CSC 461 Programming Languages

FALL 2024

Dr. Stephen Krebsbach

Ass #2 - 35 points Due: Monday Sept. 30h 11:59 PM

Drop in Dropbox when completed.

Please complete/answer the following questions.

Pseudocode:

P1

(a) Explain Absolute Addressing and why it can causes issues when programming our Pseudocode.

(b) LABEL statements were implemented to break from the Absolute addressing approach. Explain what additional logical data structure was created to implement the logic of LABEL statements.

Chapter 1:

P2. What is the disadvantage of having too many features in a Language?

P3. What is aliasing?

P4. What is the name of the category of programming languages whose structure is dictated by the von Neumann computer architecture?

Chapter 3:

P5. Using the following grammar show; **1)** parse tree and **2)** a leftmost derivation , for each of the following statements. (S1 and S2)

<assign> → <id> = <expr>
<id> → A|B|C
<expr> → <expr> + <term>
| <term>
<term> → <term> * <factor>
| <factor>
<factor> → (<expr>)
| <id>

S1) **A = (A + B) * C**

S2) **A = B * (C * (A + B))**

P6. Consider the following grammar:

<S> → <X> a <Y> b
<X> → <X> b | b
<Y> → a <Y> | a

Which of the following sentences **<S>** are in the language generated by this grammar?

Circle answers on this line -> a b c d

a) baab
b) bbbab
c) bbaaaaaa
d) bbaab

P7. Consider the following grammar:

<S> → a <S> c <Y> | <X> | b
<X> → c <Y> | c
<Y> → d | <X>

Which of the following sentences **<S>** are in the language generated by this grammar?

Circle answers on this line -> a b c d

a. abcd
b. acccbd
c. acccbcc
d. acd
e. accc

P8.

(a) Explain what an ambiguous grammar is.

(b) Explain why even if a grammar is NOT ambiguous it could still be defined to not work the way the designer may wish in terms of operator precedence …