```
$ irb
irb(main):001> puts "love"
love
=> nil
irb(main):002> p "love"
"love"
=> "love"
irb(main):003> puts [1,2,3]
1
2
3
=> nil
irb(main):004> p [1,2,3]
[1, 2, 3]
=> [1, 2, 3]
irb(main):005> 5.next
=> 6
irb(main):006> 5.odd?
=> true
irb(main):007> 5.even?
=> false
irb(main):008* if 5.odd?
irb(main):009*   puts "5 is odd number"
irb(main):010> end
5 is odd number
=> nil
irb(main):011* 5.times do
irb(main):012*   puts "love"
irb(main):013> end
love
love
love
love
love
=> 5
irb(main):014* 10.times do
irb(main):015*   puts "repeat 10 time"
irb(main):016> end
repeat 10 time
repeat 10 time
repeat 10 time
repeat 10 time
repeat 10 time
repeat 10 time
repeat 10 time
repeat 10 time
repeat 10 time
repeat 10 time
=> 10
```

```
irb(main):017* 10.times do
irb(main):018*   print("*")
irb(main):019> end
**********=> 10
irb(main):020> print "love"
love=> nil
irb(main):021> puts "love"
love
=> nil
irb(main):022> puts

=> nil
irb(main):023* 10.times do
irb(main):024*   print("*")
irb(main):025*   puts
irb(main):026> end
*
*
*
*
*
*
*
*
*
*
=> 10
irb(main):027* 10.times do
irb(main):028*   print("*")
irb(main):029*   puts
irb(main):030> end
*
*
*
*
*
*
*
*
*
*
=> 10
irb(main):031* 5.times do |i|
irb(main):032*   puts i
irb(main):033> end
0
1
2
3
```

```
4
=> 5
irb(main):034* 10.times do |i|
irb(main):035*   puts i
irb(main):036> end
0
1
2
3
4
5
6
7
8
9
=> 10
irb(main):037* 10.times do |anyname|
irb(main):038*   puts anyname
irb(main):039> end
0
1
2
3
4
5
6
7
8
9
=> 10
irb(main):040> x = 5
=> 5
irb(main):041* x.times do |i|
irb(main):042*   (i+1).times do
irb(main):043*     print "*"
irb(main):044*   end
irb(main):045*   puts
irb(main):046> end
*
**
***
****
*****
=> 5
irb(main):047* 6.times do |i|
irb(main):048*   puts "*"*i
irb(main):049> end

*
```

```
**
***
****
*****
=> 6
irb(main):050> x = "love"
=> "love"
irb(main):051> x.class
=> String
irb(main):052> "love".size
=> 4
irb(main):053> "love".length
=> 4
irb(main):054* "love".each_char do |c|
irb(main):055*   puts c
irb(main):056> end
l
o
v
e
=> "love"
irb(main):057> "love".class
=> String
irb(main):058> 'love'.class
=> String
irb(main):059> puts "love \n you"
love
 you
=> nil
irb(main):060> puts 'love \n you'
love \n you
=> nil
irb(main):061> x = 10
=> 10
irb(main):062> puts "i have #{x} millon dollars"
i have 10 millon dollars
=> nil
irb(main):063> puts 'i have #{x} millon dollars'
i have #{x} millon dollars
=> nil
irb(main):064> quit

$ ruby prog.rb
100
you are too old
you are too old
******************
"c is less than 100"
******************
```

```
"c is bigger than 100"
********************
"c is bigger than 100"

$ ruby prog.rb
100
you are too old
you are too old
*****************
"c is less than 100"
*****************
"c is bigger than 100"
********************
"c is bigger than 100"
welcome, amy

$ ruby prog.rb
100
you are too old
you are too old
*****************
"c is less than 100"
*****************
"c is bigger than 100"
