Task 1:

1. Consider influenza epidemics for 2-person families. The probability is 21% that at least one has disease. The probability that the husband has contracted influenza is 15% while the probability that both the wife and husband have contracted the disease is 10%. What is the probability that the wife has influenza?

*# A=Mother, B = Father*

*# P(AuB)= 21%, P(B)=15%, P(AnB)=10%.*

*# Since we know P(AuB)=P(A)+P(B)-P(AnB), therefore P(A)=P(AuB)-P(B)+P(AnB)*

P\_AuB <- 0.21

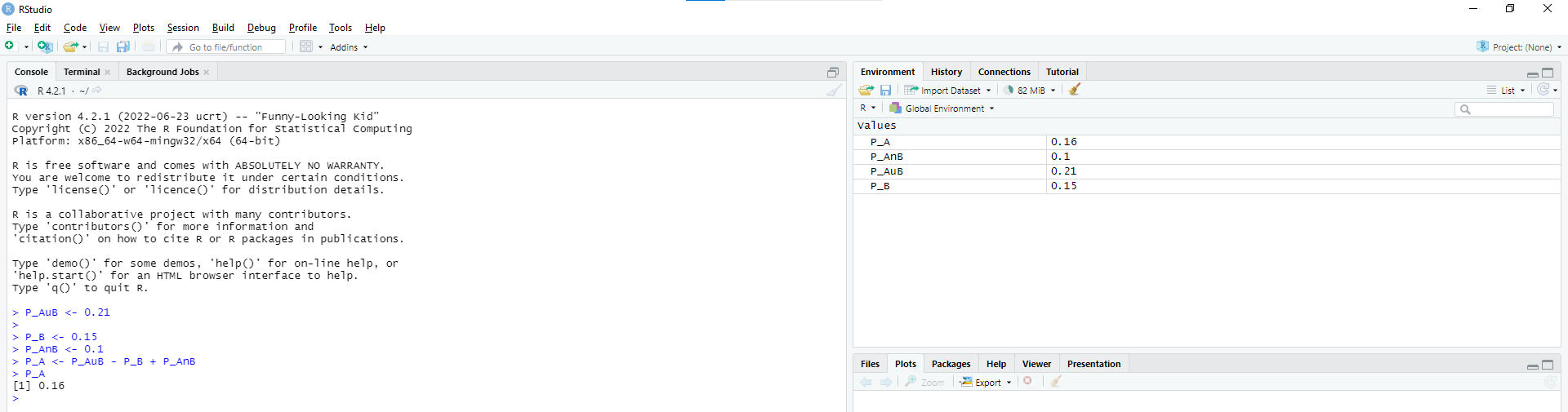
P\_B <- 0.15

P\_AnB <- 0.1

P\_A <- P\_AuB - P\_B + P\_AnB

P\_A

0.16



2. Here's an example of database structures:

FRUITS\_EXPORT (Schema):

seller\_info (table):

- seller\_id

- fruit\_id

- fruit\_weight (tons)

consumption\_info (table):

- fruit\_id

- seller\_id

- client\_id

- quantity\_purchased\_fruit (tons)

Write a PostgreSQL query to find the following:

2.1. How many tons worth of fruit does an average seller have?

select *avg*(s.fruit\_weight) from fruits\_export.seller\_info s

2.2. How many sellers have at least one client who purchased their fruit?

select *count*(distinct(c.seller\_id)) from fruits\_export.consumption\_info c

select *count*(distinct(s.seller\_id)) from fruits\_export.seller\_info s  
left join fruits\_export.consumption\_info c on s.seller\_id = c.seller\_id  
where c.seller\_id is not null