Product (maker, model, type)

PC (model, speed, ram, hd, price)

Laptop (model, speed, ram, hd, screen, price)

Printer (model, color, type, price)

1. What PC models have a speed of at least 3.00?

R1: = σ **speed** ≥ 3.00 (PC)

R2: = π **model** (R1)

R1 will give the data of the PC whose speed is greater than or equals to 3.00.

R2 result will display the model of PC. The output obtained from the R1.

1. Which manufacturers make laptops with a hard disk of at least 100GB?

R1: = σ **hd**≥ 100 (Laptop)

R2: = Product ⋈ R1

R3: = π **maker**(R2)

R1 will give the data of Laptop whose hard disk is at least 100GB.

R2 will display common data of the tables Product and Laptop.

R3 will display the result the maker of the Product table. The data obtained from the R2.

1. Find the model number and price of all products (of any type) made by manufacturers B.

R1: = σ **maker** = B (Product ⋈ PC)

R2: = σ **maker** = B (Product ⋈ Laptop)

R3: = σ **maker** = B (Product ⋈ Printer)

R4: = π **model, price** (R1)

R5: = π **model, price** (R2)

R6: = π **model, price** (R3)

R7: = R4 **È** R5 **È** R6

R1 will display common data maker B of the tables Product and PC.

R2 will display common data maker B of the tables Product and Laptop.

R3 will display common data maker B of the tables Product and Printer.

R4 will display the model and price of PC. The output obtained from the R1.

R5 will display the model and price of PC. The output obtained from the R2.

R6 will display the model and price of PC. The output obtained from the R3.

R7 result will display the union of R4, R5, R6 data.

1. Find the model numbers of all color laser printers.

R1: = σ **color** = true (Printer)

R2: = σ **type** = laser (R1)

R2: = π **model** (R2)

R1 will display the data of the Printer if the color of the Printer is true.

R2 will display the data of the Printer if the type of the Printer is laser. The output obtained from the R1.

R3 result will display the model of the Printer. The output obtained from the R2.

1. Find those manufacturers that sell Laptops, but not PC’s.

R1: = σ **type** = Laptop (Product)

R2: = σ **type** = PC (Product)

R3: = π **maker** (R1)

R4: = π **maker** (R2)

R5: = R3 \ R4

R1 will display the data of Product table of type is laptop.

R2 will display the data of Product table of type is PC.

R3 will display the maker of Product table obtained from R1.

R4 will display the maker of Product table obtained from R2.

R5 result will display the difference data obtained from R3 and R4