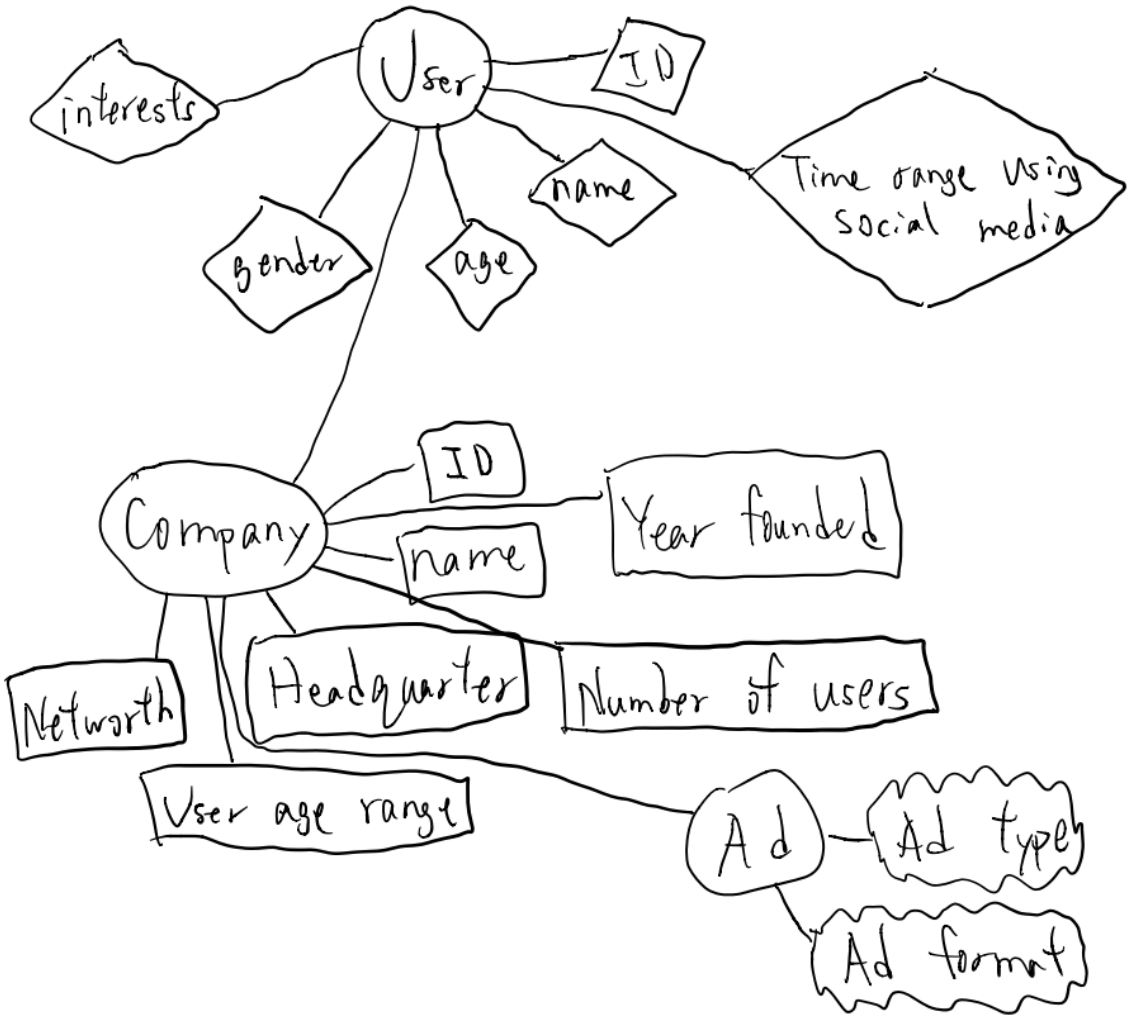
**Group: Ethan Lavinsky, Mahajabin Sultana, Tushar Sharma, Yun-Ting Tsai, Zhongwei Li**

# Topic - Social Media

**Diagram/Schema**



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## List all of the Objects, Properties, and Events

**Objects:**

- users
- companies
- ad

**Properties:**

- userId
- userName
- userAgeRange
- userGender
- userInterests
- usageTime
- companyId
- companyName
- headquarter
- revenue
- founded
- userAmount
- adId
- adType
- adFormat

**Events:**

- No Event!!!

