

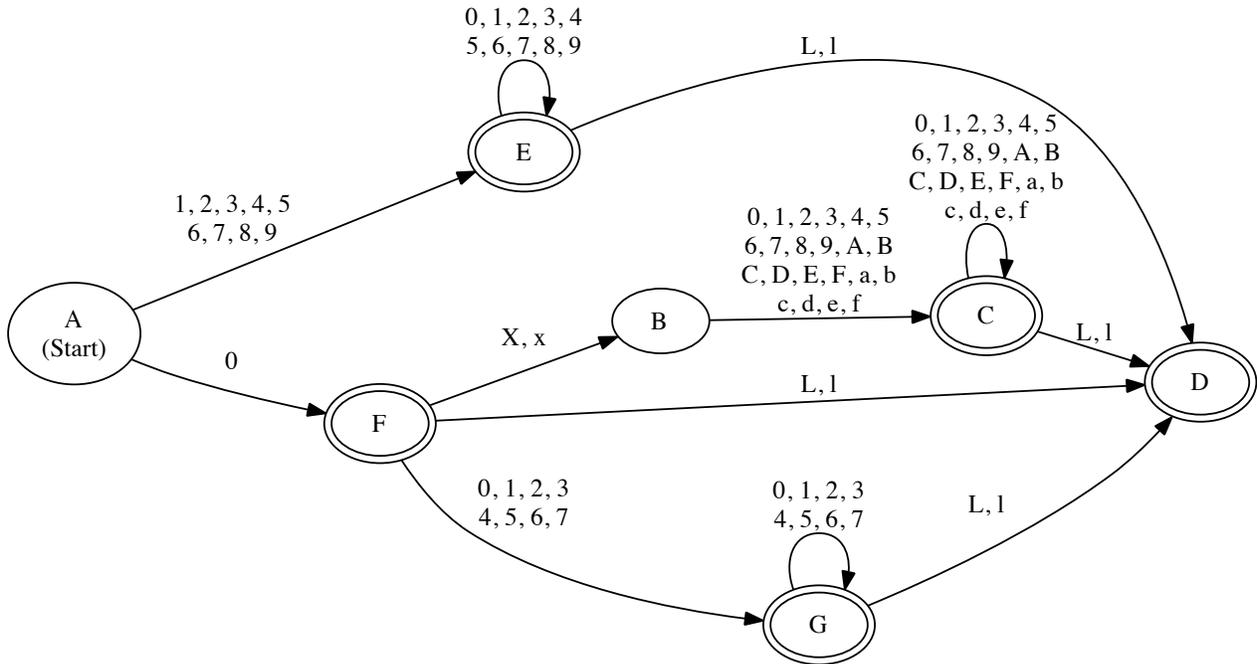
Name:

PID:

Quiz 1

What kind of Java tokens does the following DFA recognize?

[1 point]

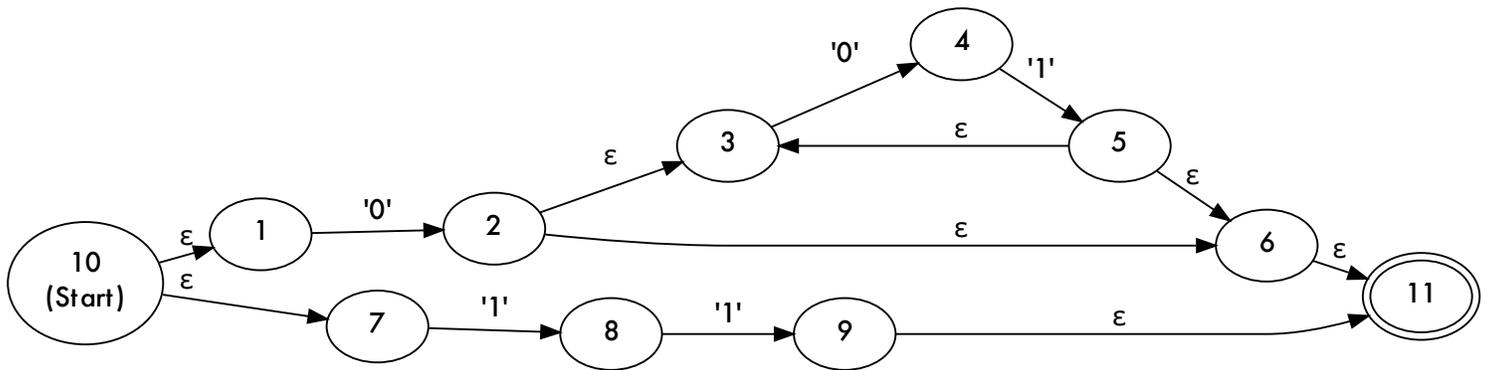


This DFA recognizes integer literals.

Provide three example input strings that are accepted by the above DFA in state D after transitioning through state E, C, and G (respectively). [1 point]

- Via state E: 123L
- Via state C: 0x123L
- Via state G: 0123L

Create an NFA that is equivalent to the regular expression $0(01)^* | 11$ [4 points]
using only the four NFA constructions discussed in class.

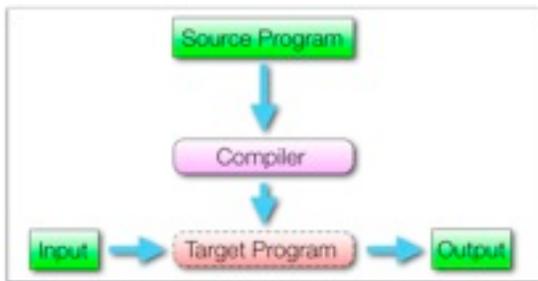


(The exact layout and state numbering is irrelevant.)

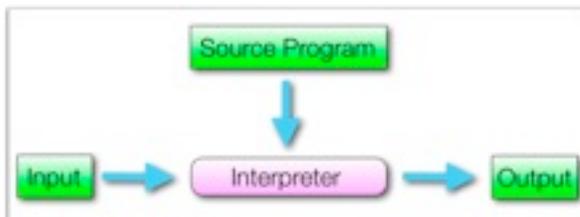
What is the defining characteristic that sets compilers apart from pre-processors and assemblers? [1 point]

Compilers generally perform a deep inspection of the input program as a whole, can reject syntactically correct input, and, if correct, generate never invalid output.

Using diagrams, illustrate the key differences between pure compilation, pure interpretation, and the use of a virtual machine. [3 points]



Compilation occurs only once.
 Interpretation occurs every time that the program is executed.



Both is combined in a virtual machine: the source program is compiled once into byte code, which is then interpreted each time that the program is executed.

