PixMix

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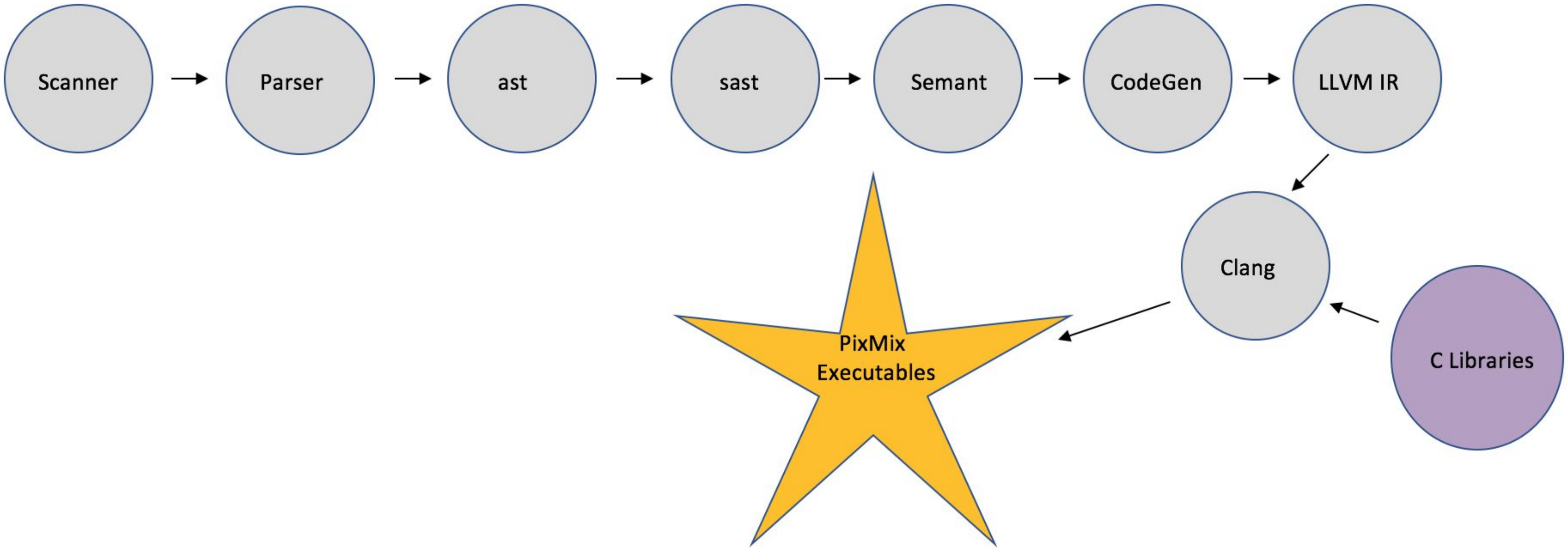
“You guys are ahead of all my other groups. Wait, don’t get me wrong, you’re actually pretty far behind.”

- Heather Preslier

Overview

- Imperative
  - Expression vs statement execution
- Strongly typed
  - lval and rval types must match
- Statically typed
  - Variable types must be known at compile time

Architecture



Language Basics

Comments

```
#: I am a multi
line comment! :#

# I’m a single line comment!
```

Operators

Arithmetic operators:

```
( )  *  /  %  +  -
```

Comparison operators:

```
==  is  <  >  <=  >=  !=  isnt
```

Logical operators:

```
and  &&  or  ||
```

```
Unary operators:
not  !  -
```

Types

Primitive:

```
num - defaults to 0.0
string - defaults to null
bool - defaults to false
```

Non-primitive:

```
Array
Object
```

Control Flow

If - Else

```
bool t = true;

if (not t) {
    print(“false”);
}
else {
    print(“true”);
}
```

For

```
num i;

for (i = 0; i not 5; i = i + 1)
{
    print(i);
}
```

While

```
num x;

while (x isnt 5) {
    x = x + 1;
}
```

Syntax

Functions

```
num gcd (num x, num y)
{
    if(x == 0) {
        return y;
    }
    while (y != 0) {
        if ( x > y) {
            x = x - y;
        }
        else {
            y = y - x;
        }
    }
    return x;
}

print("GCD Result: ", gcd(240, 150));
```

