Pseudocode

≡ Chapter No.	19
Status	Completed

▼ In computing, solutions to problems are often written in pseudocode

- Pseudocode resembles a programming language but does not follow the syntax of any one particular language
- This is so that users of different coding languages can all read it

▼ Recommended Pseudocode Syntax

▼ Common Constructs

Constructs

Aa -	≡ Pseudocode	≡ Python
Declaration	DECLARE A : INTEGER	N/A
Assignment	A ← 34	A = 34
Changing a Value	B ← B + 1	B = B + 1
If/Then/Else	IF A > B THEN ... ELSE .... ENDIF	if A > B: ... else: ...
While Loop	REPEAT ... UNTIL A > B OR WHILE A <= B ... ENDWHILE	while A <= B: ...
For Loop	FOR N ← 0 TO 10 ... ENDFOR	for N in range(11): ...
Input	INPUT "Prompt:" A	a = input("Prompt:")

Output	OUTPUT "Message" B	print("Message")
		print(B)

Comment	// Comment	# Comment

▼ Common Operators & Mathematical Functions

Operators & Mathematical Functions

Aa -	≡ Pseudocode	≡ Python
equals to	=	=
less than	<	<
greater than	>	>
less than or equals to	<=	<=
greater than or equals to	>=	>=
not equals to	<>	!=
addition	+	+
subtraction	-	-
multiplication	*	*
division	/	/
exponentiation	^	**
integer division (quotient)	DIV	//
modulus (remainder)	MOD	%

▼ Common String Functions

String Functions

Aa -	≡ Pseudocode	≡ Python
Returns the start position of str2 in str1, or -1 of str2 is not in str1	LOCATE(str1, str2)	str1.find(str2)
Returns the first n characters of str	LEFT(str, n)	str[0:n]
Returns a string containing the next n characters of str, starting with the m th characer	MID(str, m, n)	str[m:m+n]
Returns the last n characters of str	RIGHT(str, n)	str[-n:]
Returns the number of characters in str	LENGTH(str)	len(str)
Concatenates str1 and str2	str1 & str2 OR CONCAT(str1, str2)	str1 + str2

▼ Procedures & Functions

▼ A procedure is a name for a group of steps that are carried out in a fixed order

    - In Python, procedures and functions are not really distinguished
    - A procedure can be thought of as a function that does not return anything
  - When we write a function in pseudocode, we need to specify the input (if any), as well as the output

▼ Passing Values into Procedures/Functions

  - When a procedure or function requires values from the main program, these values are supplied as arguments/parameters

  ▼ When we define a function, we put these parameters into a parameter list

    - The parameter list specifies the parameters required by the function, as well as their data types

  - When parameters are supplied to the procedure or function, they are said to be passed to the procedure or function

  ▼ A parameter may be passed by value

    - When the parameter is passed into the procedure or function, a copy of the value of the variable is passed into the procedure or function
    - The value of the variable in the main program is not affected by what happens inside the function

  ▼ A parameter may be passed by reference

    - When the parameter is passed into the procedure or function, a pointer to the memory location of the variable is passed into the function or procedure
    - Changes made to the values in the variable will be effective outside of the procedure and in the main program