ChartLan

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Overview

- Based on C-Like language
- More efficient and convenience for user to handle array type data.
- Specified in Array Creating , information storing, retrieving, data appending and computing.
- Smart basic operations : inserting, concatenating, indexing and print Array
- Smart mathematic operations between array and integer: “.+”,”.*”,”.-”,”./”

Schedule

Sept: Design & Proposal

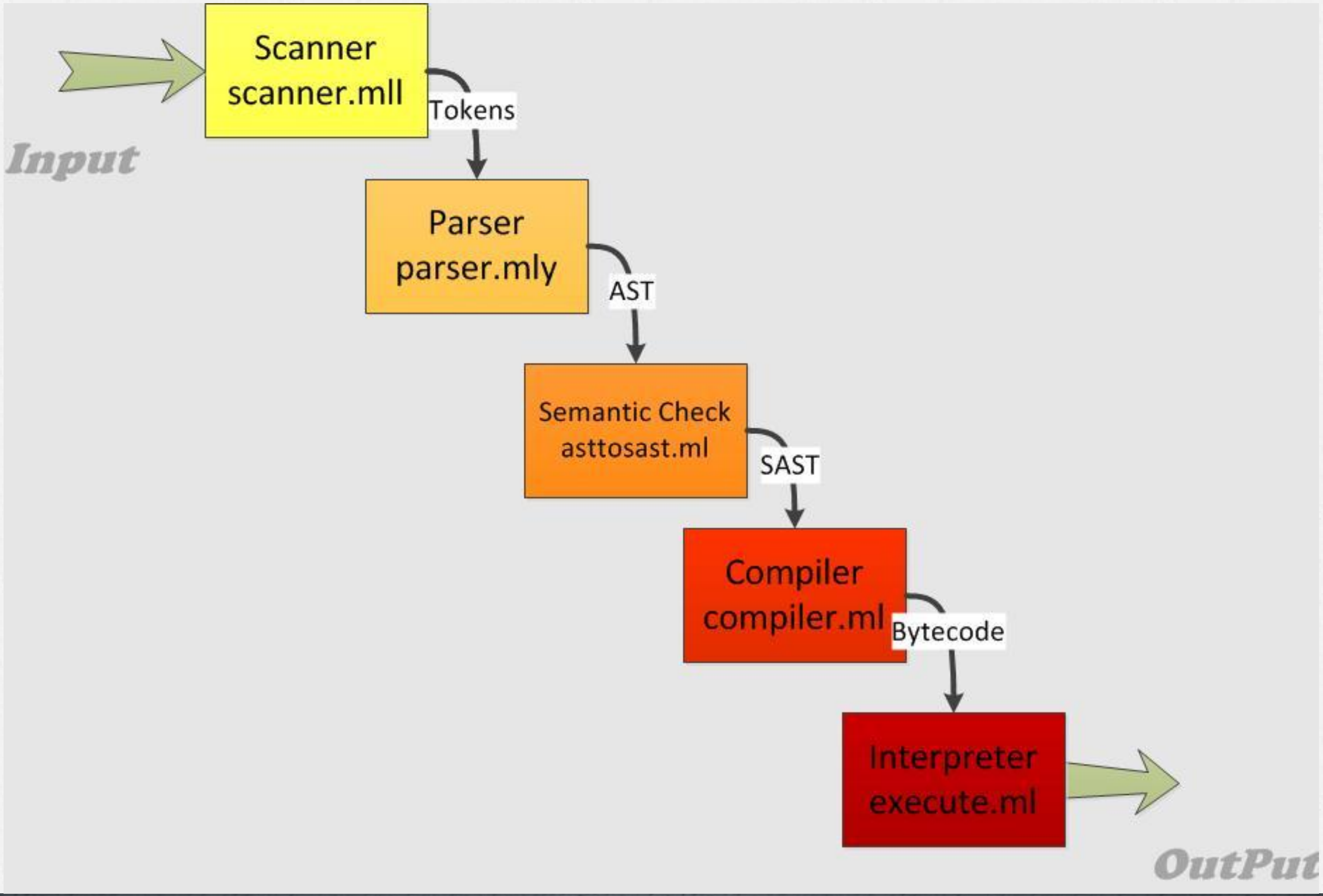
Oct: Modification & LRM

Nov: Scanner, Parser, AST

Dec: SAST, Compiler, Bytecode, Test & Final Demo*

*: Finally, we are proceeding the last step and we endeavor to do our best.

