**Homework 5**

**Confidence Level: 100%**

**1. Find models for PCs that have a speed of at least 3.00?**





**SELECT** model

**FROM** PC

**WHERE** speed >= 3.00;



**Confidence Level: 100%**

**2. Find the model number, speed and hard-disk size for all PCs whose price is under $1000**





**SELECT** model, speed, hd

**FROM** PC

**WHERE** price < 1000;



**Confidence Level: 100%**

**3. Do the same as Q 2, but rename the speed column gigahertz and the hd column gigabytes.**





**SELECT** model, speed **AS** gigahertz, hd **AS** gigabytes

**FROM** PC

**WHERE** price < 1000;



**Confidence Level: 100%**

**4. Find the model number and hard-disk size for those PCs that have a speed of 3.2 and a price less than $2000.**





**SELECT** model, hd

**FROM** PC

**WHERE** speed = 3.2 **AND** price < 2000;



**Confidence Level: 100%**

**5. Find the manufacturer and speed of laptops with a hard-disk of at least 100 gigabytes.**







**SELECT** maker, speed

**FROM** Laptop, Product

**WHERE** Product.model = Laptop.model **AND** hd >= 100;



**Confidence Level: 100%**

**6. Find the model number and price of all products (of any type) made by manufacturer B.**

**SELECT** model, price

**FROM** Laptop;

**SELECT** model, price

**FROM** Printer;

**SELECT** model, price

**FROM** PC;



(**SELECT** model, price

**FROM** PC)

**UNION**

(**SELECT** model, price

**FROM** Laptop)

**UNION**

(**SELECT** model, price

**FROM** Printer);



**t1**

**SELECT** t1.model, price

**FROM** ((**SELECT** model, price

**FROM** PC)

**UNION**

(**SELECT** model, price

**FROM** Laptop)

**UNION**

(**SELECT** model, price

**FROM** Printer) ) t1, Product

**WHERE** t1.model = product.model AND maker = 'B';



**Confidence Level: 100%**

**7. Find those manufacturers that sell Laptops but not PCs.**

**SELECT** maker

**FROM** Product

**WHERE** type = ‘pc’;

**SELECT** maker

**FROM** Product

**WHERE** type = ‘laptop’;



(**SELECT** maker

**FROM** Product

**WHERE** type = ‘laptop’)

**MINUS**

(**SELECT** maker

**FROM** Product

**WHERE** type = ‘pc’);



**Confidence Level: 100%**

**8. Find the model numbers of printers with the highest price**



**SELECT** model

**FROM** Printer

**WHERE** price >= **ALL** (**SELECT** price

**FROM** Printer);



**Confidence Level: 100%**

**9. Find the model numbers of PCs whose speed is slower than that of all Laptops.**





**SELECT** model

**FROM** PC

**WHERE** speed < **ALL** (**SELECT** speed

**FROM** Laptop);



**Confidence Level: 100%**

**10. Find the model number of the item (PC, Laptop, or Printer) with the highest price.**

**SELECT** model, price

**FROM** Laptop;

**SELECT** model, price

**FROM** Printer;

**SELECT** model, price

**FROM** PC;



(**SELECT** model, price

**FROM** PC)

**UNION**

(**SELECT** model, price

**FROM** Laptop)

**UNION**

(**SELECT** model, price

**FROM** Printer);



**t1**

**SELECT** model

**FROM** ((**SELECT** model, price

**FROM** PC)

**UNION**

(**SELECT** model, price

**FROM** Laptop)

**UNION**

(**SELECT** model, price

**FROM** Printer) ) t1

**WHERE** price >= **ALL** ((**SELECT** price **FROM** PC)

**UNION**

(**SELECT** price **FROM** Laptop)

**UNION**

(**SELECT** price **FROM** Printer));



**Confidence Level: 100%**

**11. Find the maker of the color printer with the lowest price.**



**SELECT** maker

**FROM** Printer, Product

**WHERE** Printer.model = Product.model;





**SELECT** maker

**FROM** Printer, Product

**WHERE** Printer.model = Product.model

**AND**

price <= **ALL** (**SELECT** price

**FROM** Printer

**WHERE** color = 'true')

**GROUP** **BY** maker;



NOTE: The above query has a small error. It needs to be fixed as:

**SELECT** maker

**FROM** Printer, Product

**WHERE** Printer.model = Product.model

**AND** color = ‘true’

**AND**

price <= **ALL** (**SELECT** price

**FROM** Printer

**WHERE** color = 'true')

**GROUP** **BY** maker;

(Note: GROUP BY has the same effect as DISTINCT, ok??)

**Confidence Level: 100%**

**12. Find the maker(s) of the PC(s) with the fastest processor among all the PCs that have the smallest amount of RAM.**





(**SELECT** speed

**FROM** PC

**WHERE** ram <= **ALL** (**SELECT** ram

**FROM** PC));

(**SELECT** model, speed

**FROM** PC

**WHERE** ram <= **ALL** (**SELECT** ram

**FROM** PC))





**SELECT** model

**FROM** (**SELECT** model, speed

**FROM** PC

**WHERE** ram <= **ALL** (**SELECT** ram

**FROM** PC))

**WHERE** speed >= **ALL** (**SELECT** speed

**FROM** PC

**WHERE** ram <= **ALL** (**SELECT** ram

**FROM** PC));



**SELECT** maker

**FROM** (**SELECT** model

**FROM** (**SELECT** model, speed

**FROM** PC

**WHERE** ram <= **ALL** (**SELECT** ram

**FROM** PC))

**WHERE** speed >= **ALL** (**SELECT** speed

**FROM** PC

**WHERE** ram <= **ALL** (**SELECT** ram

**FROM** PC))) t1, Product

**WHERE** product.model = t1.model;



**Confidence Level: 100%**

**13. Find those hard-disk sizes that occur in 2 or more PCs.**





**SELECT**  hd, **COUNT**(hd) **AS** count

**FROM** PC

**GROUP BY** hd;



**SELECT** hd

**FROM** (**SELECT** hd, **COUNT**(hd) **AS** count

**FROM** PC

**GROUP** **BY** hd)

**WHERE** count >= 2;



**Confidence Level: 100%**

**14. Find the manufacturers of at least 2 different computers (PCs or Laptops) with speeds of at least 3.0**



**SELECT** model, speed

**FROM** Laptop

**WHERE** speed >= 3

**SELECT** model, speed

**FROM** PC

**WHERE** speed >= 3



(**SELECT** model, speed

**FROM** PC

**WHERE** speed >= 3)

**UNION**

(**SELECT** model, speed

**FROM** Laptop

**WHERE** speed >= 3);





(**SELECT** maker, **COUNT**(maker) **AS** count

**FROM** ((**SELECT** model, speed

**FROM** PC

**WHERE** speed >= 3)

**UNION**

(**SELECT** model, speed

**FROM** Laptop

**WHERE** speed >= 3))computer, Product

**WHERE** Product.model = computer.model

**GROUP** **BY** maker);



**SELECT** maker

**FROM** (**SELECT** maker, **COUNT**(maker) **AS** count

**FROM** ((**SELECT** model, speed

**FROM** PC

**WHERE** speed >= 3)

**UNION**

(**SELECT** model, speed

**FROM** Laptop

**WHERE** speed >= 3))computer, Product

**WHERE** Product.model = computer.model

**GROUP** **BY** maker)

**WHERE** count >= 2;

