

Q1-Q10 are worth 10 pts each. Your Answer **MUST FIT IN THE LINES PROVIDED**. PRINT YOUR ANSWERS IN UPPERCASE, except when regex requires lowercase.

Q1) What feature(s) from the Regex API corresponds to Context-Sensitive feature(s) from the Chomsky hierarchy?

Push-down automaton - alike DFA, but allowed
to use a stack.

Q2) How does Regex API differ in the usage of Context-Sensitive feature(s) from its original interpretation from the Chomsky hierarchy?

Q3) How does the finite state automata accepting Regular languages differ from the machines that correspond to the remaining levels of the Chomsky hierarchy?

Finite state automata uses no "memory" and is limited by its states, only accepting
Regular languages. As compared to Turing Machines, it can't accept a much larger class of
languages.

Q4) Which named level of the Chomsky hierarchy first introduces the possibility of remembering history?

level 2, context free.

Q5) What are six *different categories* of usage for the backslash character? Different examples of the same category will not be given additional credit.

Category1:

Ascii character

Category2:

class character

Category3:

Special character

Category4:

Anchor

NAME

CS370, QUIZ#3, F

Category5:

Escaping

Category6:

History

Q6) What are five *different categories* of usage for the question mark character? Different examples of the same category will not be given additional credit.

Category1:

Mode

Category2:

passive group

ex) $?:$, $?<=$, $?=$, $?<!$, $?>$

Category3:

pattern. CASE INSENSITIVE

ex) $?i$, $?s$, $?m$, $?#$

Category4:

Ascii character

Category5:

Wildcard

Q7) Why doesn't the test harness for the following Regex API pattern match the character 1 in the matcher string provided? Pattern: $1??$ Matcher: 1

The second "?" means reluctant quantifier. It will start matching from the beginning, matching only zero or once.

Q8) Why doesn't the Chomsky hierarchy represent all possible languages over the alphabet Σ ?

Q9) a) Which character is not represented by the wildcard . (period)? b) How can you override this?

a)

• (period character itself)

b)

\.

Q10) Which characters does the "word" class match?

A-Z a-z 0-9