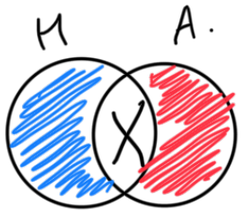
DBMidPast

Q1) a) Project is always first.

Select(order#, Shipdate) ×

$$\Pi_{order\#,\ shipdate}\left(\sigma_{warehouse\#\ =\ "W2"}(Shipment)\right)$$

b) $\Pi_{order\#,\ Warhouse\#}\left(\sigma_{customer\_name\ =\ "Hanif"}\left(\left(cust. \bowtie_{(Cust.\ Cust\#\ =\ Order.\ Cust\#)} Order\right) \bowtie_{Order.\ order\#\ =\ Shipment.\ Order\#} Shipment\right)\right)$

c) 

$(U - \cap) \rightarrow$ Set diff.

$$\left(\underbrace{(cust \bowtie Order)}_{C.Cust\#\ =\ O.Cust\#} \bowtie \underbrace{\left(Order\_item \bowtie_{O.item\#\ =\ I.item\#} Item\right)}_{Y}\right)$$

x

$$\Pi_{customer\_name,\ item\#}\left(\sigma_{cust.customer\_name\ =\ "Hanif" \cap\ Amif}\left(x \bowtie_{x.order\#\ =\ y.order\#} y\right)\right)$$

d) $\Pi_{order\#}\left(\sigma_{shipdate\ -\ Orderdate\ >\ 30}\left(Order \bowtie Shipment\right)\right)$

Order.order# = Shipment.order#.

Q2) - price upto 2 dp.
- Qt > 0.

a) Schema:

History (OrderNO, Date, Customer, Contact#, item_name, Quantity, Price, Total)

b) 2NF: Partial Dep.

Total depends on quantity and price.

History (OrderNO, Date, Customer, Contact#;)
Bill (Order_No, item name, Qt, Price, total).

c) $x \longrightarrow Y \longrightarrow Z$.

$x \longrightarrow Z$

Contact# depends on Customer. So.

History (Order#, Date, customer) FK (Customer)
Bill (Order #, item name, Qt, Price, total)
Cust_Info(Customer, Contact#)

Q4) a) A Ans

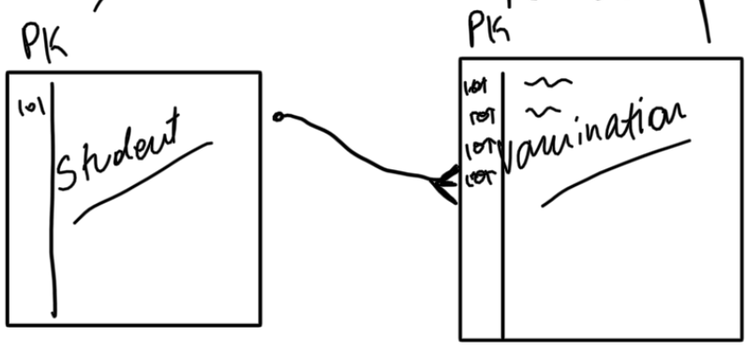
b) C Ans/

c) ID ⇄ name. ✓

× what if there are multiple same names?

B. Ans/

d)



← 1 student could've gotten multiple vacc's.

Student.

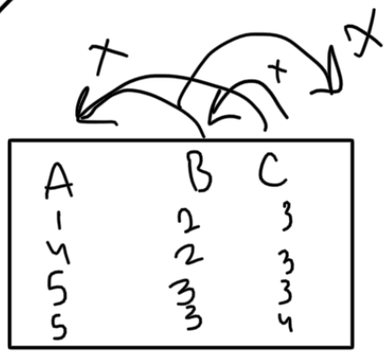
ID	Name

Vaccination.

ID	V.Name	Date.

C Ans/

e)



Does not hold.

ID	name	City.
1	2	3
4	2	3
5	3	3
5	3	4 X

D Ans/