

National University of Computer and Emerging Sciences



In-Lab 4 Exercise

“Nested Queries”

Database Systems

Spring 2023

Department of Computer Science
FAST-NU, Lahore, Pakistan

Total Time: 120 Minutes

Schema:

For this exercise use the following schema, the script to create this schema and populate data is given in Twitter.SQL file.

UserName	Age	Country	users
1	Ali 23	18	
2	Aliza	40	
3	Aysha	19	
4	Donald Trump	60	
5	Imran Khan	55	
6	Natasha	28	
7	Samuel	37	
8	Sara	30	

HashtagID	Hashtag	Hashtags
1	1	
2	2	
3	3	
4	4	
5	5	

UserName	InterestID	user interests
1	Ali 123	
2	Ali 123	
3	Ali 123	
4	Ali 123	
5	Aliza	
6	Aliza	
7	Aliza	
8	Aliza	
9	Imran Khan	

InterestID	Description	interests
1	10	
2	11	
3	12	
4	13	
5	14	

FollowedUserName	Following
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	

FollowedUserName	Following
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	

TweetID	LikeByUserName	LikeOnDate	likes
1	1	Aliza	
2	2	Aliza	

TweetID	UserName	Text	tweets
1	1	Ali 123	
2	2	Imran Khan	
3	3	Sara	
4	4	Imran Khan	
5	5	Sara	
6	6	Imran Khan	
7	7	Sara	
8	8	Sara	
9	9	Donald T...	
10	10	Imran Khan	
11	12	Donald T...	
12	13	Sara	
13	14	Donald T...	
14	15	Aliza	

Exercise:

1. What is maximum, minimum, average and standard deviation of ages of the users?
(Search Standard Dev function)

Expected Output:

	MaxAge	MinAge	StdevAge
1	60	18	15.431299362011

2. Give name of the user who has the highest number of followers.

Expected Output:

	UserName	NoOfFollowers
1	DonaldTrump	5
2	ImranKhan	5

3. Give name of the user who has second highest followers.

Expected Output:

	UserName	NoOfFollowers
1	Ali123	1

4. List names of all the users who have never tweeted.

Expected Output:

	UserName
1	Aysha
2	Natasha
3	Samuel

5. List all the hashtags and usernames and number of times that user used that hashtag.

Expected Output:

	hashtag	username	noOfTimes
1	#Census	Ali123	1
2	#MasseCritique	Aliza	1
3	#DrugMovies	DonaldTrump	1
4	#MasseCritique	DonaldTrump	2
5	#Census	ImranKhan	2
6	#DrugMovies	ImranKhan	1
7	#MasseCritique	ImranKhan	1
8	#Census	Sara	2
9	#DrugMovies	Sara	1
10	#piratage	Sara	1

6. Find the users who have never used the hashtag #Census.

Expected Output:

	username
1	Aliza
2	DonaldTrump

7. List all the usernames that have never been followed.

Expected Output:

	UserName
1	Aliza
2	Aysha
3	Natasha
4	Samuel
5	Sara

8. List all the usernames that have never been followed. Using Exist Clause.

Expected Output:

	UserName
1	Aliza
2	Aysha
3	Natasha
4	Samuel
5	Sara

9. Find the most common interest of users. (The interest with largest number of users). Also find the least common interest.

Expected Output:

	InterestID	CountInterest
1	10	3

	InterestID	CountInterest
1	11	2
2	13	2
3	14	2

10. Show total tweets per country. The result should be in order of country name.

Expected Output:

	country	totalNoOfTweets
1	Iran	5
2	Pakistan	5
3	USA	4

11. Give the name of the users who have at least one follower from Pakistan.

Expected Output:

	FollowedUserName
1	Donald Trump