

C Programming

Day 4

Introduction to Programming Concepts

- Variable(identifier) naming rules
 - Reserved keywords
- Operator Precedence and Associativity

Variable naming rules

- Only characters and numbers are allowed in names
- Any other characters or symbols are not allowed in names (except underscore _)
- The name of a variable cannot start with numbers.
- No spacing is allowed in a variable name.
- (Generally) lowercase names are not the same as uppercase names.
 - Ram and ram are different names in a computer language environment.

Variable naming rules

- Sum
 - pieceFlag
 - J
 - J5x7
 - Number_of_moves
 - _systemflag
- sum
 - Piece Flag
 - j
 - 2J5x7
 - int
 - _system\$flag

Reserved keywords in C

- auto
- break
- case
- char
- const
- continue
- default
- do
- double
- else
- enum
- extern
- float
- for
- goto
- if
- int
- long
- register
- return
- short
- signed
- sizeof
- static
- struct
- switch
- typedef
- union
- unsigned
- void
- volatile
- while

Which of the following are invalid variable names, and why?

- Int
- char
- _1312
- Z
- A\$
- 6_05
- Alpha_beta_routine
- _
- Yy
- floating
- Reinitialize

Which of the following are invalid variable names, and why?

- Int
- **char**
- _1312
- Z
- **A\$**
- **6_05**
- Alpha_beta_routine
- _
- Yy
- floating
- Reinitialize

Basic Data types

- char
- short int
- unsigned short int
- int
- unsigned int
- long int
- unsigned long int
- long long int
- unsigned long long int
- float
- double
- long double

Operators

- Arithmetic Operators
 - + - * / %
- Relational Operators
 - > >= < <=
- Logical Operators
 - == !=
- Increment and Decrement
 - ++ --
- Bitwise Operators
 - & Bitwise AND
 - | Bitwise OR
 - ^ Bitwise exclusive OR
 - << left shift
 - >> right shift
 - ~ ones complement

Operators

- Assignment Operators

- +=
- *=
- /=
- %=
- <<=
- >>=
- &=
- ^=
- |=
- =

Operators

- Conditional Operator

shortcut for:

```
if( a > b)
```

```
    z = a;
```

```
else
```

```
    z = b;
```

- $\text{expr1} ? \text{expr2} : \text{expr3}$

```
a > b ? a:b
```

Precedence and Associativity of Operators

- * / %
- + -
- << >>
- < <= > >=
- == !=
- & ^ | && || ?:
- = += -= *= /= %= &= ^= |= <<= >>=
- ,