

# Variables

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# Variables

- | Variables provide a way to store & access data in your program
  - | Data within can be anything/vary (variable)
  - | Alias to data in memory
  - | Storing data to a variable is called **assignment**
- | Variables have multiple components:
  - | Name
  - | Data (or lack thereof)
  - | Type

# Single Creation

```
var example = 3
```

```
var example int = 3
```

```
var example int  
example = 3
```

# Compound Creation

```
var a, b, c = 1, 2, "sample"
```

# Block Creation

```
var (  
  a int = 1  
  b int = 2  
  c = "sample"  
)
```

# Create & Assign

```
example ::= 3
```

```
a, b ::= 1, "sample"
```

# Other

- | Variables can be reassigned & assigned to other variables:

```
a := 1
```

```
a = 2
```

```
a = 3
```

```
a := 1
```

```
b := a
```

```
var c = b
```

- | Variable names can only be used once per scope:

```
a := 1
```

```
var a = 5
```

# Defaults

- | Variables that are declared but not assigned will automatically have a default value

```
var name string
```

- | String default: ""
- | Number default: 0
- | Other default: nil

# Comma ok

- | "Comma, ok" idiom is a special case
- | Allows a variable to be reassigned in a creation statement

```
a := 1
```

```
var a = 5
```



Error!

```
a, b := 1, 2
```

```
c, b := 3, 4
```



Ok

```
x, err := //..
```

```
y, err := //..
```

```
z, err := //..
```

# Naming

- | Go variable naming convention is camelCase:

```
myLongVariableName := "hi"
```

- | Use names appropriate for the data:

```
// Good  
totalGuests := 12
```

```
// Bad  
ttl := 12
```

# Constants

- | Constants can be created using the **const** keyword
- | Useful when declaring some value that needs to be utilized throughout some or all of the program

```
const MaxSpeed = 30
```

```
const MinPurchasePrice = 7.50
```

```
const AppAuthor = "Bob"
```

# Recap

- | Variables are a way to access memory locations using an alias
- | Multiple ways to create variables:
  - | Single, compound, block, create & assign
- | Variables can be assigned to other variables
- | Variables names can only be used once per scope
- | Variables declared, but not assigned to, will have a default value
- | "Comma, ok" idiom allows you to reuse the second variable