Introduction to Scientific Computing for Biologists

ISCB20.09 - Introduction to R

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Section-3: Variables and Reserved Keywords

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- R is a dynamically programmed language which means that unlike other programming languages, we do not have to declare the data type of a variable before we can use it in our program.
- Unique name given to variable (function and objects as well) is **identifier**.

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Basically, there are 5 naming conventions

- alllowercase: e.g. `myname`
- period.separated: e.g. `new.name`
- underscore_separated: e.g. `my_name`
- lowerCamelCase: e.g. `myName`
- UpperCamelCase: e.g. `MyName`

Creating Variables

Using equal(=) operator

```
x = 10
```

Using leftward(<-) operator

```
y <- 15
```

Using rightward(->) operator

```
z <- 20
```

Reserved Keaywords in R

- Don't use any reserved keyword as variable name. List all of reserved words in R by using (?Reserved).
- The reserved words in R's parser are - if else repeat while function for in next break - TRUE FALSE NULL Inf NaN NA NA_integer_ NA_real_ NA_complex_ NA_character_

Entering Input

At the R prompt/console we type expressions.

```
num <- 10
```

The <- symbol is the **assignment** operator.
The grammar of the language determines whether an expression is complete or not.

Evaluation

When a complete expression is entered at the R console, it is evaluated and the result of evaluated expression is returned. The result may be auto-printed.

```
x <- 10
x
```

```
## [1] 10
```

```
x <- 10
print(x)
```

```
## [1] 10
```

```
x <- 10
cat(x)
```

```
## 10
```

Comments in R

The # character indicates a comment.

```
x <- 10 # This is a comment
```

Anything to the right of the # (inlcuding the # itself) is ignored.
This is only comment character in R.
R does not support multi-line comments or comment block.