

Exercise 5.3.1 (Datalog, or Transform from Relational algebra into Datalog)

Write each of the queries of Exercise 2.4.1 in Datalog. You should use only safe rules, but you may wish to use several IDB predicates corresponding to subexpressions of complicated relational algebra expressions.

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Product(maker, model, type)
PC(model, speed, ram, hd, price)
Laptop(model, speed, ram, hd, screen, price)
Printer(model, color, type, price)
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- a) What PC models have a speed of at least 3.00 GHz?
- b) Which manufacturers make laptops with a hard disk (hd) of at least 100 GB?
- c) Find the model number and price of products (of any type) made by manufacturer B.
- d) Find the model numbers of all color laser printers.
- e) Find those manufacturers that sell Laptops, but not PC's.
- f) Find those hard-disk sizes that occur in two or more PC's.
- g) Find those pairs of PC models that have both the same cpu speed and RAM, the size of memory. A pair should be listed only once, e.g., list (l,j) but not (j,i).
- !!h) Find those manufacturers of at least two different computers (PC's or laptops) with speeds of at least 2.80 GHz.
- !!i) Find the manufacturers of the computer (PC or laptop) with the highest available speed.
- !!j) Find the manufacturers of PC's with at least three different cpu speeds.
- !!k) Find the manufacturers who sell exactly three different models of PC.