



SELECT "Hello World!"

sql_select("Hello World!")

sql_query() |> sql_select("Hello World!")



SELECT p.mrn FROM patient p

p = sql_alias("patient")

sql_join(p) |> sql_select(p.mrn)

p = sql_alias("patient")

p |> sql_select(p.mrn)

(p = sql_from("patient")) |> sql_select(p.mrn)



SELECT p.mrn, e.date

FROM patient p

JOIN encounter e ON (p.id = e.patient_id)

p = sql_alias("patient")

e = sql_alias("encounter")

sql_from(p) |> sql_join(e, p.id, == e.patient_id) |> sql_select(p.mrn, e.date)

p = sql_alias(catalog["public"]["patient"])

e = sql_alias(catalog["public"]["encounter"])

sql_from(p) |> sql_join(e, autojoin=p) |> sql_select(p.mrn, e.date)

p = sql_alias("patient")

e = sql_alias("encounter")

p |> sql_join(e, p.id, == e.patient_id) |> sql_select(p.mrn, e.date)

p = sql_alias("patient")

e = sql_alias("encounter")

sql_from(p) |> sql_join(e, p.id, == e.patient_id) |> sql_select(p.mrn) |> sql_select(e.date)



SELECT p.mrn, e.date

FROM patient p

JOIN encounter e ON (p.id = e.patient_id)

p = From("patient")

e = From("encounter")

j = Join(p, e, p.id, == e.patient_id)

Select(j, p.mrn, e.date)

sql_from((p = sql_alias("patient")) |> sql_join((e = sql_alias("encounter")), p.id, == e.patient_id) |> sql_select(p.mrn, e.date))



SELECT p.sex, COUNT(p)

FROM patient p

GROUP BY p.sex

p = sql_alias("patient")

g = sql_from(p) |> sql_group(sex = p.sex)

g |> sql_select(g.sex, sql_count(p))

p = From("patient")

g = Group(p, sex = p.sex)

Select(g, g.sex, Count(p))



SELECT p.mrn, COALESCE(g.n_e, 0)

FROM patient p

LEFT JOIN (

SELECT e.patient_id, COUNT(e) AS n_e

FROM encounter e

GROUP BY e.patient_id) g ON (p.id = g.patient_id)

p = From("patient")

e = From("encounter")

g = Group(e, patient_id = e.patient_id)

j = LeftJoin(p, g, p.id, == g.patient_id, omit_if_unused=true)

Select(j, p.mrn, Coalesce(Count(e), 0))

p = From("patient")

e = From("encounter")

g = Group(e, patient_id = e.patient_id)

gs = Select(g, patient_id = g.patient_id, n = Count(e))

j = LeftJoin(p, gs, p.id, == gs.patient_id)

Select(j, p.mrn, Coalesce(gs.n, 0))

p = From("patient")

e = From("encounter")

g = Group(e, patient_id = e.patient_id, summarize=(; n = Count(e)))

j = LeftJoin(p, g, p.id, == g.patient_id)

Select(j, p.mrn, Coalesce(g.n, 0))

SELECT p.mrn

FROM patient p

WHERE p.sex = 'male'

p = From("patient")

w = Where(p, p.sex, == "male")

Select(w, p.mrn)

p = From("patient", columns=["mrn", "sex"])

w = Where(p, Ref(1, 2), == "male", select=[Ref(1,1)])

Select(w, select=[Ref(1,1)])

patient_tbl = Table("patient", [{"id", Int}, {"sex", String}, {"mrn", String}])

encounter_tbl = Table("encounter", [{"id", Int}, {"patient_id", Int}, {"date", Date}])

auto_connect(patient_tbl, encounter_tbl, [{"id", "patient_id"}])

p = From(patient_tbl)

e = From(encounter_tbl)

j = LeftJoin(p, e)

Select(j, p.mrn, e.date)



SELECT p.mrn, EXTRACT(YEAR FROM e.date)
FROM patient p
JOIN encounter e
ON (p.id = e.patient_id)
WHERE p.sex = 'male'



```
p = From(patient)
p_ = Select(p, id = Const(:id), _sex = Const(:sex), _mrn = Const(mrn))
e = From(encounter)
e_ = Select(e, _patient_id = Const(patient_id), _date = Const(:date))
j = Join(p_, e_, p._id, := e._patient_id)
l_ = Select(j, _mrn = p._mrn, _sex = p._sex, _date = e._date)
w = Where(l_, l._sex, := "male")
w_ = Select(w, mrn = l._mrn, _date = l._date)
s = Select(w_, mrn = w._mrn, year = Year(w._date))
```



