

AD CAMPAIGN

A campaign in the social media world is a promotional campaign that a media agency runs on social media networks on behalf of a client.



'LEARNING PYTHON' BY FABRIZIO ROMANO

Packed Publisher 2015

Textbook on O'Reilly DB (Chapter 9. Data Science):

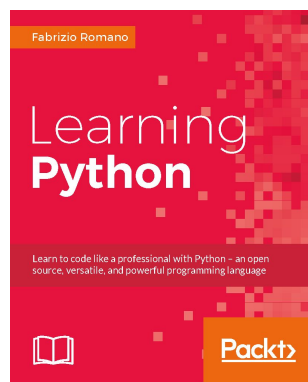
<https://learning.oreilly.com/library/view/learning-python/9781783551712/ch09.html>

Download the notebook:

<https://github.com/PacktPublishing/Learning-Python/tree/master/ch9>

Baruch O'Reilly DataBase:

<https://guides.newman.baruch.cuny.edu/databases/0-P>



PRESENT. EXPLAIN. ANY BUGS? IMPROVE.

Team 1-2

0 - Setting Up. Overview. Intro.

Team 3-4

1 - Preparing the data.

Team 5-7

2 - Cleaning the data.

Teams 8-10

3 - Manipulating the DataFrame.

4 - Saving the data. JSON.

Teams 11-13

5 - Visuals. Aggregation.

1. PREPARE THE DATA

1,000 USERS

60% FEMALE

2 TO 8 CAMPAIGNS PER USER

{ 'USER' :



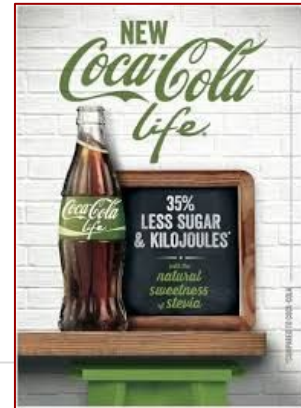
```
{ "name": "Courtney Gray",  
  "username": "cgray",  
  "gender": "F",  
  "age": 32,  
  "email": "cgray@gmail.com",  
  "address": "18 McDonald Lodge,  
             Suite 804,  
             Kevinview  
             VA 72525-2764" },
```

'CAMPAIGNS':

```
[ { "name": "CPC_20170912_20190808_30-35_M_USD",  
    "budget": 20,000,  
    "spent": 5,000,  
    "impressions": 2,000,  
    "clicks": 10 },
```



```
{ "name": "CPC_20160911_20171123_30-35_F_USD",  
  "budget": 50,000,  
  "spent": 30,000,  
  "impressions": 80,000,  
  "clicks": 400 } ] }
```



PSEUDOCODE FOR PREPARING THE DATA

1. Create a set of 1,000 usernames (strings).
2. Create a list of user dictionaries, 60% female.
3. Create a campaign dictionary.
4. Create a list of dictionaries. Each of these dictionaries should contain a single user dictionary and 2-8 campaign dictionaries.

2. CLEAN THE DATA

2.1 DENORMALIZE DATA AND CREATE DATAFRAME *DF*

	cmp_bgt	cmp_clicks	cmp_impr	cmp_name	cmp_spent	user
0	514153	63728	499999	CPC_20170516_20180815_40-45_B_EUR	63463	{"email": "robinmorse@gmail.com", "address": "...
1	373169	50510	500003	CPC_20160710_20170702_40-55_B_EUR	56134	{"email": "robinmorse@gmail.com", "address": "...
2	785336	79412	500001	CPC_20151214_20160925_25-30_F_EUR	721013	{"email": "michelle30@olson.info", "address": ...
3	529800	35141	500000	CPM_20171025_20180208_20-35_F_GBP	381344	{"email": "michelle30@olson.info", "address": ...
4	223708	95726	500000	CPM_20151207_20161216_35-50_F_GBP	264	{"email": "michelle30@olson.info", "address": ...

3. MANIPULATE THE DATA

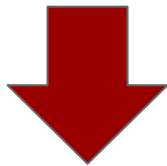
UNPACK THE CAMPAIGN NAME

CPM_20160704_20170216_25-40_B_EUR

CPA_20170516_20180719_40-55_M_USD

CPM_20160522_20170321_35-50_M_USD

...



	Type	Start	End	Age	Gender	Currency
0	CPM	2016-04-07	2017-02-16	25-40	B	EUR
1	CPA	2017-05-16	2018-07-19	40-55	M	USD
2	CPM	2016-05-22	2017-03-21	35-50	M	USD

...

UNPACK USER DATA

```
{'address': '93866 Mcknight Ranch\nCortezmouth, NH 01609',  
  'age': 38,  
  'email': 'fischermaria@gmail.com',  
  'gender': 'M',  
  'name': 'Juan Cooper DVM',  
  'username': 'matthew37'}
```



	username	email	name	gender	age	address
0	matthew37	fischermaria@gmail.com	Juan Cooper DVM	M	38	93866 Mcknight Ranch\nCortezmouth, NH 01609
1	matthew37	fischermaria@gmail.com	Juan Cooper DVM	M	38	93866 Mcknight Ranch\nCortezmouth, NH 01609

CALCULATE NEW COLUMNS



Click Through Rate (CTR) = Clicks / Impressions

Cost Per Click (CPC) = Spent / Clicks

Cost Per Impression (CPI) = Spent / Impressions

MORE NEW COLUMNS

Monday
Tuesday
Wednesday
...

Campaign start – day of the week.



Campaign duration in days.

4. SAVE OUR DATAFRAME TO A FILE IN DIFFERENT FORMATS.



{JSON}



JavaScript Object Notation
is a format for structuring data

5. VISUALIZE.

EXPLORE.

AGGREGATE.

OUR INTERESTS..

Visualize campaign metrics:

Impressions, Clicks, Budget, Spent

- where we've spent three quarters of the budget.
- by day of the week.
- by target age group.

