

Project

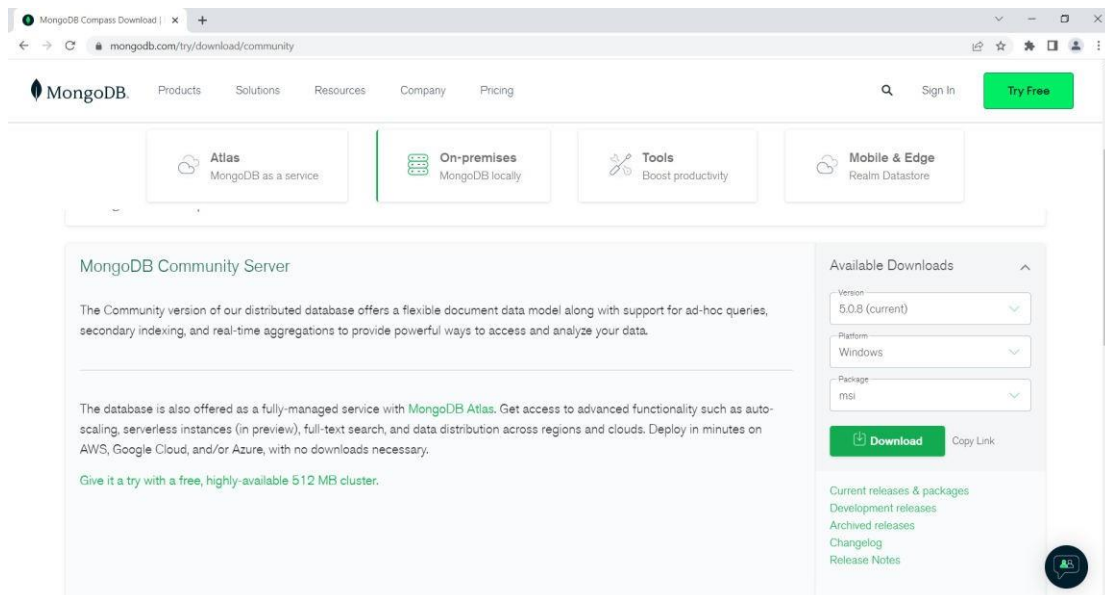
Εφαρμοσμένα Θέματα Δομών και Βάσεων Δεδομένων.

Παναγιώτης Χρονόπουλος , AM : 321/2015222

1)Εγκατάσταση της MongoDB.

Παρακάτω έχω το λίνκ για να κατεβάσω το αρχείο εγκατάστασης της MongoDB και μία εικόνα στην οποία βλέπουμε την ιστοσελίδα που κατέβασα το αρχείο εγκατάστασης.

<https://www.mongodb.com/try/download/community>



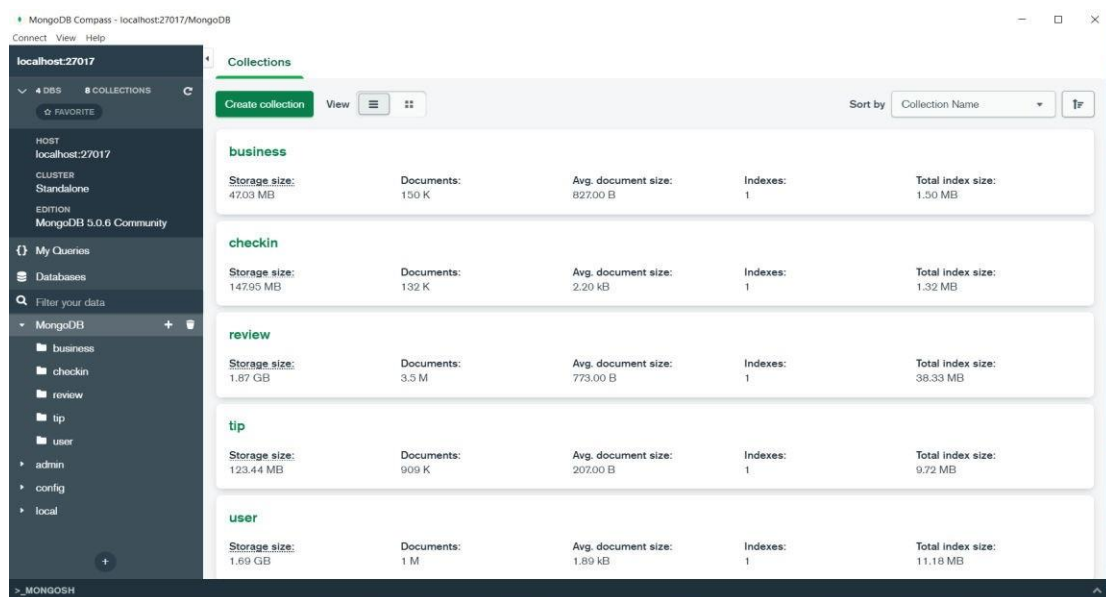
Στην παρακάτω εικόνα βλέπουμε το αρχείο που κατέβασα για να εγκαταστήσω την MongoDB.