normalize

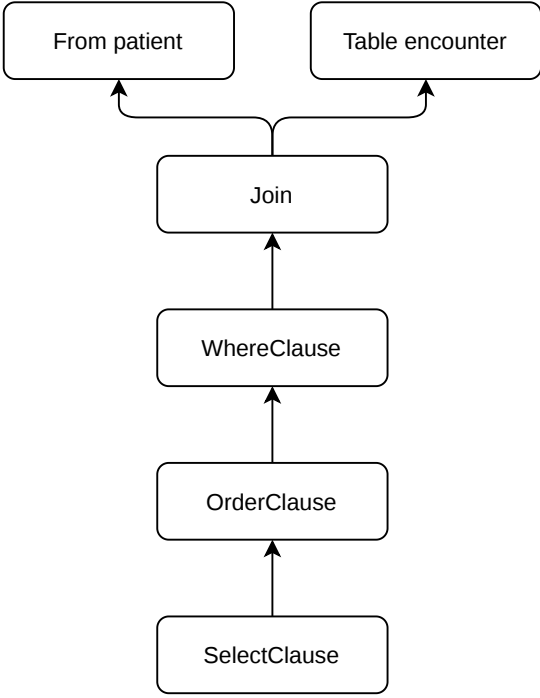
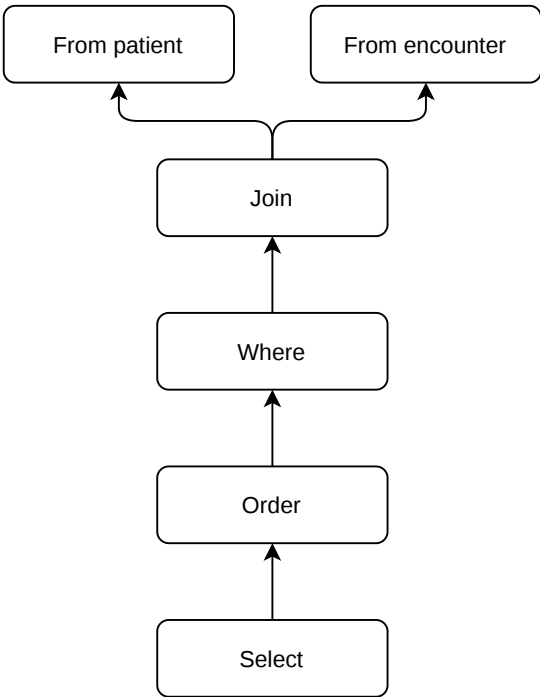
p.mrn => w_mrn
e.date => w_date

SELECT c.person_id, c.peer_id, c.timestamp, c.distance
FROM contact c

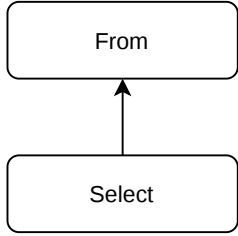
For each pair of persons, find the contact interval when there were detected at least once in a minute in a distance of less than 5 meters.



SELECT p.mrn, e.date
FROM patient p
JOIN encounter e ON (p.id = e.patient_id)
WHERE p.sex = 'male'
ORDER BY e.date



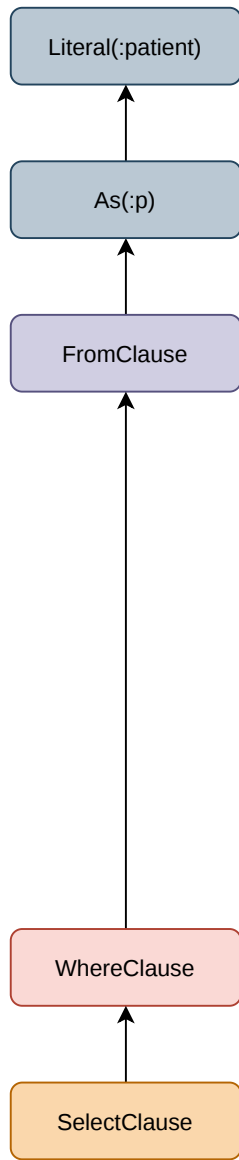
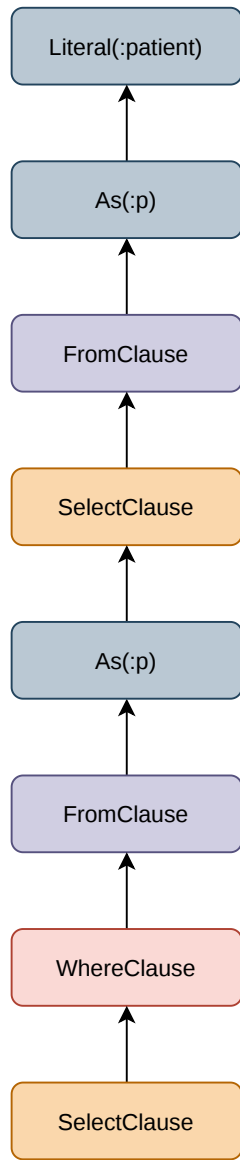
SELECT p.mrn
FROM patient p



