IB Pseudocode Syntax

Basic instructions

Name	Syntax	Description	Examples
Assign	*variable* = *value*	Assigns a value to the variable	a = 1
Input	input *variable*	Inputs the variable	input a
Output	output *variable/expression*	Outputs a value of the variable or expression	output a output "hello" output 2 + 2
Delete	delete *variable*	Deletes the variable	delete a

Conditions

Name	Syntax	Description	Examples
If	if *condition*	Indicates the start of a condition block and states the first condition	if a = 1
Else if	else if *condition*	States an additional condition	else if a = 2
Else	else	Indicates the start of the part of a condition block which will be executed if all conditions above are False	else
End if	end if	Indicates the end of a condition block	end if

Loops

Name	Syntax	Description	Examples
While loop	loop while *condition*	Executes a loop block while the condition is true	loop while a < 5
Until loop	loop until *condition*	Executes a loop block until the condition is true	loop until a == 5
For loop	loop *variable* from *start value* to *end value*	Executes a loop block for every value of the variable between start value and end value	loop a from 1 to 5
End loop	end loop	Indicates the end of a loop block	end loop

Functions

Name	Syntax	Description	Examples
Function	function *name(arg1, …)*	Indicates the start of a function block with name and arguments	function f(a, b)
Return	return *variable/expression*	Returns value or expression from function	return a return "hello" return 2 + 2
End function	end function	Indicates the end of a function block	end function
Run function	*name(arg1, …)*	Runs a function block with given name and arguments	f(1, 2)

Procedures

Name	Syntax	Description	Examples
Procedure	procedure *name(arg1, …)*	Indicates the start of a procedure block with name and arguments	procedure p(a, b)
End procedure	end procedure	Indicates the end of a procedure block	end procedure
Run procedure	*name(arg1, …)*	Runs a procedure block with given name and arguments	p(1, 2)

Arrays

Name	Syntax	Description	Examples
Create array	array *name*	Creates an empty array with given name	array a
Get item	*name*[*index*]	Returns an item with given index from an array with given name	a[0]
Set item	*name*[*index*] = *value*	Assigns a value to given index from an array with given name	a[0] = 1
Assign array	*name* = [*val1, val2, …*]	Assigns an array with given values to variable with given name	a = [1, 2, 3]

Dictionaries

Name	Syntax	Description	Examples
Create dictionary	dictionary *name*	Creates an empty dictionary with given name	dictionary a
Get item	*name*[*key*]	Returns an item with given key from a dictionary with given name	a["a"]
Set item	*name*[*key*] = *value*	Assigns a value to given key from a dictionary with given name	a["a"] = 1
Assign dictionary	*name* = {*key1: val1, key2: val2, …*}	Assigns a dictionary with given values to variable with given name	a = {"a": 1, "b": 2}

Collections

Name	Syntax	Description	Examples
Create collection	collection *name*	Creates an empty collection with given name	collection a
Add item	*name*.addItem(*value*)	Adds a value to the end of the collection	a.addItem(1)
Get next	*name*.getNext()	Returns next value from the collection	a.getNext()
Reset next	*name*.resetNext()	Resets next element of the collection	a.resetNext()
Has next	*name*.hasNext()	Checks does the collection have next element	a.hasNext()
Is empty	*name*.isEmpty()	Check does the collection contains elements	a.isEmpty()

Stackss

Name	Syntax	Description	Examples
Create stack	stack *name*	Creates an empty stack with given name	stack a
Push	*name*.push(*value*)	Adds a value to the stack	a.push(1)
Pop	*name*.pop()	Gets a value from the stack	a.pop()
Is empty	*name*.isEmpty()	Check does the stack contains elements	a.isEmpty()

Queues

Name	Syntax	Description	Examples
Create queue	queue *name*	Creates an empty queue with given name	queue a
Enqueue	*name*.enqueue(*value*)	Adds a value to the queue	a.enqueue(1)
Dequeue	*name*.dequeue()	Gets a value from the queue	a.dequeue()
Is empty	*name*.isEmpty()	Check does the queue contains elements	a.isEmpty()