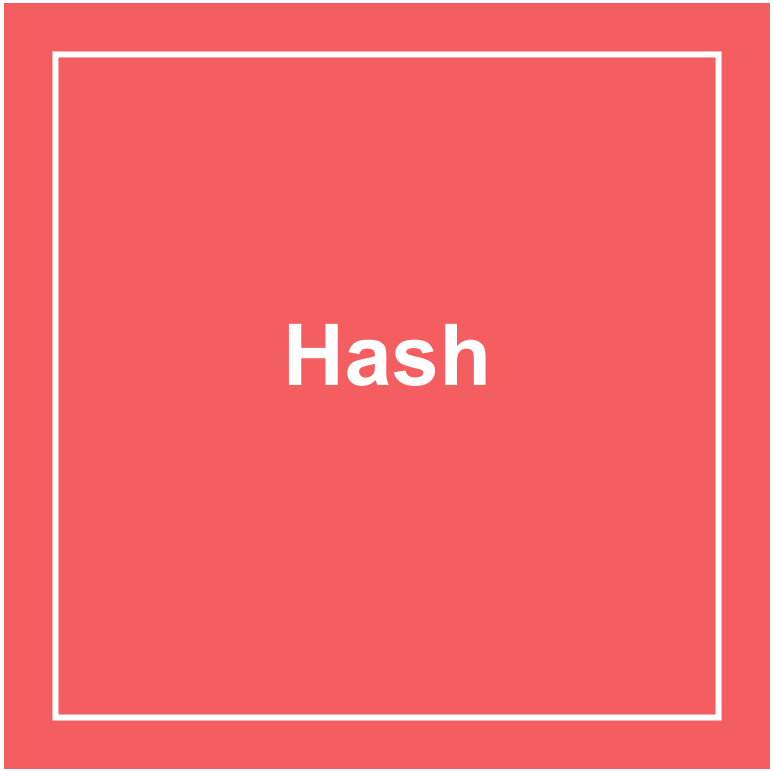

Outline

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1. Hash introduction

- A Hash is a collection of **key-value** pairs.
- It is similar to an Array, except that indexing is done via arbitrary keys of any object type, not an integer index.
- Hashes enumerate their values in the order that the corresponding keys were inserted.
- Hashes have a *default value* that is returned when accessing keys that do not exist in the hash. That value is ***nil*** by default.

2. Creating hash

- Using **new** class method
  - `h = Hash.new` `# => {}`
- Using the literal
  - `h = Hash["a": 100, "b": 200]` `# => puts h ⇒ {:a=>100, :b=>200}`
  - `h1 = {a: 200, b: 300}` `# => puts h1 ⇒ {:a=>200, :b=>300}`

3. Accessing hash

```
h = Hash["a": 100, "b": 200]

➔  h[:a]                          # => 100

➔  h[:c]                          # => nil

➔  h.keys                         # => [:a, :b]

➔  h.values                       # => [100, 200]
```

4. Converting to hash

Using **try_convert(obj)** return *hash* or *nil*

```
➔  Hash.try_convert({1=>2})          # => {1=>2}
➔  Hash.try_convert "1=>2"           # => nil
```

5. Equality hashes

Operator: **==**, **>**, **<**, **>=**, **<=** ⇒ return **true/false**

```ruby
h = Hash["a": 100, "b": 200, "c": 300]
h1 = Hash["a": 100, "b": 200, "c": 300, "d": 400]
h2 = Hash["b": 200, "c": 300, "a": 100]
h3 = Hash["a": 100, "b": 200, "c": 400]

puts "h == h1 #=> #{h == h1}"
puts "h == h2 #=> #{h == h2}"
puts "h1 == h2 #=> #{h1 == h2}"

puts "h > h1 #=> #{h > h1}"
puts "h1 > h #=> #{h1 > h}"
puts "h1 != h #=> #{h1 != h}"

puts "h > h3 #=> #{h < h3}"
puts "h <= h3 #=> #{h <= h3}"
puts "h != h3 #=> #{h != h3}"
```

```ruby
#Result
h == h1 #=> false
h == h2 #=> true
h1 == h2 #=> false
h > h1 #=> false
h1 > h #=> true
h1 != h #=> true
h > h3 #=> false
h <= h3 #=> false
h != h3 #=> true
```

6. Element assignment

```
h = {"a": 100, "b": 200}
➔  h["a"] = 10            # => h ⇒ {"a"=>10, "b"=>200}
➔  h["c"] = 300           # => h ⇒ {"a"=>10, "b"=>200, "c"=> 300}
➔  h.store "d", 400       # => h ⇒ {"a"=>10, "b"=>200, "c"=> 300, "d"=>400}
```

7. Iterating over hash

- each {| key, value | block}
  - ➔ h.each {|key, value| puts "#{key} is #{value}"}
- each_key {| key | block}
  - ➔ h.each_key {|key| puts key}
- each_value {| value | block}
  - ➔ h.each_value {|value| puts value}
- ...

8. Except

Returns a copy of self with entries removed for specified keys.

```
➔ h = { a: 1, b: 2, c: 3 }
➔ p h.except(:a) #=> {:b=>2, :c=>3}
```

9. Other hash methods

- compact (!)
- any?
- empty?
- include?
- length
- merge (!)
- has_key?
- reject (!)
- has_value?
- select (!)
- ...

References

- http://ruby-doc.org/core-3.1.0/Hash.html
- http://zetcode.com/lang/rubytutorial/hashes/
- https://github.com/awesome-academy/RubyExample_TFW

Question & Answer?