This is my python script to create the user relation:

```
#Kevin Gomes
#Final Project
#CSC 436
#05/01/2018

#This script simply creates our "users" relation. Each user simply has 1 ID, their UID.
#This script extracts each user from the original data (marked as "C"),
#and retrieves their ID and stores it in a new CSV file called "msuser.csv"

import csv



#Open the original file
with open('msweb.csv', 'rb') as oFile:

    #Create a reader that we will use to get the specific cells in the table
    reader = csv.reader(oFile)

    #Create our new file we will write to. Note the oFile is still open.
    with open('msuser.csv', 'wb') as user:

        #Create our writer
        writer = csv.writer(user)

        #Go through every item and look for the first cell in a row containing "C".
        #If so, take the value in the next cell (their ID) and put that in our new table.
        for row in reader:

            #Items are type, ID, and duplicate ID.
            #If the row is a user, get the duplicate ID from that row and write it
            if row[0] == 'C':
                writer.writerow([row[2]])
```

This is my python script to make the vroot relation:

```
#Kevin Gomes
#Final Project
#CSC 436
#05/01/2018

#This script simply creates our "vroot" relation. Each vroot has a unique ID,
#the title of that location and the relative URL (in relation to www.microsoft.com)
```

```
#This script extracts each vroot from the original data (marked as "A"),
#and retrieves their info and stores it in a new CSV file called "msvroot.csv"

import csv



#Open the original file
with open('msweb.csv', 'rb') as oFile:

    #Create a reader that we will use to get the specific cells in the table
    reader = csv.reader(oFile)

    #Create our new file we will write to. Note the oFile is still open.
    with open('msvroot.csv', 'wb') as vroot:

            #Create our writer
            writer = csv.writer(vroot)

            #Go through every item and look for the first cell in a row containing "A".
            #If so, take the values in the next cells (their title and URL)
            # and put that in our new table.
            for row in reader:

                    if row[0] == 'A':
                            writer.writerow([row[1], row[3], row[4] ])

                    #Items are type (ignore), VID, number 1 (ignore), title, and relative URL
                    #If the row is a vroot/attribute,
                    # get the info and write it.
```

Finally, here is my SQL code. Most of it is commented out to avoid danger of running everything, but simply remove the -- before a line to run it.

```
/*
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This is SQL code to be run in a PSQL database. We use "\i" followed by the filename
 "SQL.sql" to run all of this code at once. We then comment lines we don't wish
to run as we go.
```

```
*/

-- In case we have tables, remove them.
-- DROP TABLE "user";
-- DROP TABLE "vroot";

--Start creating the first table.
-- CREATE TABLE  "user" (uid    int PRIMARY KEY NOT NULL);

-- Copy all the data we collected from python scripts into our relation
-- \COPY "user" FROM '/home/kevin/Desktop/msuser.csv' delimiter ',' csv;

-- Repeat the above for the next relation
-- CREATE TABLE "vroot" (vid    int PRIMARY KEY NOT NULL,
--    title    varchar(255),
--    url              varchar(255));
-- \COPY "vroot" FROM '/home/kevin/Desktop/msvroot.csv' delimiter ',' csv;

-- Now let's run some tests. First, let's see if we can even select the data.
-- SELECT * FROM "user";
-- SELECT * FROM "vroot";

-- Great, now let's actually try some REAL queries out. Get all VIDs from 1200 - 1250
-- SELECT vid FROM "vroot" WHERE vid > 1200 AND vid < 1250 ORDER BY vid;

--Do the same for UIDs, but the range is now in 10s of thousands
-- SELECT uid FROM "user" WHERE uid > 12000 AND uid < 12500 ORDER BY uid;

-- Let's spice it up. Get the first 10 titles, ordered by VID. First 10 titles created...
-- SELECT title FROM "vroot" ORDER BY vid LIMIT 10;

-- Now get all titles that have the word "Microsoft" or 'MS' in it. Microsoft stuff :)
-- SELECT * FROM "vroot" WHERE title LIKE '%Microsoft%' OR title LIKE '%MS%';
```