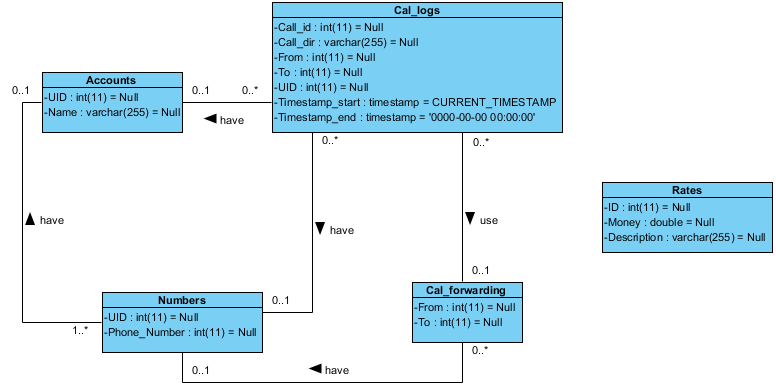
**1. Model of DB: class diagram**



**2. SQL queries**

**1) Total expenses**

SELECT round(SUM(timestampdiff(second, Timestamp\_start, Timestamp\_end)\*money),2) AS 'total expenses'

FROM Rates, Call\_logs LEFT JOIN Call\_forwarding ON Call\_logs.To=Call\_forwarding.From

WHERE ((Call\_logs.To NOT IN (SELECT Call\_forwarding.From FROM Call\_forwarding)) AND (Call\_logs.To IN (SELECT Numbers.Phone\_Number FROM Numbers)) OR (Call\_logs.To IN (SELECT Call\_forwarding.From FROM Call\_forwarding)) AND (Call\_forwarding.To IN (SELECT Numbers.Phone\_Number FROM Numbers))) AND Call\_logs.Call\_dir='out' AND money=(SELECT Rates.Money FROM Rates WHERE Rates.ID='1') OR

Call\_logs.Call\_dir='in' AND money=(SELECT Rates.Money FROM Rates WHERE Rates.ID='2') OR

((Call\_logs.To NOT IN (SELECT Call\_forwarding.From FROM Call\_forwarding)) AND (Call\_logs.To NOT IN (SELECT Numbers.Phone\_Number FROM Numbers)) OR (Call\_logs.To IN (SELECT Call\_forwarding.From FROM Call\_forwarding)) AND (Call\_forwarding.To NOT IN (SELECT numbers.Phone\_Number FROM Numbers))) AND Call\_logs.Call\_dir='out' AND money=(SELECT Rates.Money FROM Rates WHERE Rates.ID='3')

**Results for Query 1:**



**2) Top 10: most active users**

SELECT Call\_logs.UID, Accounts.Name, SUM(timestampdiff(second, Timestamp\_start, Timestamp\_end)) AS 'total\_time, sec'

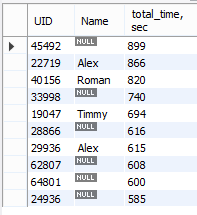
FROM Call\_logs LEFT JOIN Accounts ON Accounts.UID=Call\_logs.UID

GROUP BY Call\_logs.UID

ORDER BY SUM(timestampdiff(second, Timestamp\_start, Timestamp\_end)) DESC

LIMIT 10

**Results for Query 2:**



**3) Top 10: users with highest chargers and daily distribution for each of them**

SELECT Call\_logs.UID, round(SUM(timestampdiff(second, Timestamp\_start, Timestamp\_end)\*money),2) AS 'charges', SUM(timestampdiff(second, Timestamp\_start, Timestamp\_end)) AS 'total\_time'

FROM Rates, Call\_logs LEFT JOIN Call\_forwarding ON Call\_logs.To=Call\_forwarding.From

WHERE ((Call\_logs.To NOT IN (SELECT Call\_forwarding.From FROM Call\_forwarding)) AND (Call\_logs.To IN (SELECT Numbers.Phone\_Number FROM Numbers)) OR (Call\_logs.To IN (SELECT Call\_forwarding.From FROM Call\_forwarding)) AND (Call\_forwarding.To IN (SELECT Numbers.Phone\_Number FROM Numbers))) AND Call\_logs.Call\_dir='out' AND money=(SELECT rates.Money FROM Rates WHERE Rates.ID='1') OR

Call\_logs.Call\_dir='in' AND money=(SELECT Rates.Money FROM Rates WHERE Rates.ID='2') OR

((Call\_logs.To NOT IN (SELECT Call\_forwarding.From FROM Call\_forwarding)) AND (Call\_logs.To NOT IN (SELECT Numbers.Phone\_Number FROM Numbers)) OR (Call\_logs.To IN (SELECT Call\_forwarding.From FROM Call\_forwarding)) AND (Call\_forwarding.To NOT IN (SELECT Numbers.Phone\_Number FROM Numbers))) AND Call\_logs.Call\_dir='out' AND money=(SELECT rates.Money FROM Rates WHERE Rates.ID='3')

GROUP BY Call\_logs.UID

ORDER BY round(SUM(timestampdiff(second, Timestamp\_start, Timestamp\_end)\*money),2) DESC

LIMIT 10

**Results for Query 3:**

