# Flowgorithm

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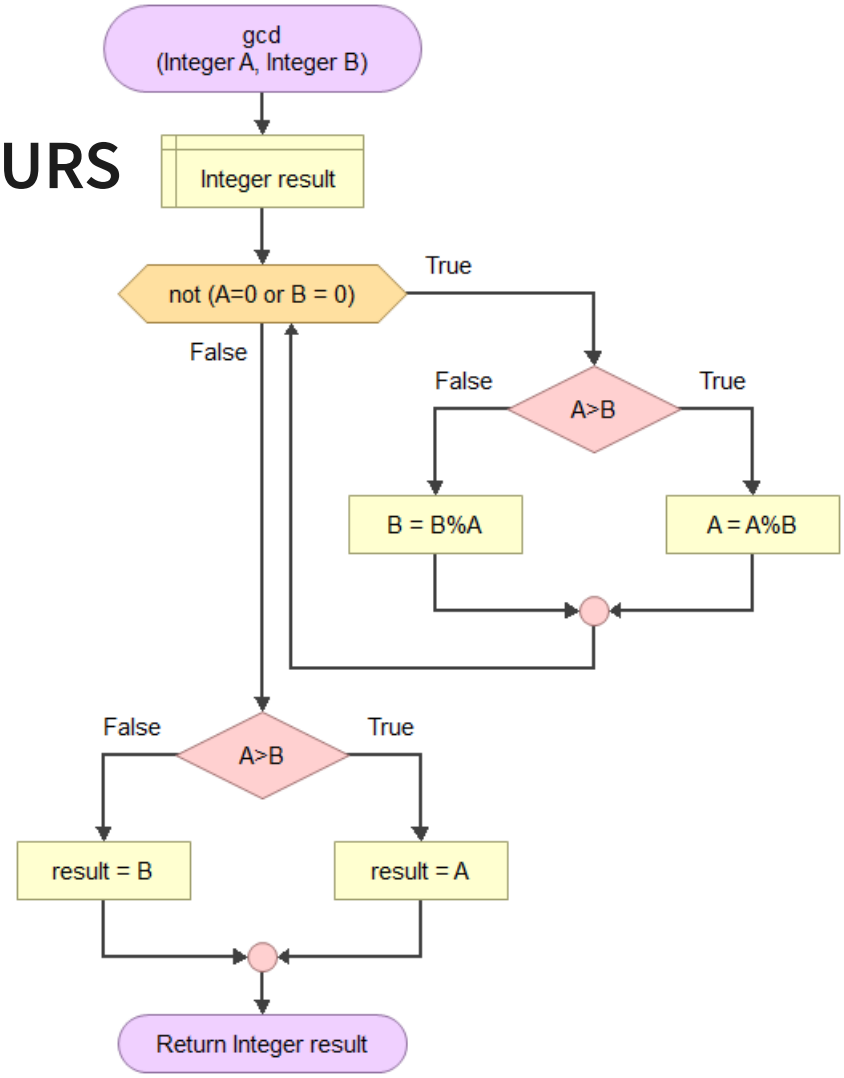
# Flowgorithm = Flow-chart + Algorithm

Executable flow-charts

Personalized flow-chart STYLE and COLOURS

Generate your code in many languages

MISSING: load a program
and generate its flow-chart



# Code generation by templates

Code generation from flow-charts to many programming languages (even personalized)


C#


C++


Fortran 2003


Java


JavaScript


Lua


MATLAB


Nim


Pascal


Perl


PHP


Powershell


Python


QBasic


Ruby


Scala


Smalltalk


Swift


TypeScript


VBA


Visual Basic .NET


Gaddis Pseudocode


IBO Pseudocode


Auto Pseudocode


Open...