********************
"c is bigger than 100"
welcome, amy
welcome, yuan

$ ruby prog.rb
100
you are too old
you are too old
*****************
"c is less than 100"
*****************
"c is bigger than 100"
********************
"c is bigger than 100"
welcome, amy
welcome, yuan
welcome, Guest

$ ruby prog.rb
100
you are too old
you are too old
*****************
"c is less than 100"
```

```
*******************
"c is bigger than 100"
********************
"c is bigger than 100"
welcome, amy
welcome, yuan
welcome, Guest

$ irb
irb(main):001> [1,2,3].class
=> Array
irb(main):002> x = [1,2,3]
=> [1, 2, 3]
irb(main):003> x.class
=> Array
irb(main):004> x.size
=> 3
irb(main):005> x.sort
=> [1, 2, 3]
irb(main):006> x.pop
=> 3
irb(main):007> x
=> [1, 2]
irb(main):008> x.push(10)
=> [1, 2, 10]
irb(main):009> x.reverse
=> [10, 2, 1]
irb(main):010* x.each do |i|
irb(main):011*   puts i
irb(main):012> end
1
2
10
=> [1, 2, 10]
irb(main):013* ["bread", "eggs", "fruit"].each do |item|
irb(main):014*   puts item
irb(main):015> end
bread
eggs
fruit
=> ["bread", "eggs", "fruit"]
irb(main):016> a
irb(main):017> x
=> [1, 2, 10]
irb(main):018> x << "love"
=> [1, 2, 10, "love"]
irb(main):019> x
=> [1, 2, 10, "love"]
irb(main):020> x << [3,4]
```

```
=> [1, 2, 10, "love", [3, 4]]
irb(main):021> x[3]
=> "love"
irb(main):022> x[4][0]
=> 3
irb(main):023> (1..5).class
=> Range
irb(main):024* for x in (1..5)
irb(main):025*   puts x
irb(main):026> end
1
2
3
4
5
=> 1..5
irb(main):027* (1..5).each do |i|
irb(main):028*   puts i
irb(main):029> end
1
2
3
4
5
=> 1..5
irb(main):030>
irb(main):032> x
=> 5
irb(main):033> x = [1, 2, 10, "love", [3, 4]]
=> [1, 2, 10, "love", [3, 4]]
irb(main):034> x << (1..5)
=> [1, 2, 10, "love", [3, 4], 1..5]
irb(main):035" y = ["yuan", "wang]
irb(main):036"
^C
irb(main):035> y = ["yuan", "wang"]
=> ["yuan", "wang"]
irb(main):036> y[0]
=> "yuan"
irb(main):037> y[1]
=> "wang"
irb(main):038> z = {firstname: "yuan", lastname: "wang"}
=> {:firstname=>"yuan", :lastname=>"wang"}
irb(main):039>
irb(main):040> z[:firstname]
=> "yuan"
irb(main):041> z[:lastname]
=> "wang"
irb(main):042> z = {lastname: "wang", firstname: "yuan"}
```

```
=> {:lastname=>"wang", :firstname=>"yuan"}
irb(main):043> y
=> ["yuan", "wang"]
irb(main):044> y[5] = "love"
=> "love"
irb(main):045> y
=> ["yuan", "wang", nil, nil, nil, "love"]
irb(main):046> z
=> {:lastname=>"wang", :firstname=>"yuan"}
irb(main):047> z[:middlename] = "hero"
=> "hero"
irb(main):048> z
=>
{:lastname=>"wang",
 :firstname=>"yuan",
 :middlename=>"hero"}
irb(main):049> y
=> ["yuan", "wang", nil, nil, nil, "love"]
irb(main):050> y.slice(2)
=> nil
irb(main):051> y
=> ["yuan", "wang", nil, nil, nil, "love"]
irb(main):052> y.slice!(2)
=> nil
irb(main):053> y
=> ["yuan", "wang", nil, nil, "love"]
irb(main):054> y.slice!(2)
=> nil
irb(main):055> y.slice!(2)
=> nil
irb(main):056> y
=> ["yuan", "wang", "love"]
irb(main):057> [1,2,3] + [3,4,5]
=> [1, 2, 3, 3, 4, 5]
irb(main):058>
```