## Ruby Programming Language Expressions

#### Anil Kumar S.R.

Computer Science and Engineering IIT Bombay anil@cse.iitb.ac.in

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Anil Kumar S.R.

Computer Science and Engineering IIT Bombay anil@cse.iitb.ac.ii

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Anil Kumar S.R.

omputer Science and Engineering IIT Bombay anil@cse.iitb.ac.ir

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# About Ruby Programming Language

- Ruby is the interpreted scripting language for quick and easy object-oriented programming.
- Ruby is a powerful and dynamic open source language.
- Ruby is well suited for the problem domains such as
  - Text Processing
  - CGI Programming
  - Network Programming
  - GUI Programming
  - XML Programming
  - Prototyping

Anil Kumar S.R.

omputer Science and Engineering IIT Bombay anil@cse.iitb.ac.ii

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- An expression is anything that returns a value.
- The types of the expressions are
  - Operator Expressions
  - Miscellaneous Expressions
  - Assignment Expressions
  - Conditional Expressions
  - Case Expressions

Anil Kumar S.R.

Computer Science and Engineering IIT Bombay anil@cse.iitb.ac.in

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#### **Operator Expressions**

- Ruby contains the basic set of operators like +,-,\*,/, etc.
- +, -, and the like are not operators but method calls. They can, therefore, be overloaded by new definitions.

#### New Definition for -

```
class MyString < String
  def -(other) # New method
    self[0...other.size] # self truncated to other's size
    end
end
```

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### Operator Expressions Contd....

- =, .., ..., !, not, ||, &&, and, or, :: are built-in control structures, not methods, which cannot be overridden.
- To overload or to define unary operators, you can use +@ and -@ as the method names.
- = is used to define a method to set an attribute of the object:

```
class Test
def attribute=(val)
@attribute = val
end
t = Test.new
t.attribute = 1
```

Anil Kumar S.R.

Computer Science and Engineering IIT Bombay anil@cse.iitb.ac.ir

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#### Miscellaneous Expressions

- Enclosing a string in backquotes, or use of the delimited form prefixed by %x, will (by default) be executed as a command by the underlying operating system. Eg: 'date'
- The exit status of the command is available in the global variable \$?.

Anil Kumar S.R.

Computer Science and Engineering IIT Bombay anil@cse.iitb.ac.ir

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#### Assignment Expressions

• An assignment statement sets the variable or attribute on its left side (the lvalue) to refer to the value on the right (the rvalue). It then returns that value as the result of the assignment expression.

$$a=b=1+2+3$$
  
Here  $a=6$  and  $b=6$   
 $a=(b=1+2)+3$   
Here  $a=6$  and  $b=3$ 

Anil Kumar S.R

Computer Science and Engineering IIT Bombay anil@cse.iitb.ac.ir

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# Assignment Expressions Contd....

- There are two basic forms of assignment in Ruby. They are
  - The first assigns an object reference to a variable or constant. This form of assignment is hard-wired into the language.
  - The second form of assignment involves having an object attribute or element reference on the left-hand side.
- Ruby assignments are effectively performed in parallel, so the values assigned are not affected by the assignment itself.

a, b = b, a Is equivalent to a=b and b=a

Anil Kumar S.R.

Computer Science and Engineering IIT Bombay anil@cse.iitb.ac.ir

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# Assignment Expressions Contd....

 The arrays can be collapsed and expanded by using Ruby's parallel assignment operator.

 For parallel assignments, the left-hand side of an assignment may contain a parenthesized list of terms.

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### Conditional Expressions

#### **Boolean Expressions**

• Boolean expressions have the value of true or false.

#### Defined?, And, Or, and Not

- Both "and" and "&&" evaluate to true only if both operands are true. The only difference in the two forms is precedence ("and" binds lower than "&&").
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# Conditional Expressions Contd....

#### Defined?, And, Or, and Not

- Both "or" and "||" evaluate to true if either operand is true. They evaluate their second operand only if the first is false.
- The only difference between "or" and "||" is their precedence.
- Both "and" and "or" have the same precedence, while "&&" has a higher precedence than "||".
- Both "not" and "!" return the opposite of their operand (false if the operand is true, and true if the operand is false). "not" and "!" differ only in precedence.

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## Conditional Expressions Contd....

#### If and Unless Expressions

• The format of "if" statement is

```
if condition then
if body
else
else body
end
```

• Unless is the negated form of "if" statement.

```
unless condition then
Body
else
Body
end
Kumar S.R. Computer Science and Engineering IIT Bombay anil@cse.iitb.ac.ii
```

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#### • The Ruby case statement is like a multiway if statement.

#### Example

```
returnvalue=case number
when 1 then "One"
when 2 then "Two"
when 3 then "Three"
else "Five"
end
```

Computer Science and Engineering IIT Bombay anil@cse.iitb.ac.

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- Ruby language is more powerful in handling expressions then many other programming languages.
- Ruby language supports parallel assignments.
- Ruby language supports redefining of arithmetic operators.

Anil Kumar S.R

Computer Science and Engineering IIT Bombay anil@cse.iitb.ac.ir

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- Ruby Home Page. www.ruby-lang.org
- Ruby Central. www.rubycentral.com

Anil Kumar S.R

omputer Science and Engineering IIT Bombay anil@cse.iitb.ac.ir

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