COMPUTER SCIENCE 105
SUMMER SCHOOL 2006

Tutorial 2

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Question 1

In logic, specifically predicate logic, we can define a "well formed formula" (of *wff*), which is any correct statement of logic

A well formed formula is defined as:

a) any atomic expression (true, false, or a Boolean variable) is a *wff*
b) (x) is a *wff* if x is a wff
c) ¬x is a *wff* if x is a *wff*
d) x ∧ y is a *wff* if x and y are both *wff's*
e) x ∨ y is a *wff* if x and y are both *wff's*

Discuss how this relates to recursion.

Valuation is a function (we'll call it *v*) that gives us a value for our whole expression:

a) *v*(a) is a, when a is any atomic expression
b) *v*((x)) = *v*(x)
c) *v*(¬x) is false if v(x) is true, but false otherwise
d) *v*(x ∧ y) is true if and only if x is true and y is true
e) *v*(x ∨ y) is true if x is true or y is true (or both are true)

Discuss how this relates to recursion.

Question 2

Generics allow us to set specific types for a class's internal variables.

Discuss cases where this might be useful.

Question 3

Show a linked list in memory after each of the following operations have been performed:

Add 'c'
Add 'f'
Add 'g'
Remove element 1
Add 't' at 1
Add 'k'
Remove element 2