

SEVENTH QUIZ

You have 15 minutes from the start of class to complete this quiz. Read the questions with care; work with deliberate speed. Don't give us more than we ask for. The usual instructions apply. Good luck!

Problem 1 (10 points)

Below is a grammar in which terminal symbols are indicated by this typewriter typeface.

Name → Fullname | Fullname Degrees

Fullname → First Middle Last Suffix

First → Huey | Dewey | Louie

Middle → M. | Q. | R.

Last → Duck | Goose | XIV

Suffix → empty | , JrSr | Generation

JrSr → Jr. | Sr.

Generation → I | II | III

Degrees → empty | , OneDegree Degrees

OneDegree → M.D. | Ph.D.

(a) (6 points) Mark each of the following six sentences “legal” or “illegal” according to this grammar:

Huey Q. Duck, Jr.

Dewey Goose III

Huey M. Duck, Jr., Sr., III

Louie R. XIV

Dewey Q. Duck, Ph.D., M.D.

Louie R. Duck, Jr., M.D., M.D.

(b) (4 points) Draw the derivation (parse tree) for one of the legal sentences above.

Problem 2 (10 points)

In class we discussed the “software crisis.”

(a) (2 points) In just a few words, what is the “software crisis”?

(b) (2 points) We covered three different approaches to “solving” the crisis; list two of them.

(c) Pick one of the two approaches you listed above, and write its name here:

(c.1) (3 points) In one brief English sentence, describe the approach you just listed.

(c.2) (3 points) In one brief English sentence, give a reason why this approach did not (completely) solve the software crisis (other than “It was too time-consuming and expensive”).

	Brief definition or description	One reason why it didn't "solve" the software crisis (other than "It's too expensive and time-consuming").	One situation where this approach is appropriate or useful today, or one useful concept or technique that this approach produced.
Structured ("go-toless") programming			
N-version programming ("design diversity")			
Formal verification (program proofs)			