-- query1

SELECT calendar.date,  
 IFMISSINGORNULL(counting.access\_count, 0) AS access\_count  
FROM (SELECT s.swipe\_date AS date, COUNT (\*) AS access\_count  
 FROM veronacard.full\_veronacard.full\_POI\_2015 AS POIdb UNNEST POIdb.swipes AS s  
 WHERE date\_part\_str(s.swipe\_date, "year") = 2015  
 AND date\_part\_str(s.swipe\_date, "month") = 7  
 AND POIdb.name = 'Arena'  
 GROUP BY s.swipe\_date) AS counting  
 RIGHT JOIN (SELECT c.date AS date  
 FROM veronacard.\_default.calendar AS c  
 WHERE date\_part\_str(c.date, "year") = 2015  
 AND date\_part\_str(c.date, "month") = 7) AS calendar  
 ON calendar.date == counting.date

+ indici

CREATE INDEX idx\_date ON veronacard.\_default.calendar(date)

--query2 with0

WITH totalcount AS (  
 WITH swipecount AS   
 SELECT poi.name AS poiname, COUNT(\*) AS scount  
 FROM veronacard.full\_veronacard.full\_POI\_2016 AS poi UNNEST poi.swipes AS s  
 WHERE s.swipe\_date = "2016-08-09"  
 GROUP BY poi.name),  
 poilist AS (  
 SELECT DISTINCT poi.name AS poiname   
 FROM veronacard.full\_veronacard.full\_POI\_2014 AS poi UNION . . .   
 )   
 SELECT poilist.poiname, IFMISSINGORNULL(swipecount.scount,0) AS scount  
 FROM swipecount RIGHT JOIN poilist ON poilist.poiname = swipecount.poiname  
 ),  
 mincount AS (  
 ARRAY\_MIN(totalcount[\*].scount))  
SELECT totalcount.poiname, totalcount.scount  
FROM totalcount  
WHERE totalcount.scount = mincount

+ indici

CREATE INDEX idx\_POI\_2014\_datename IF NOT EXISTS  
 ON veronacard.full\_veronacard.full\_POI\_2014(ALL ARRAY s.swipe\_date FOR s IN swipes END,name);

--query2

WITH swipescount AS (  
 SELECT poi.name AS poiname, COUNT (\*) AS count  
 FROM veronacard.full\_veronacard.full\_POI\_2016 AS poi   
 UNNEST poi.swipes AS s  
 WHERE s.swipe\_date = "2016-08-09"  
 GROUP BY poi.name),  
 min\_count AS (  
 ARRAY\_MIN(swipescount[\*].count))  
 SELECT sc.poiname, sc.count  
 FROM swipescount AS sc  
 WHERE sc.count = min\_count

+ indici

CREATE INDEX idx\_POI\_2014\_datename IF NOT EXISTS  
 ON veronacard.full\_veronacard.full\_POI\_2014(ALL ARRAY s.swipe\_date FOR s IN swipes END,name);

-- query3

CREATE INDEX idx\_cardid IF NOT EXISTS ON veronacard.full\_veronacard.full\_card(id)

WITH eligibles AS (card  
 SELECT DISTINCT card.id AS id  
 FROM veronacard.full\_veronacard.full\_card AS card   
 UNNEST card.swipes AS s1   
 UNNEST card.swipes AS s2  
 WHERE s1.POI\_name = "Verona Tour"  
 AND s2.POI\_name = "Santa Anastasia"  
 AND (s1.swipe\_date <> s2.swipe\_date  
 OR s1.swipe\_time <> s2.swipe\_time))  
SELECT eligibles.id AS id,  
 array\_agg({s.POI\_name, s.swipe\_date, s.swipe\_time}) AS swipes  
FROM eligibles join veronacard.full\_veronacard.full\_card AS   
 ON card.id = eligibles.id UNNEST card.swipes AS s  
GROUP BY eligibles.id

+ indici

CREATE INDEX idx\_q3b IF NOT EXISTS  
 ON veronacard.full\_veronacard.full\_card  
 (ALL ARRAY `s`.`POI\_name` = "Verona Tour" FOR s IN `swipes` END);

CREATE INDEX idx\_q3c IF NOT EXISTS  
 ON veronacard.full\_veronacard.full\_card  
 (ALL ARRAY `s`.`POI\_name` = "Santa Anastsia" FOR s IN `swipes` END);

CREATE INDEX idx\_q3 IF NOT EXISTS  
 ON veronacard.full\_veronacard.full\_card  
 (ALL ARRAY `s`.`POI\_name` FOR s IN `swipes` END);