C PROGRAMING

by Ketan.Kore@ Sunbeam Infotech

Escape sequences

- \' - Single quotation mark — prints '
- \" - Prints Double quotation mark — prints"
- \\ - Backslash Character — Prints\
- \a - Alert — Alerts by Generating beep
- \b - Backspace — Movers cursor one postion to the left of its current position
- \f - Form Feed — Moves cursor to the beginning of next page
- \n - New line — Moves cursor to the beginning of next line
- \r - Carraige return — Moves the cursor to the beginning of current line
- \t - Horizontal tab — Moves the cursor to next horizontal tab stop
- \v - Vertical tab — Vertical tab

Operators

- An expression in C is made up of operands , for eg a= 2 + 3 is a meaningful expression which involves 3 operands 2 , 3 , a and 2 operators i.e =,+ , Thus expression is sequence of Operators and operands
- Precedence of Operators:-Each Operator in C has a precedence associated with it , In a compound expression operator involved are of different precedence so operator with highest priority is evaluated first .
- Associativity : In compound expression when several operator are of same precedence operators are evaluated according to there associativity either left to right or right to left.

Classification of operators

- Unary Operators – Unary Operator operates on only one operand for example in the expression -3 – is a unary minus operator examples of unary operator are &,sizeof,!(logical negation),~(bitwise negation),++(increment),--(decrement) operator
- Binary Operators – Binary operator operates on 2 operands for example expression 2-3, - acts as a binary minus operator as it operates on 2 operands 2 and 3 for exampe *,/,<<(left shift),>>(Right shift),Logical And(&), Bitwise And(&)
- Ternary Operator – A ternary operator operates on three operands for example Condtional operator (?:) is the only ternary operator in C

- Classification Based on operator

  Based on there role operators are classified as
  - Arithmetic Operators
  - Relational Operators
  - Logical Operators
  - Bitwise Operators
  - Assignment Operators

Operators Precedence and Associativity

OPERATOR	TYPE	ASSOCIAVITY
( ) [ ] . ->		left-to-right
++ -- + - ! ~ (*type*) * & sizeof	Unary Operator	right-to-left
* / %	Arithmetic Operator	left-to-right
+ -	Arithmetic Operator	left-to-right
<< >>	Shift Operator	left-to-right
< <= > >=	Relational Operator	left-to-right
== !=	Relational Operator	left-to-right
&	Bitwise AND Operator	left-to-right
^	Bitwise EX-OR Operator	left-to-right
|	Bitwise OR Operator	left-to-right
&&	Logical AND Operator	left-to-right
||	Logical OR Operator	left-to-right
? :	Ternary Conditional Operator	right-to-left
= += -= *= /= %= &= ^= |= <<= >>=	Assignment Operator	right-to-left
,	Comma	left-to-right

Arithmetic operators

- Arithmetic operators work with all primitive data types i.e. int, float, char, double.
- Precedence of * & / is higher than + & -.

- % operator doesn't work with float and double type.
- % operator follows sign of numerator

- If two operands are of different types, the lower type is promoted temporarily for computation.

- char and short are promoted is promoted temporarily for computation.

- Char types are treated as integers (ASCII values) for calculation.

- If result exceed range of data type (overflow), then it rollback.

Thank you!

Ketan Kore <ketan.kore@sunbeaminfo.com>