Numerical methods in Biomedical Engineering

Tutorial I

August 14, 2019

1 Conditional Statements

1.1 *if...else*

Initialise the Input;

if *condition* **then**
| Run these lines if the above *condition* is true.

else
| Run these lines if the above *condition* is false.

end

Algorithm 1: If/else statement

1.2 *Nested if...else*

Initialise the Input.;

if *condition I* **then**

Run these lines if *condition I* is true.

else if *condition II* **then**

Run these lines if *condition I* is false and *condition II* is true.

else

Run these lines if *condition I* is false and *condition II* is, also, false.

end if

Algorithm 2: Nested if/else

1.3 *Switch Case*

Initialise the Input $\boldsymbol{x}$ as option;

switch (x)

case 1**:**

Run these lines if the value of variable x is equal to 1.

case 2**:**

Run these lines if the value of variable x is equal to 2.

case 3**:**

Run these lines if the value of variable x is equal to 3.

default:

Run these lines if the value of variable x does not equal any of the above cases.

end switch

Algorithm 3: Switch Case

2 Loop Statements

2.1 *For Loop*

Initialise all variables.
for *start value* to *end value* **do**
  Run these lines if the value of variable i
  is between the *start value* and the *start value* .
end for

Algorithm 4: For loop

2.2 *While loop*

while *Condition* **do**
  Keep running these lines
  until the above *Condition* is true.
end while

Algorithm 5: While loop