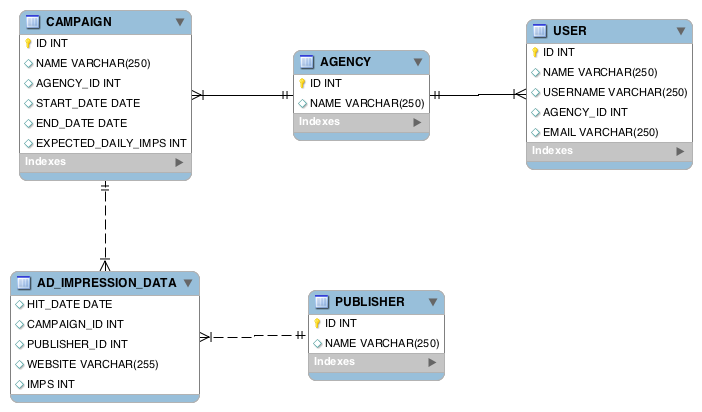
Like other advertising media, online advertising frequently involves the following entities

* A publisher, who integrates advertisements into its online content.
* An advertiser, who provides the advertisements to be displayed on the publisher’s content.
* Advertising agencies that help execute the online ad campaigns for advertisers by placing them on websites through their publisher channels.

The 'ad\_campaign' database has the AGENCY, CAMPAIGN & PUBLISHER tables to represent the above. AD\_IMPRESSION\_DATA contains information about how the ad campaigns are doing on a daily basis - how many online advertisements were served, to which websites and through which publisher. Logins are provided to agencies to view reports on their campaigns, and this information is stored in the USER table. The following ER diagram represents this relationship:



Derive answers for the following questions, using not more than one SQL statement per question. You can use the Sequel Pro client installed on this computer to try out your SQL statements. Provide your answers below each question.

1. Create the 4 tables shown in the ER diagram above
2. Load data from test/ad\_campaign\_data/\* files into the respective tables
3. Insert a user with the following information into the USER table
   1. Gary Turner
   2. username: gtuner
   3. email: gturner@mindshare.com
   4. agency: Mindshare
4. Update the name of Publisher “Media6” to “Distillery”
5. Update all the dates in AD\_IMPRESSION\_DATA from 2013 to 2016
6. Delete the user you created in #3
7. List all the tables in the ad\_campaign database
8. Find the field descriptions of the PUBLISHER table
9. Show the create table statement of AD\_IMPRESSION\_DATA
10. What is the current date and time?
11. List all the campaigns with expected daily impressions less than 1000 but greater than 200. Use human readable alias for the column names.
12. List the names of these publishers : 10, 12, 14, 16, 18
13. List the Name and Usernames from USER table in this format : “Name - Username”
14. List no. of agencies in the AGENCY table
15. What is the total no. of impressions served for Campaign Id 100
16. Find the ID for Publisher “Tube Mogul”
17. Find all the Publishers whose names start with “C”
18. List the Agency Ids along with the no. of users in each agency. Result should contain two columns: Agency\_Id, No\_Of\_Users
19. Get the following report. Do not include publishers who served less than 100 impressions.
    1. campaign
    2. publisher
    3. no. of impressions
20. Make a list of all campaigns, sorted by their names in ascending order, and expected daily impressions in reverse order
21. List publishers who have served ads to more than 115 sites in the month of June
22. List all the sites (without repetition) that were served ads between '2016-04-01' and ‘2016-04-30'
23. List the top 5 campaigns by volume for the month of July
24. What is wrong with the following SQL statement, which is trying to figure out campaign impressions by date for the month of Marth ?

SELECT HIT\_DATE, CAMPAIGN\_ID, SUM(IMPS)

FROM AD\_IMPRESSION\_DATA

WHERE HIT\_DATE>='2016-03-01' and HIT\_DATE<='2016-03-30'

GROUP BY CAMPAIGN\_ID;