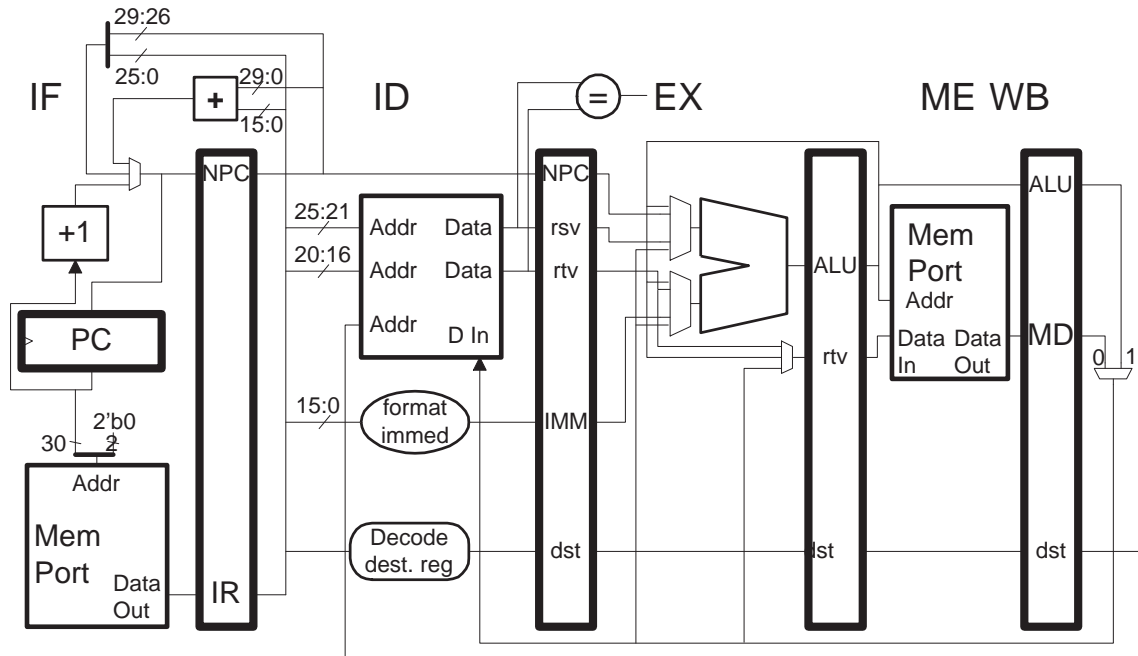**Problem 1:** Solve Fall 2007 Homework 2 without looking at the solution. Then look at the solution and give yourself a grade on a scale of $[0, 1]$. **Warning:** test questions are based on the assumption that homework problems were completed, so make a full effort to solve it without first consulting the solution.

Problem 2: The MIPS IV `movn` instruction is an example of a *predicated* instruction (predication will be covered later in the semester, but that material is not needed to solve this problem).

(*a*) Show how the `movn` instruction could be added to the implementation below inexpensively, but without impact on critical path. Take into account the new logic's impact on dependency testing (see the code sample below). Show all added control logic.

(*b*) Show how the code below would execute on your implementation.

```
add  r1, r2, r3
movn r4, r5, r1
xor  r6, r4, r7
```

(*c*) Suggest methods to eliminate any stalls encountered.