Solution for Moed B Q1

a)

SELECT district\_id

FROM district

WHERE A2 = 'Center';

b)

SELECT MAX(amount) AS max\_loan

FROM loan;

c)

SELECT client.client\_id, card.card\_id

FROM client

JOIN district ON district.district\_id = client.district\_id

JOIN disp ON disp.client\_id = client.client\_id

JOIN card ON card.disp\_id = disp.disp\_id

WHERE district.A4 = 5;

d)

SELECT a.account\_id

FROM account a

LEFT JOIN loan l

ON l.account\_id = a.account\_id

AND l.amount > 1000000

WHERE l.loan\_id IS NULL;

e)

CREATE VIEW account\_transactions AS

SELECT a.account\_id,

COUNT(t.trans\_id) AS num\_transactions

FROM account AS a

LEFT JOIN trans AS t

ON t.account\_id = a.account\_id

GROUP BY a.account\_id;

f)

SELECT num\_transactions, COUNT(\*) AS num\_accounts

FROM account\_transactions GROUP BY num\_transactions

ORDER BY num\_transactions ASC;

g)

SELECT c1.client\_id AS a,

c2.client\_id AS b

FROM client c1

JOIN client c2

ON c1.birth\_date = c2.birth\_date

WHERE c1.client\_id <> c2.client\_id;

במקרה זה אין לכלול זוגות רפלקסיביים, משום שהם אינם מוסיפים מידע חדש – ברור שכל לקוח “נולד עם עצמו”. הכללתם תגרום לניפוח מלאכותי של התוצאות ותיצור כפילויות לא נחוצות. השאלה דורשת סימטריה בין לקוחות שונים (כלומר ‎(a,b) וגם ‎(b,a)), ולא רפלקסיביות. לכן נכון להחזיר זוגות סימטריים בלבד ולהשמיט את ‎(a,a).

h)

i)

CREATE VIEW client\_card\_signature AS

SELECT c.client\_id,

GROUP\_CONCAT(DISTINCT ca.type ORDER BY ca.type) AS card\_signature

FROM client c

JOIN disp d ON c.client\_id = d.client\_id

JOIN card ca ON d.disp\_id = ca.disp\_id

GROUP BY c.client\_id;

ii)

CREATE VIEW card\_signature\_distribution AS

SELECT card\_signature, COUNT(\*) AS num\_clients

FROM client\_card\_signature

GROUP BY card\_signature

ORDER BY num\_clients DESC;

iii)

SELECT num\_cards, COUNT(\*) AS num\_clients

FROM client\_num\_cards

GROUP BY num\_cards

ORDER BY num\_cards;