Topics: Sequential execution, branching, good programming style

Example: Temperature conversion

```
% Convert temp from F to C
  tempF = 60;
  tempC = (tempF-32)*5/9
```

Sequential execution of statements

Branching

Example: Bacteria B reproduces only when the temperature is above 12°C. The rate is a function of the temperature t in °C: $(t-12)^2$. Extend the temperature conversion program to calculate the rate at which bacteria B reproduces given some temperature entered in °F.

Simple `if` Construct

`if` *condition*
    statements to execute if condition is true
`else`
    statements to execute if condition is false
`end`

The `if` Construct

`if` *condition1*
    statements to execute if condition1 is true
`elseif` *condition2*
    statements to execute if condition1 is false but condition2 is true
`else`
    statements to execute if all previous conditions are false
`end`

Rules of the `if` Construct

- Only one block of statements is executed. Execution then skips to the next executable statement following `end`
- There can be at most one `else` clause
- There can be any number of `elseif` clauses

Good programming style

- use comments
- use meaningful variable names
- use named constants
- indent sub-structures

Topics:

- Sequential execution
- Branching
- Good programming style

```
% Convert temp from F to C
  tempF = 60;
  tempC = (tempF-32)*5/9
```

Example:

Bacteria B reproduces when the temperature is above 12°C at a rate of

$$(t - 12)^2$$

where t is temperature in °C.

Calculate the rate at which bacteria B reproduces given some temperature entered in °F.

Simple `if` Construct

`if` *condition*

statements to execute
if condition is true

`else`

statements to execute
if condition is false

`end`

The `if` Construct

`if` *condition1*

statements to execute
if condition1 is true

`elseif` *condition2*

statements to execute
if condition1 is false
but condition2 is true

`else`

statements to execute if
all previous conditions are false

`end`

Rules of the `if` Construct

- Only one block executed.
  Then skip to the next statement after **`end`**
- At most one **`else`** clause
- Any number of **`elseif`** clauses

Good programming style

- use comments
- use meaningful variable names
- use named constants
- indent sub-structures