

# Variables

CS105 : Saelee

```
puts "Hello, Michael"  
puts "Pleased to meet you, Michael."  
puts "Michael, welcome to CS 105!"  
puts "The name of your instructor is Michael Saelee."  
puts "Thanks for reading, Michael!"
```

annoying

**Don't Repeat Yourself**

```
puts "Hello, Michael"  
puts "Pleased to meet you, Michael."  
puts "Michael, welcome to CS 105!"  
puts "The name of your instructor is Michael Saelee."  
puts "Thanks for reading, Michael!"
```

# Variables

```
animal      = "Poodle"  
class_id    = 105  
month       = "September"  
body_temp   = 98.6
```

```
puts animal  
puts class_id  
puts month  
puts body_temp
```

```
Poodle  
105  
September  
98.6
```

```
name = "Michael"  
puts "Hello, " + name  
puts "Pleased to meet you, " + name + "."  
puts name + ", welcome to CS 105!"  
puts "The name of your instructor is Michael Saelee."  
puts "Thanks for reading, " + name + "!"
```

```
Hello, Michael  
Pleased to meet you, Michael.  
Michael, welcome to CS 105!  
The name of your instructor is Michael Saelee.  
Thanks for reading, Michael!
```

```
name = "Jane"  
puts "Hello, " + name  
puts "Pleased to meet you, " + name + "."  
puts name + ", welcome to CS 105!"  
puts "The name of your instructor is Michael Saelee."  
puts "Thanks for reading, " + name + "!"
```

```
Hello, Jane  
Pleased to meet you, Jane.  
Jane, welcome to CS 105!  
The name of your instructor is Michael Saelee.  
Thanks for reading, Jane!
```

**references** to other things

How it works...

variable names = “identifiers”

identifier naming rules

## Valid

```
name  
curr_temp  
a_b_c  
dayOfWeek  
day_of_week  
fall07gpa  
i_001
```

## Invalid

```
105  
1_var  
my name  
grades!  
k-9  
#aaac  
"word"
```

Assignment operator:

=

General syntax:

$$*LHS* = *RHS*$$

Not “equals”!

**initialize** before use

associativity

Left associative

e.g., addition, multiplication

Right associative  
e.g., exponentiation

```
var_a = "apples"
```

```
var_b = "oranges"
```

```
var_c = var_a
```

```
var_d = var_c = "pears"
```

```
puts "var_a = " + var_a
```

```
puts "var_b = " + var_b
```

```
puts "var_c = " + var_c
```

```
puts "var_d = " + var_d
```

```
var_a = apples  
var_b = oranges  
var_c = pears  
var_d = pears
```

variable **interpolation**

Syntax: `"#{var_name}"`

```
name = "Michael"  
puts "Hello, #{name}"  
puts "Pleased to meet you, #{name}."  
puts "#{name}, welcome to CS 105!"  
puts "The name of your instructor is Michael Saelee."  
puts "Thanks for reading, #{name}!"
```

```
years = 29 # age in years ...
months = 11 # ... and months

# compute my age in days and hours
days = years * 365 + months * 30 # 365 days in a year, 30 days in a month
hours = days * 24 # 24 hours per day

# print out my age in years, days, and hours
puts "Age: #{years} years or #{days} days or #{hours} hours"

# compute my "mental" age in years, days, and hours
years = years - 10
days = years * 365 + months * 30
hours = days * 24

# print out my "mental" age
puts "Mental Age: #{years} years or #{days} days or #{hours} hours"
```