# Simple Data types (and arrays)

T = Integer, Float, String, Boolean

Array of <T>

NO bigintegers

NO lists or dynamic arrays

NO heterogeneous arrays

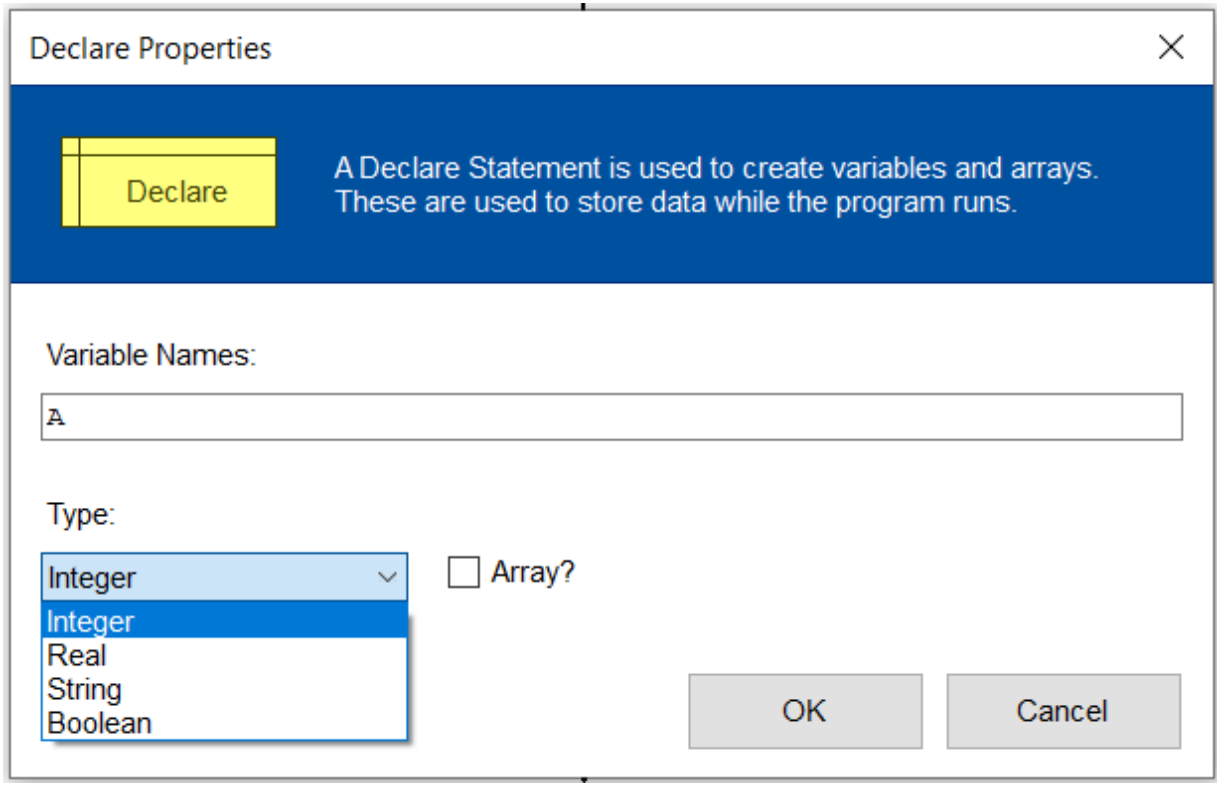
NO multidim. arrays

NO objects

NO coroutines

NO function objects

NO files



# Statements

DECLARE variable
ASSIGN variable

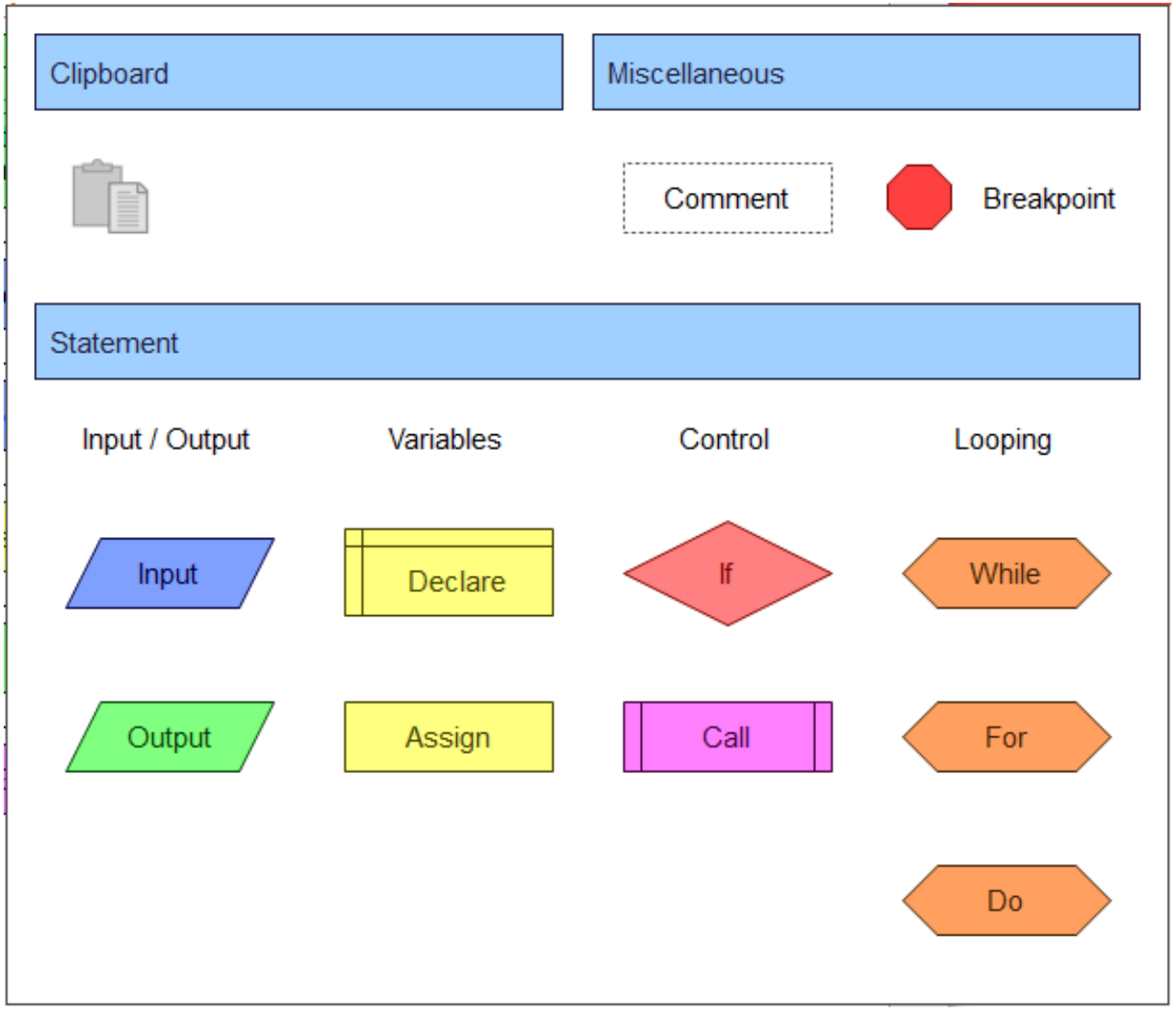
INPUT
OUTPUT

IF

CALL procedure/function

WHILE-do
counted FOR
DO-while
(NO foreach)

COMMENTS



# Expressions and operators

Function calls

| | |
|---|---|
| Logic: | and, or, not, comparison |
| Math: | +, -, *, /, %, ^, sign<br>trigonometry, log/pow, random, round |
| String: | concat, len, char(S, i) |
| Arrays: | size |
| Conversions: | char, ascii, int, float, str, round |

Precedences as usual

# Control flow

| | | |
|---|---|---|
| Functions? | YES | |
| args by reference? | NO | (except for arrays) |
| multiple return values? | NO | (single simple types only) |

ONE entry and ONE exit per function/diagram

| | |
|---|---|
| NO early return | (use an IF to skip the rest of the code) |
| NO break | (use an IF to skip the rest of the code) |

| | |
|---|---|
| Multiple assignments? | NO |
| Concurrency/multi threading? | NO |
| Events? | NO |
| Recursion? | YES |
| Exceptions? | NO |

# Programming style

| | | |
|---|---|---|
| PROCEDURAL/SEQUENTIAL? | YES | |
| FUNCTIONAL? | NO | no functions as arguments |
| STRUCTURED? | YES | |
| DECLARATIVE? | NO | |
| EVENT-BASED? | NO | |
| CONCURRENT? | NO | |
| MODULARIZATION? | YES | by function/procedure |
| ANALYSIS | | |
| TOP-DOWN? | YES | |
| BOTTOM-UP? | NO | |
| OBJECT-ORIENTED? | NO | no objects |

# Debug support

Step-by-step execution (both flow-chart AND generated code)

NOTE: the generated code is NOT executed

View Variables content (both simple values and arrays)

Breakpoints

Assertions? by hand

Exceptions? NO

IDE support

Refactoring PARTIAL (cut/paste into new functions)

# Literate programming / Documentation?

Program properties:

- Title, Author, Description
- BUT: they are NOT present in the generated code!!!

Comments in the flow-chart

NO free text

# Demo

DEMO