas `'A'` is a character constant.