

Logic Programming Worksheet III

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CSCI 320

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For this worksheet, we are going to write our first Prolog programs from scratch.

1. Implement mergesort ... just kidding ... though we will get to that :). The real problem is to write a program similar to gcd that tells us $X \bmod Y$ is 0. Call your program factor.pl. I should be able to call your program with `?- factor(4,2)` etc. NOTE: The gcd example I gave you in the notes is more complicated than this one, but you can use it as inspiration. The `R is A mod B` line can be interpreted intuitively as R gets the results of the arithmetic expression $A \bmod B$.
2. OK. Now mergesort... funny yet? ... So this is a push yourself optional problem. I am the sort of person who enjoys a question more than an answer, so I throw this out there to challenge yourself. I'll provide the answer to this and more next week, but let's see if you can figure it out :) For this problem I want you to write a program to determine the greatest common factor (i.e., `gcf(4,X)` returns 2, `gcf(5,X)` returns 1, `gcf(6,X)` returns 3, etc. It requires you to train your mind to think a bit differently. You'll have to combine what you know of logic and recursion. I also created a helper function though I'm not sure that is necessary.