UNIVERSITY OF CALIFORNIA
Department of Electrical Engineering
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Computer Science Division

CS 263 **Spring 1996**
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CS 263: Design of Programming Languages
Homework 2
Due February 20, 1996

Reading: In addition to the sections noted below, read Chapters 8 and 9 for next week. Tuesday's lecture will cover FLK and Thursday will be on naming.

1. Exercise 3.5 on page 51 from the book by Turbak, Gifford, and Reistad (TGR). This is a variation on the *Postfix* language from lecture. The syntax for Postfix is on page 32, the informal description of the semantics is on page 9, and the SOS is on page 44. As mentioned in class, this version of Postfix has a different kind of conditional statement called `sel`. Base your semantics on the language in the book.

2. Read section 3.4.3 on Observational Equivalence, pages 68–75 of TGR. Prove equation 3.9 on page 75, which is needed in the proof of observational equivalence. You should also read section 4.3.2 to see observational equivalence is a denotational semantics, although you won't need this material to solve this exercise.

3. Read Section 3.5 of TGR on extending Postfix with `dup`. Do exercise 3.25 on page 79, part a only. This problem is to write a factorial function in extended Posfix. (You may also use pairing as described in exercise 3.24.)

4. Do exercise 4.4 on page 102 of TGR, which depends on the denotational semantics in this Chapter 4.

Note: The ML programming problem has been postponed.