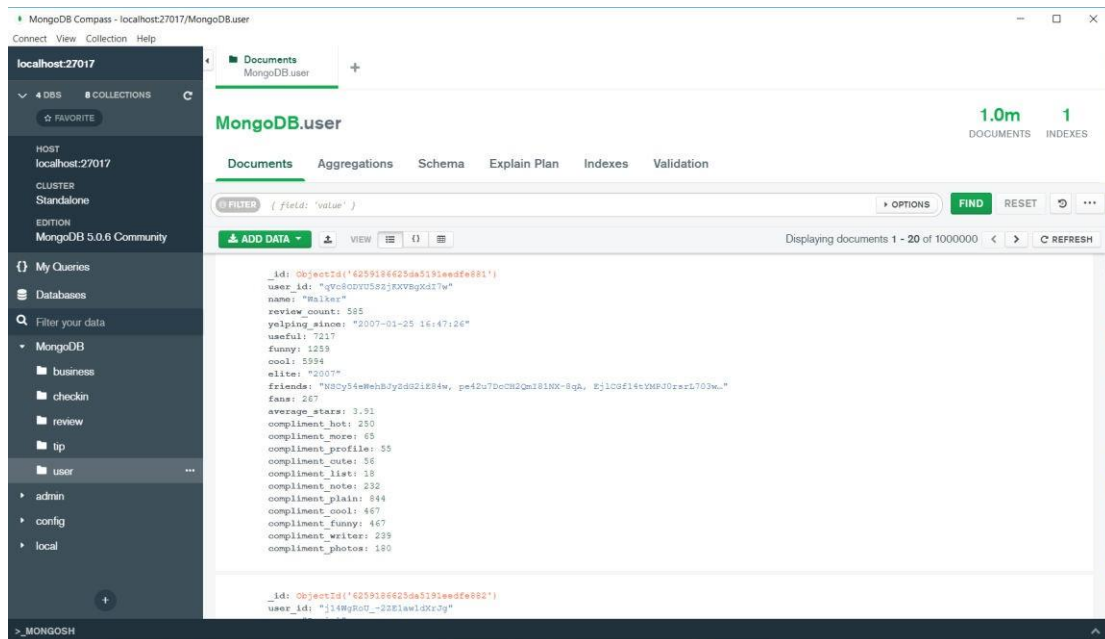
Στην παρακάτω εικόνα βλέπουμε τα δύο εικονίδια της MongoDB στην επιφάνεια εργασίας του υπολογιστή.