Language Structure



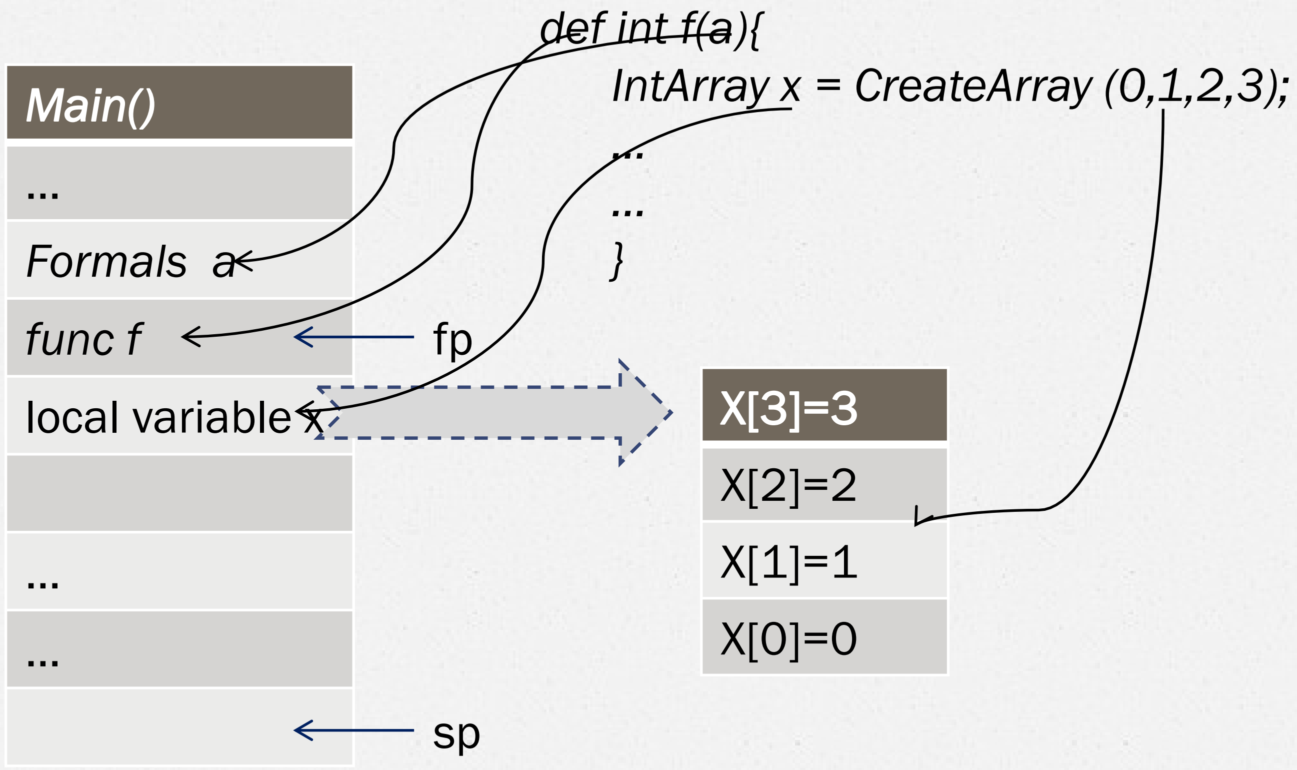
Details

- Static Scoped / No nested function declaration
- Stack-based Bytecode
- C-style like language
- No strongly typed
- Staticly Typed (Compiler can determine type)
- Global/Local Variable Declaration

Details(cond.)

- Data Type: int, string, array.
- Int 0 and 1: Act as Boolean false and true.
- Array: List of integers
- String (Array of chars)
- Function Declaration: def <type> <fname> <argu>
- Execution Control: if…else…, while
- Array Operations: Indexing, Printarray, Append, Insert.

Data Structure



```
def int f(a){
        IntArray x = CreateArray (0,1,2,3);
        …
        …
}
```

Sample Code

- intarray[4] x;
  def int main(){ x=%(3,4,5)%+12; printarray(x); return 2;} () #~insert an element into the back of the array~#
- **Output: 3,4,5,12**

- def int main(){ intarray[3] x; int a; x=%(1,2,3)%; a = x[2]; print(a); return 2;} #~indexing~#
- **Output: 3**

Sample Code

- def int main() { intarray[3] x; intarray[3] y; x=%(1,2,3)%; y=x.*2; printarray(y); return 1;} #~dot-operation of array~#
- **Output: 2,4,6**

- def int main(){ intarray[3] x; intarray[3] y;intar ray[6] z;x=%(1,2,3)%;y=%(4,5,6)% ;z=x*y; pri ntarray(z); return 2;} #~This program test the Array append by *~ #
- **Output: 1,2,3,4,5,6**

Lesson Learned

- Ocaml is hard but powerful.
- Everything should be scheduled before executing.
- Acting as a team is the most important element
- Thanks for the whole semester's class.