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## SQL Code for Tables

```
CREATE TABLE users(
        userId INT,
        userName varchar,
        userAgeRange varchar,
        userGender varchar,
        userInterests varchar,
        usageTime varchar,
        companyId INT
);
\copy users(userId,userName,userAgeRange,userGender,userInterests,usageTime, companyId) FROM
'*insert spreadsheet path here*' DELIMITER ',' CSV HEADER

select * from users;



CREATE TABLE companies(
        companyId INT,
        companyName varchar,
        headquarter varchar,
        revenue varchar,
        founded date,
        userAmount varchar
);

insert into companies(companyId, companyName, headquarter, revenue, founded, userAmount) VALUES
(1, 'Facebook', 'Menlo Park, CA, US', '86 B', '2004-02-04', '2.8 B');
insert into companies VALUES (2, 'Instagram', 'Menlo Park, CA, US', '12 B', '2010-10-6', '815 M');
insert into companies VALUES (3, 'Snapchat', 'Santa Monica, CA, US', '2.5 B', '2011-09-16', '265 M');
insert into companies VALUES (4, 'Tiktok', 'Culver City, CA, US', '1 B', '2016-09-01', '500 M');
insert into companies VALUES (5, 'Twitter', 'San Francisco, CA, US', '3.7 B', '2006-03-21', '187 M');
insert into companies VALUES (6, 'Youtube', 'San Bruno, CA, US', '19.8 B', '2005-02-14', '2.3 B');

select * from companies;



CREATE TABLE ad(
        adId varchar,
        companyId INT,
        adType varchar,
        adFormat varchar
);
\copy ad(adId,companyId,adType,adFormat) FROM '*insert spreadsheet path here*' DELIMITER ','
CSV HEADER

select * from ad;
```

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## Problems + More Codes

**Questions:**

1) Which time intervals do users use social media the most?
2) Which ad type and format should each company put on their platform to attract the largest audience?

a. The 1st & 2nd output table (the entire table will be too long, so our group divides it into 2 separate tables) will show the ad type counts for each company
b. The 3rd output table will show the ad format counts for each company
c. The largest number in each row is the ad type/format that each company should apply

P.S. These 2 questions advise the companies when to put ads and which type and format of ads should be used.

**Solutions:**

1)

```
-- Counts of all time intervals
select
        usageTime,
        count(*)
        from users
Group by usageTime
Order by count(*) DESC;

-- The time interval most frequently used by users
select
        usageTime,
        count(*)
        from users
Group by usageTime
Order by count(*) DESC limit 1;
```

2)

```
-- ad type count for each company part 1
select
sum(case when adType like '%Gaming%' then 1 else 0 end) AS gamesCount,
sum(case when adType like '%Animals%' then 1 else 0 end) AS animalsCount,
sum(case when adType like '%Sports%' then 1 else 0 end) AS sportsCount,
sum(case when adType like '%Arts%' then 1 else 0 end) AS artsCount,
sum(case when adType like '%Music%' then 1 else 0 end) AS musicCount,
```

```
sum(case when adType like '%Food%' then 1 else 0 end) AS foodCount,
sum(case when adType like '%Makeup%' then 1 else 0 end) AS makeupCount,
sum(case when adType like '%Travel%' then 1 else 0 end) AS travelCount,
sum(case when adType like '%Media%' then 1 else 0 end) AS mediaCount,
sum(case when adType like '%Films%' then 1 else 0 end) AS filmsCount,
sum(case when adType like '%Novels%' then 1 else 0 end) AS novelsCount,
sum(case when adType like '%Comic%' then 1 else 0 end) AS comicsCount,
c.companyName
from ad a
inner join companies c ON
c.companyId = a.companyId
group by c.companyId,c.companyName;

-- ad type count for each company part 2
select
sum(case when adType like '%Cars%' then 1 else 0 end) AS carCount,
sum(case when adType like '%Education%' then 1 else 0 end) AS educationCount,
sum(case when adType like '%Science%' then 1 else 0 end) AS scienceCount,
sum(case when adType like '%Social services%' then 1 else 0 end) AS socialservicesCount,
sum(case when adType like '%Job%' then 1 else 0 end) AS jobCount,
sum(case when adType like '%Business%' then 1 else 0 end) AS businessCount,
sum(case when adType like '%languages%' then 1 else 0 end) AS languagesCount,
sum(case when adType like '%sponsored%' then 1 else 0 end) AS sponsoredAdsCount,
sum(case when adType like '%Marketing%' then 1 else 0 end) AS marketingCount,
sum(case when adType like '%Others%' then 1 else 0 end) AS othersCount,
sum(case when adType like '%None%' then 1 else 0 end) AS noneCount,
c.companyName
from ad a
inner join companies c ON
c.companyId = a.companyId
group by c.companyId,c.companyName;

-- ad format count for each company
select
sum(case when adFormat like '%Pop-up%' then 1 else 0 end) AS PopupCount,
sum(case when adFormat like '%Banner%' then 1 else 0 end) AS BannerCount,
sum(case when adFormat like '%Skip%' then 1 else 0 end) AS SkipAdCount,
sum(case when adFormat like '%Sponsored%' then 1 else 0 end) AS SponsoredPostCount,
sum(case when adFormat like '%Others%' then 1 else 0 end) AS OthersCount,
c.companyName
from ad a
inner join companies c ON
c.companyId = a.companyId
group by c.companyId,c.companyName;
```