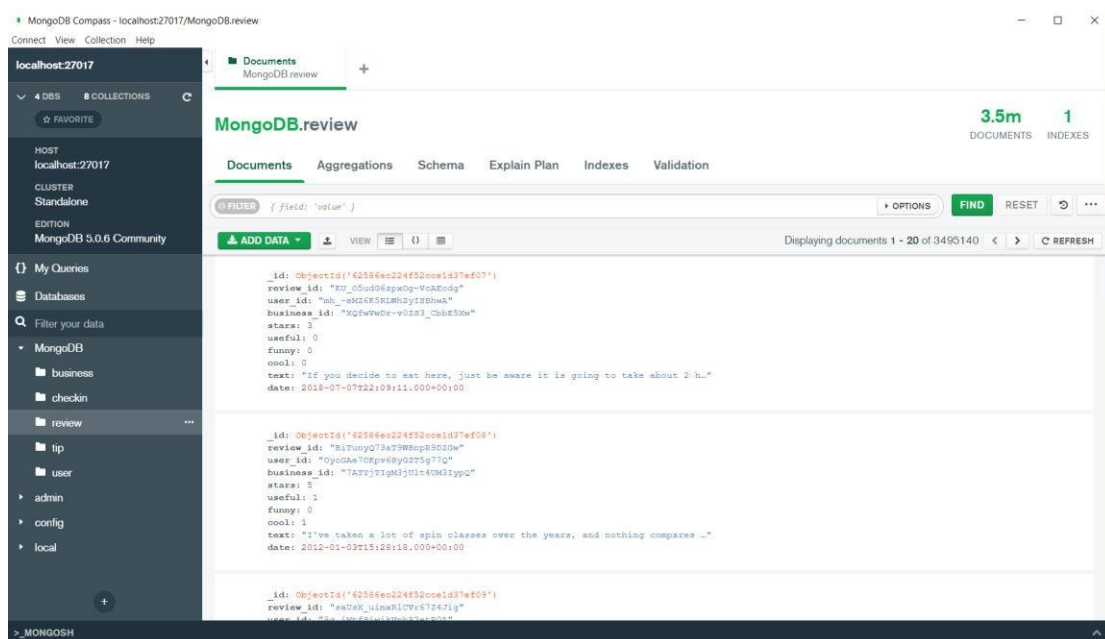
Στην παρακάτω εικόνα βλέπουμε την βάση δεδομένων με ονομασία MongoDB με τα 5 collections : user , review , business , checkin , tip.



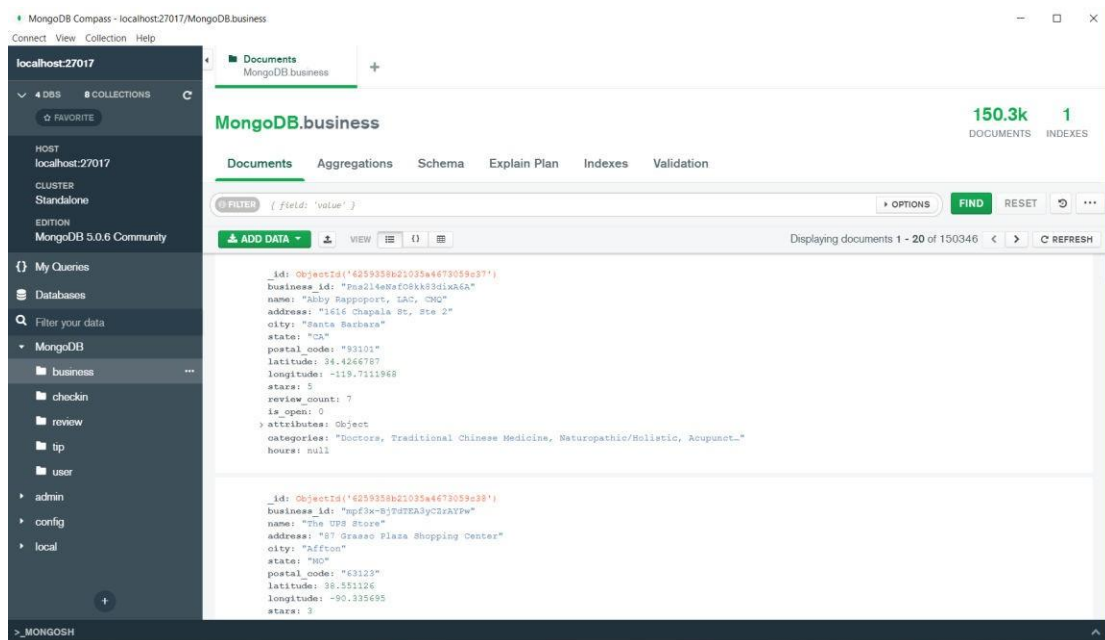
Στην παρακάτω εικόνα βλέπουμε τις εγγραφές του collection : user.