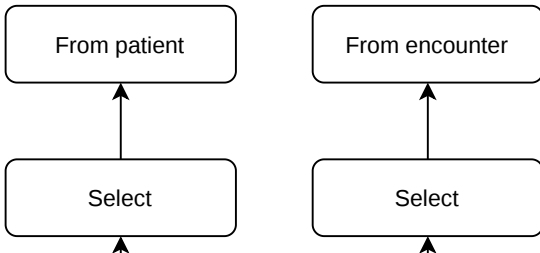
SELECT p.mrn, e.date
FROM patient p
JOIN encounter e
ON (p.id = e.patient_id)



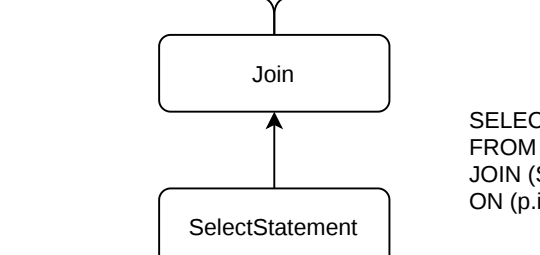
SELECT ...
FROM patient AS p
JOIN encounter AS e ON ...



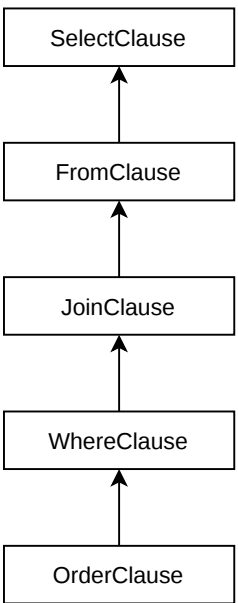
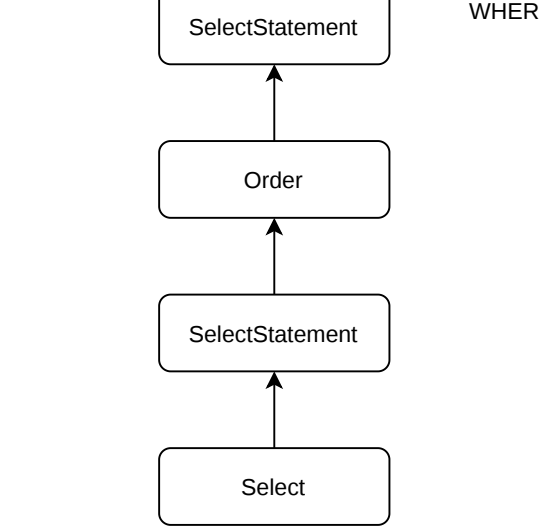
SELECT p.id, p.mrn, p.sex FROM patient p
SELECT p.id, p.mrn FROM patient p
SELECT e.patient_id, e.date FROM encounter e



SELECT p.mrn, p.sex, e.date
FROM (SELECT p.id, p.mrn, p.sex FROM patient p) p
JOIN (SELECT e.patient_id, e.date FROM encounter e) e
ON (p.id = e.patient_id)



