

3 "Bench" Programming Language

Friday, August 30, 2024 12:00 PM

- Basic Components
- literals
 - Expressions
 - Assignment
 - Conditionals
 - Repetitions.
 - "functions"

THE PUCK 24.3 PROGRAMMING LANGUAGE

```
% This is a comment
DEF main ( )
  PRINT ( "Hello" , "World" ) .
  x :- 2 + 2 .
  y :- 3 * 12 / 7.5 .
  p :- ( x > 0 ) AND ~ ( y <= 30 ) .
  PRINT ( x * 100 ) .
END.
```

- keywords are UPPERCASE
- :- is assignment.
- notice space separation.
- Literals, numbers, strings
- operator
- ~ negation.
- full stop ends a statement.

```
% FizzBuzz
DEF FizzBuzz ( n )
  IF n MOD 3 = 0 THEN
    IF n MOD 5 # 0 THEN
      PRINT ( "Fizz" ) .
    ELSE
      PRINT ( "FizzBuzz" ) .
    FI
  ELSE
    IF n MOD 5 = 0 THEN
      PRINT ( "Buzz" ) .
    FI
  FI
END.
```

- • Ends a sentence
- = equals
- # not equals
- MOD modulus
- DIV Integer Division

```
% Functions and Loops
DEF fibo ( n )
  x :- 1 . y :- 2 . c :- 3 .
  LOOP c < n DO
    x :- x + y .
    y :- x - y .
  END.
```

LOOP
POOL
RETURN ()

```

LOOP c \= 11 DO
  x :- x + y .
  y :- x - y .
  c :- c + 1 .
POOL
RETURN ( x )
END.

```

```

RETURN ( )

```

```

% Greatest Common Denominator
DEF gcd ( a , b )

```

```

  LOOP a > b DO
    a :- a MOD b .
  ELIF b > a DO
    b :- b MOD a .
  POOL
  % post : a = b
  RETURN ( a )
END.

```

LOOP has an ELIF

```

LOOP cond1 DO
  ≡
ELIF cond2 DO
  ≡
ELIF cond3 DO
  ≡
ELIF cond4 DO
  ≡
POOL

```

- conditions are evaluated the first one that evaluates to true, its corresponding block is executed
 - the loop exits when all conditions are false.

% Newlines are just Whitespace

```

DEF foo ( s )
  res :- True .
  IF ( s = "A" ) OR
    ( s = "B" ) OR ( s = "C" )
  THEN
    PRINT (
      "Hello" & "World"
    )
  FI END.

```

String concatenation

- EOF -