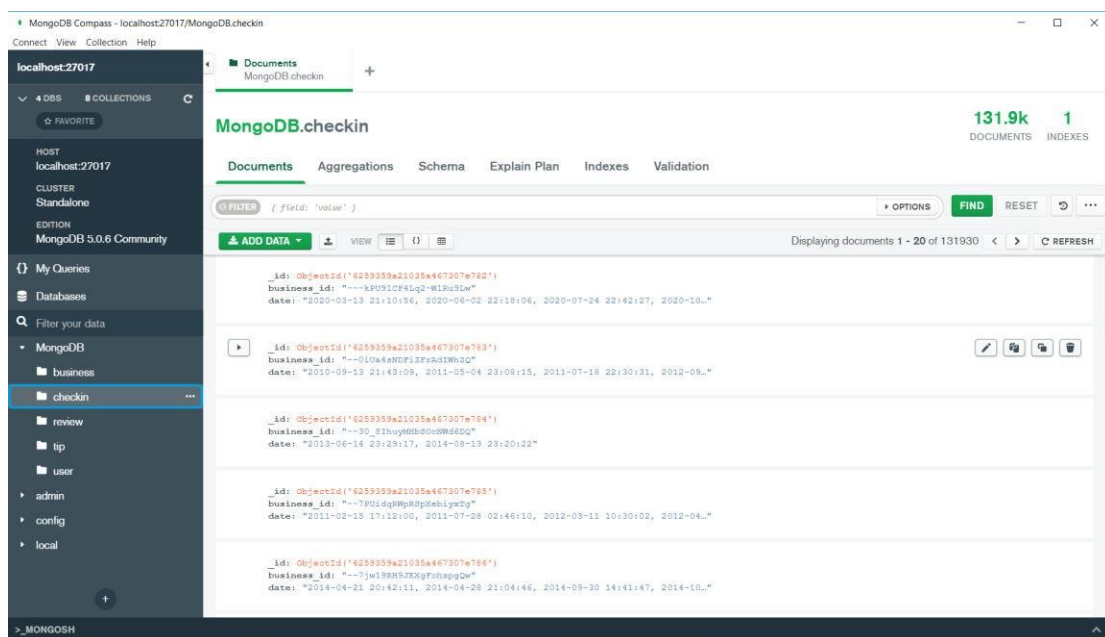
Στην παρακάτω εικόνα βλέπουμε τις εγγραφές του collection : review.



