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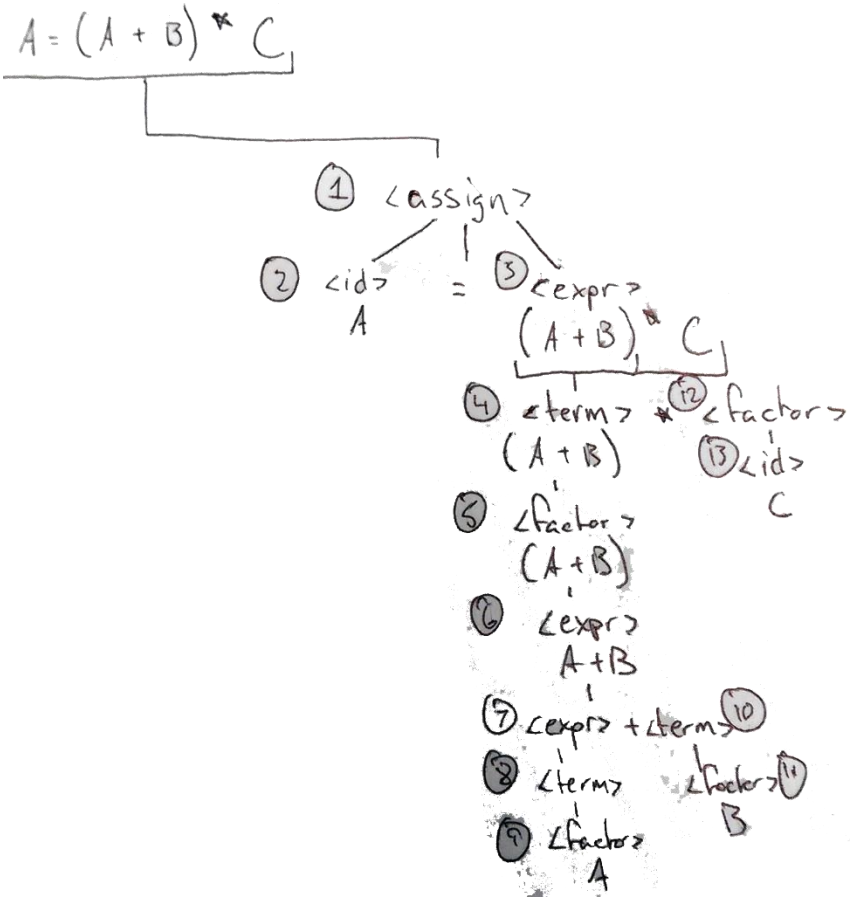
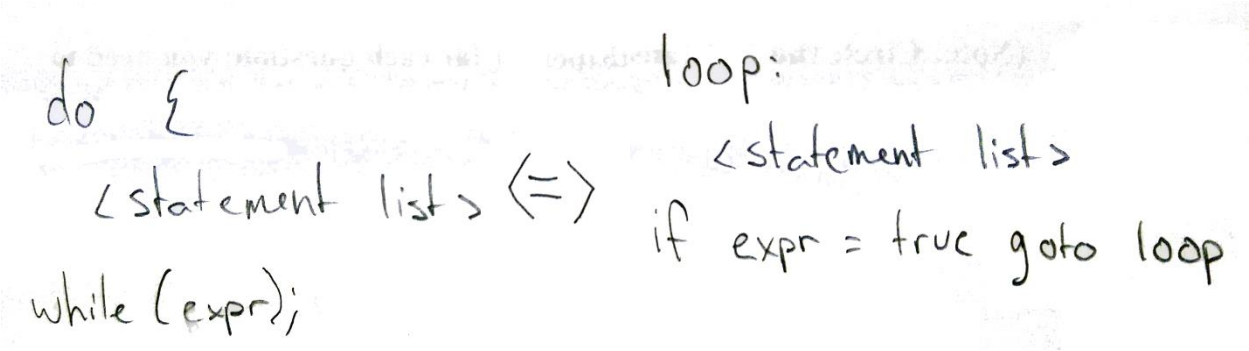
CSE 465/565
Spring 2016
Homework #6

1. Complete outcomes—done
2. Write EBNF description for Java class def header
   ```
   <class header> -> [<object visibility> ][<class modifier> ]class <class
   identifier> [extends <class identifier> ][implements <class identifier {,
   <class identifier>} ] [throws <class identifier> {, <class identifier>}]
   <object visibility> -> public|private|protected
   <class modifier> -> abstract|final|static
   ```
3. Parse tree/left-most derivation



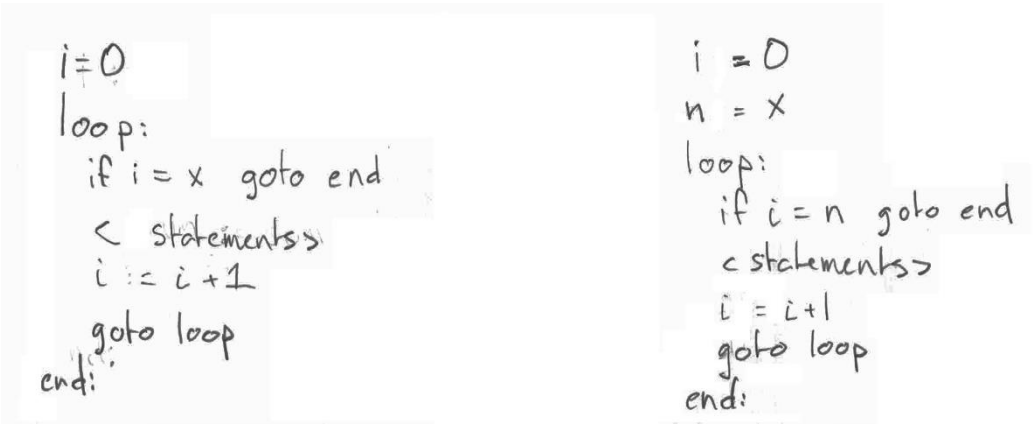
4. Shortest Pascal case statement (using grammar sheet)
   ```
   case x of
   end
   ```

5. Grammar consideration
   Looking at the grammar, we can do a few substitutions to create an easy to understand regex equivalent:
   A -> <A> b | b ⇔ b+
   B -> a <B> | a ⇔ a+
   Then… S -> <A> a <B> b ⇔ b+ a a+ b
   a. baab -> Yes, basically the minimal case
   b. bbbab -> No, there must be at least two “a”s
6. Java do-while operational semantic



7. Compute the weakest precondition
   {a+2b > 1}
   ({a > 3} is weakest precondition for second statement)
8. Compute the weakest precondition
   To fulfill 2a+1, {a > 0}; 2a, {a > .5}
   Weakest precondition: {a > .5}
9. Convert Mystery to Java
   - Mystery first checks to see if expr is equal to var
   - If not, Mystery executes statements and performs check again

   Java:
```
while (expr != var) {
      <statements>
}
```
10. Consider the Z+- inspired loop



11. Activation records