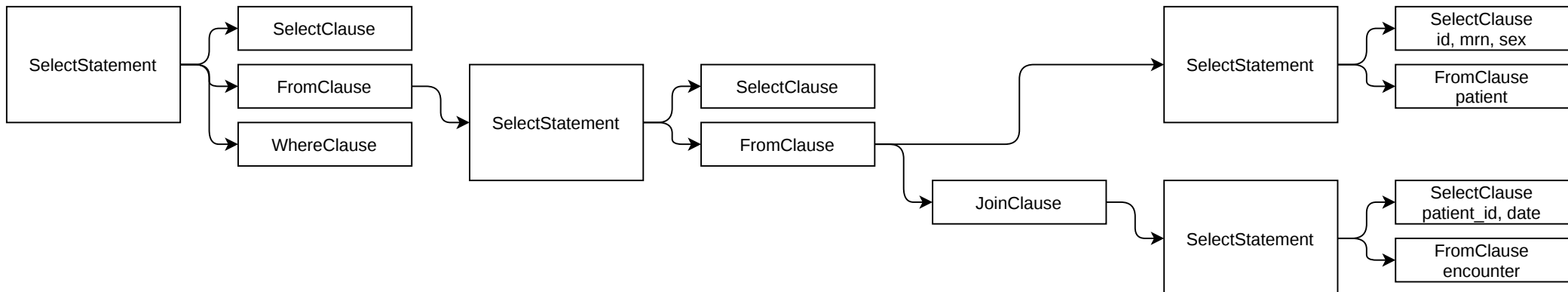
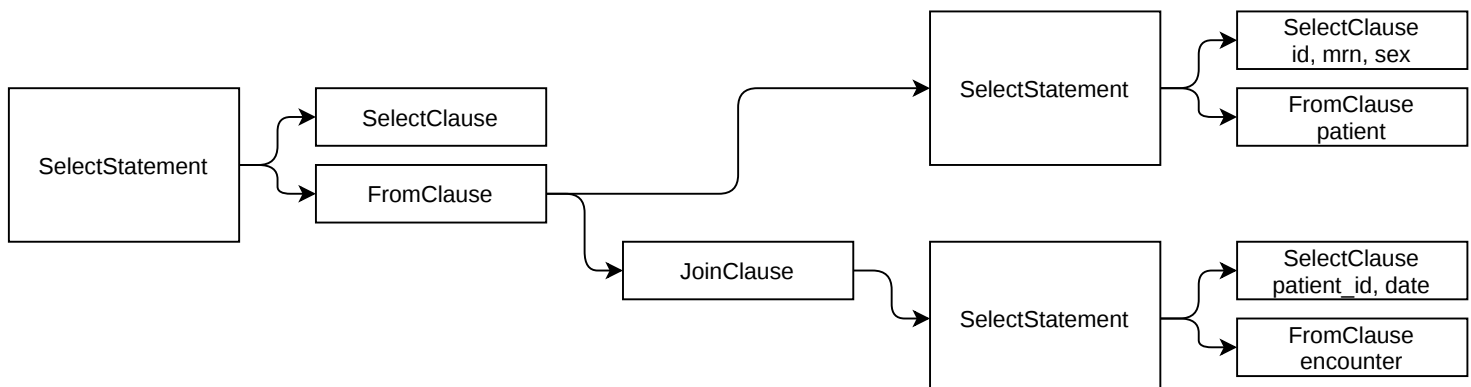
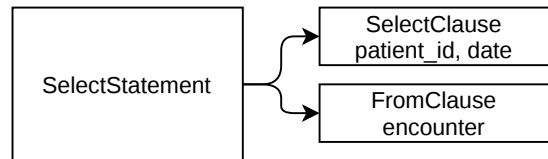
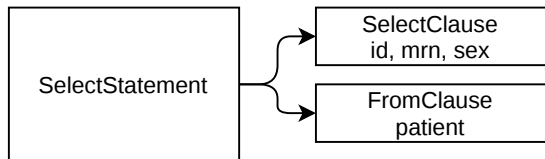
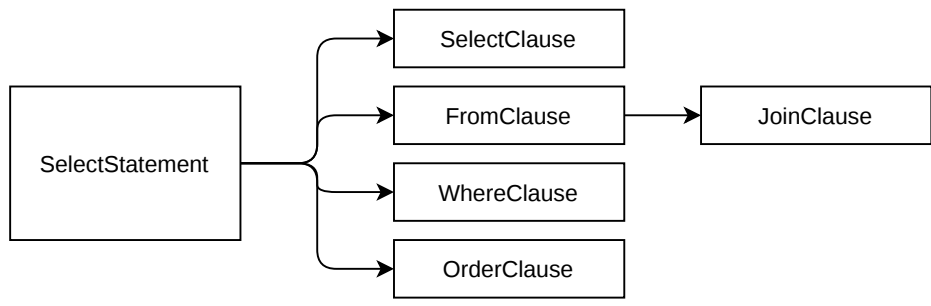
SELECT p.mrn, e.date
FROM (
SELECT p.mrn, p.sex, e.date
FROM (SELECT p.id, p.mrn, p.sex FROM patient p) p
JOIN (SELECT e.patient_id, e.date FROM encounter e) e
ON (p.id = e.patient_id)) p
WHERE p.sex = 'male'



Clause
:SELECT

Clause
:FROM

Clause
:JOIN





```
WITH RECURSIVE X AS (  
  SELECT 1 AS N  
  UNION ALL  
  SELECT ...  
  ...  
  FROM X  
  ...  
  FROM X)
```





SELECT ... FROM (SELECT) AS ...



SELECT ... FROM (SELECT ...) AS ... WHERE ...



SELECT ... FROM (SELECT ... FROM ...) AS ... WHERE ...



SELECT ... FROM (SELECT ... WHERE ...) AS ... WHERE ...



SELECT ... FROM (SELECT ... JOIN ...) AS ... WHERE ...





