Programming Languages: Homework 2

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Due in **two** weeks, November 5 1998

Note: *You are required to include a printout of a session showing a run of your program on some general testdata.*

Problem 1. *[Problems 3.3 (pp. 94) in Sethi: Programming Languages—Concepts and Constructs, 2nd Edn.]*

Problem 2. *An instant or interval of time expressed in hours, minutes and seconds can be represented by a record. For instance, one could define a type in Pascal as follows*

```
type HOUR     = 0..23;
type MINUTE   = 0..59;
type SECOND   = 0..59;
type TIME     = record hr: HOUR; min: MINUTE; sec: SECOND end;
```

Give the corresponding definition in ADA.

The following programs (with missing bodies) are supposed to add and subtract time intervals. Fill in the bodies:

```
function "+"(U,V: in TIME) return TIME is
   W: TIME;
begin
   --- MISSING BODY
return(W);
end "+";

function "-"(U,V: in TIME) return TIME is
   W: TIME;
begin
   --- MISSING BODY
return(W);
end "-";
```

Remark on the differences in style of programming as you go from Pascal to Ada.

For Extra Credit

How would you change it so that depending on a tag, the time could be in 12 Hrs (AM/PM) notation or in 24 Hrs notation as above?