

# Hashes & Objects

# What is a hash?

A hash is a 'key', 'value' pair

- Contained in { }
- keys can be symbols, strings, ints, ..., objects.
  - hash = { first\_name: 'Dave', last\_name: 'Jungst' }
  - hash = { 1 => 'a', 2 => 'b', 3 => 'c' }
  - hash = { 'first\_name' => 'Dave', 'last\_name' => 'Jungst' }

# Creating and accessing

## Create a hash

```
person = { first_name: 'Bob', last_name: 'Bobson', age: 25 }
```

## Access an attribute of a hash

```
puts person[:first_name]    => 'Bob'  
puts person[:last_name]    => 'Bobson'  
puts person[:age]          => 25  
puts person[:hair_style]   => nil
```

# Modifying hashes

```
person = { first_name: 'Abe', last_name: 'Lincoln' }
```

So what if we want to change first name?

```
person[:first_name] = 'Abraham'  
puts person  
=> { :first_name=>'Abraham',:last_name=>'Lincoln' }
```

What if we want to add an attribute to the hash?

```
person[:awesome_beard?] = true
```

# What can be stored in a hash?

Any object!!! Why?

```
person = {  
  first_name: 'Abe',  
  last_name: 'Lincoln',  
  age: 206,  
  awesome_beard?: true,  
  quotes: [  
    'Whatever you are, be a good one',  
    "Don't believe everything you read on the internet"  
  ]  
}
```

# An array of hashes

```
people = [  
  { first_name: 'Dave', last_name: 'Jungst' },  
  { first_name: 'Bat', last_name: 'man', age: 30 },  
  { first_name: 'Jake', last_name: 'Sorce'}  
]
```

```
puts people.first
```

```
puts people.last[:last_name]
```

Store Batman's age in a variable

Add awesome\_beard to Jake

# A hash of hashes



```
languages = { language: {  
    ruby: {  
        conceived: 1993,  
        awesomeness: 9000  
    },  
    java: {  
        conceived: 1991,  
        awesomeness: false  
    }  
}
```

print the awesome level of ruby

```
puts languages[:language][:ruby][:awesomeness]
```

change the awesome level of java to -28000

```
languages[:language][:java][:awesomeness] = -28000
```



```
{ people: {  
    sports: [  
        name: 'M. Jordan',  
        name: 'M. Phelps'  
    ],  
    authors: [  
        name: 'J. R. R. Tolkien',  
        name: 'S. King'  
    ]  
}  
}
```

# Fun with hashes

```
hash = { hero: 'Batman', wealth: '$$$', suit_color: 'black' }
```

What if we just want the keys?

```
hash.keys
```

What if we want to delete a key value pair?

```
hash.delete(:suit_color)
```

Or all of them?

```
hash.clear
```

See if a key exists?

```
hash.has_key? :car
```

# Iterating hashes

```
condiments = { ketchup: 'gross', mayo: 'worse', mustard: 'awesome' }
```

```
condiments.each do |key, value|  
  puts "Condiment: #{key} is #{value}"  
end
```

it's good practice to use more descriptive names

```
condiments.each do |condiment, taste|  
  puts "Condiment: #{condiment} is #{taste}"  
end
```

# Other hash methods

Hash.new

creates a hash

Hash.new(0)

creates a hash with a default value

```
hash = Hash.new(0)
```

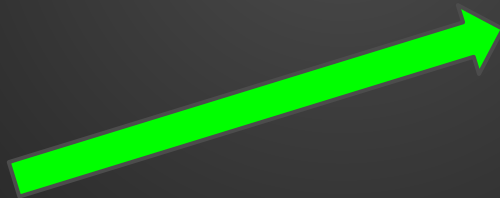
```
hash[:A] = 100
```

```
hash[:B] = 90
```

```
hash[:A] => 100
```

```
hash[:B] => 90
```

```
hash[:F] => 0
```



# Other hash methods (cont)

h1 = { a: '1', b: '2' }

h2 = { c: '3', d: '4' }

h1.merge(h2) =>

{ a: '1', b: '2', c: '3', d: '4' }

**Go through the ruby docs  
and read about more  
hash methods!**

srsly it's important