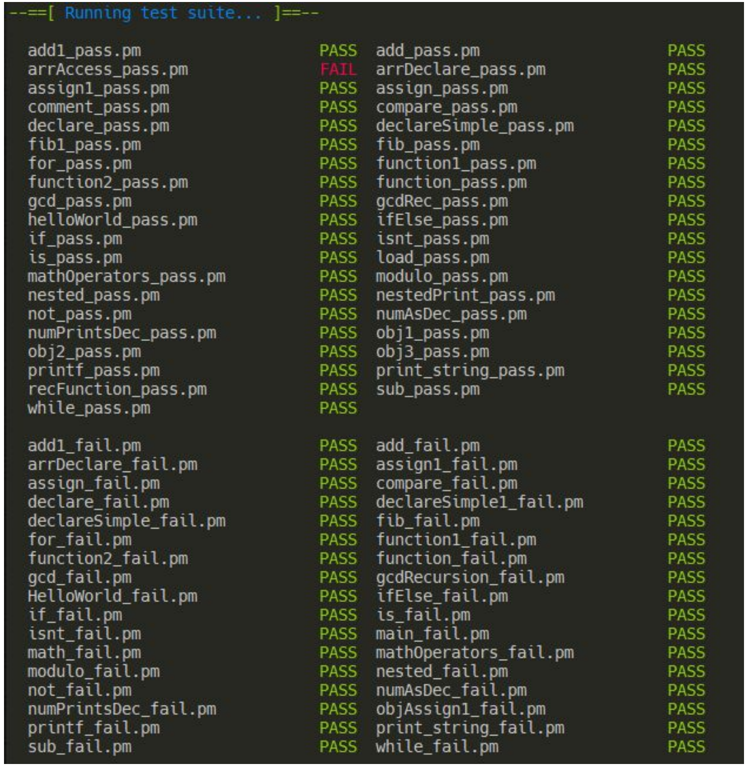
Objects

```
Object math = {
        num someVal = 54;

        num double(num val) {
                return val * val;
        }
};

math.double(3); // returns 9
```

Arrays

```
Array num a = [5];
```

Tests



```
--==[ Running test suite... ]==--

  add1_pass.pm                   PASS  add_pass.pm                    PASS
  arrAccess_pass.pm              FAIL  arrDeclare_pass.pm             PASS
  assign1_pass.pm                PASS  assign_pass.pm                 PASS
  comment_pass.pm                PASS  compare_pass.pm                PASS
  declare_pass.pm                PASS  declareSimple_pass.pm          PASS
  fib1_pass.pm                   PASS  fib_pass.pm                    PASS
  for_pass.pm                    PASS  function1_pass.pm              PASS
  function2_pass.pm              PASS  function_pass.pm               PASS
  gcd_pass.pm                    PASS  gcdRec_pass.pm                 PASS
  helloWorld_pass.pm             PASS  ifElse_pass.pm                 PASS
  if_pass.pm                     PASS  isnt_pass.pm                   PASS
  is_pass.pm                     PASS  load_pass.pm                   PASS
  mathOperators_pass.pm          PASS  modulo_pass.pm                 PASS
  nested_pass.pm                 PASS  nestedPrint_pass.pm            PASS
  not_pass.pm                    PASS  numAsDec_pass.pm               PASS
  numPrintsDec_pass.pm           PASS  obj1_pass.pm                   PASS
  obj2_pass.pm                   PASS  obj3_pass.pm                   PASS
  printf_pass.pm                 PASS  print_string_pass.pm           PASS
  recFunction_pass.pm            PASS  sub_pass.pm                    PASS
  while_pass.pm                  PASS

  add1_fail.pm                   PASS  add_fail.pm                    PASS
  arrDeclare_fail.pm             PASS  assign1_fail.pm                PASS
  assign_fail.pm                 PASS  compare_fail.pm                PASS
  declare_fail.pm                PASS  declareSimple1_fail.pm         PASS
  declareSimple_fail.pm          PASS  fib_fail.pm                    PASS
  for_fail.pm                    PASS  function1_fail.pm              PASS
  function2_fail.pm              PASS  function_fail.pm               PASS
  gcd_fail.pm                    PASS  gcdRecursion_fail.pm           PASS
  HelloWorld_fail.pm             PASS  ifElse_fail.pm                 PASS
  if_fail.pm                     PASS  is_fail.pm                     PASS
  isnt_fail.pm                   PASS  main_fail.pm                   PASS
  math_fail.pm                   PASS  mathOperators_fail.pm          PASS
  modulo_fail.pm                 PASS  nested_fail.pm                 PASS
  not_fail.pm                    PASS  numAsDec_fail.pm               PASS
  numPrintsDec_fail.pm           PASS  objAssign1_fail.pm             PASS
  printf_fail.pm                 PASS  print_string_fail.pm           PASS
  sub_fail.pm                    PASS  while_fail.pm                  PASS
```

The Process

Initial goals

Actual results

Problems

Demo

GCD

Fibonacci

Objects