

CB U3.3 & U3.4: Mathematical Expressions and Strings

Algorithms

An algorithm is a set of instructions that accomplish a task. Algorithms can be expressed multimodally. Programming languages are languages that construct algorithms through sequencing, selection and iteration.

Sequencing, Selection, Iteration

Sequencing: executing statements in order, logically Selection: control flow based on making decisions, executing different “arms” conditionally Iteration: repeatedly conditionally continuing the sequencing process

Operations

A code statement is part of a program that expresses an action to be carried out. Expressions are evaluated and treated like a single value. Evaluations and sequential statements follow a set order of operations to be executed.

Instructions are executed line by line. Variables store the last assigned number.

Mathematical Expressions

Basic math operators are implemented in common programming languages.

Strings

Strings are an ordered sequence of characters. String procedures:

```
len(str)
concat(str1,str2)
substring(str1,start,length)
```