

# README

## Features implemented:

1. Input- Output (print-scan)
2. Loops: for, while, do-while
3. Conditionals: if, if-else, switch case
4. Functions
5. Arrays
6. Break – Continue
7. Ternary Operations with the following syntax:

IDENTIFIER '=' Expression1 '?' Expression2 ':' Expression3

where Expression2 and Expression3 can only be integer constants or identifiers.

- There is strict type checking. Hence, you need to hint upon the type when declaring a variable or array or the parameters of a function.
- Error productions: Errors are produced when
  1. An already existing variable is re-defined.
  2. A different type variable is assigned to a variable.
  3. An undeclared variable/array/function is used.
  4. If you try to access a[i] where a is not an array or if you try to access a[1.1] type of values or if array bound is exceeded.
  5. Array elements are of different types.

## Features not implemented

- Data types:
  - Only one number type: Integers
  - Objects
  - No NaN, INFINITY and NULL
- Language Constructs
  - try, catch, finally and throw
  - with
- OOP features of ES5.1
  - new
  - this
  - instanceof
  - delete
- Bitwise Operations and operators

- & | ^ ~ >> << >>>
- &= |= ^= >>= <<= >>>=

- Unused keywords
  - class
  - const
  - extends
  - field
  - final
  - import
  - package
  - private
  - protected
  - public
  - super
- Library routines are not implemented.
  - OOP features are not implemented because it is a library feature.
- Type coercion
  - '+' does not change type to string
  - '!' does not change type to string, it can be only used on boolean operators
  - expression are not automatically converted to boolean in case of logical expressions
- Number of parameters are not checked during function calls.

To run the file, execute the following commands (within "asgn2" folder):

make

bin/codegen sample/sam1.js ( execute the first test-case file sam1.js)

To compile the produced file using gnu assembler, execute the following commands:

as --32 ans.s -o ans.o

ld -m elf\_i386 ans.o -o ans

./ans