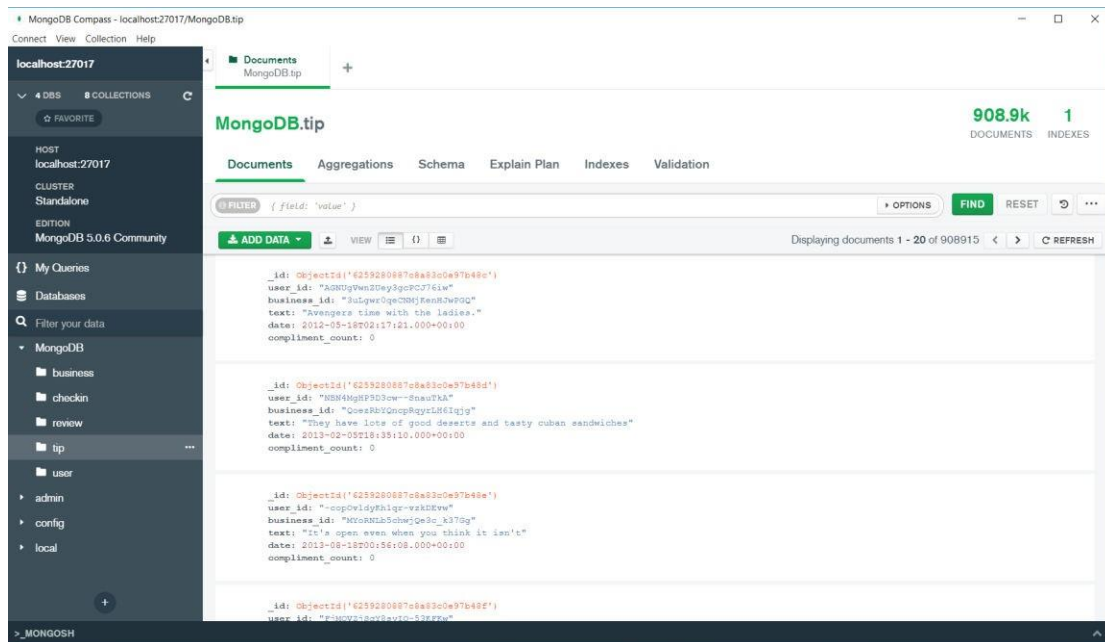
Στην παρακάτω εικόνα βλέπουμε τις εγγραφές του collection : business.



Στην παρακάτω εικόνα βλέπουμε τις εγγραφές του collection : checkin.



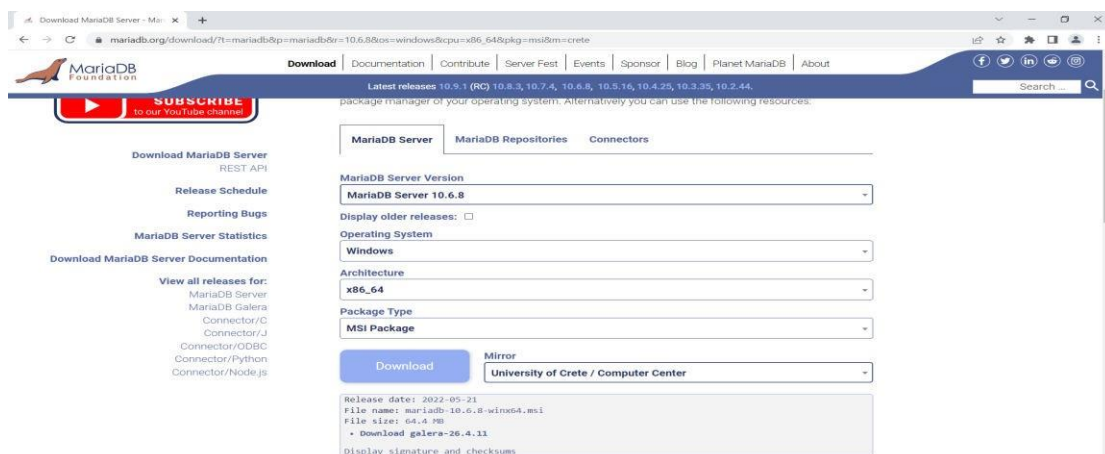
Στην παρακάτω εικόνα βλέπουμε τις εγγραφές του collection : tip.



2) Εγκατάσταση της MariaDB.

Παρακάτω έχω το λίνκ για να κατεβάσω το αρχείο εγκατάστασης της MariaDB και μία εικόνα στην οποία βλέπουμε την ιστοσελίδα που κατέβασα το αρχείο εγκατάστασης.

https://mariadb.org/download/?t=mariadb&p=mariadb&r=10.6.8&os=windows&cpu=x86_64&pkg=msi&m=crete



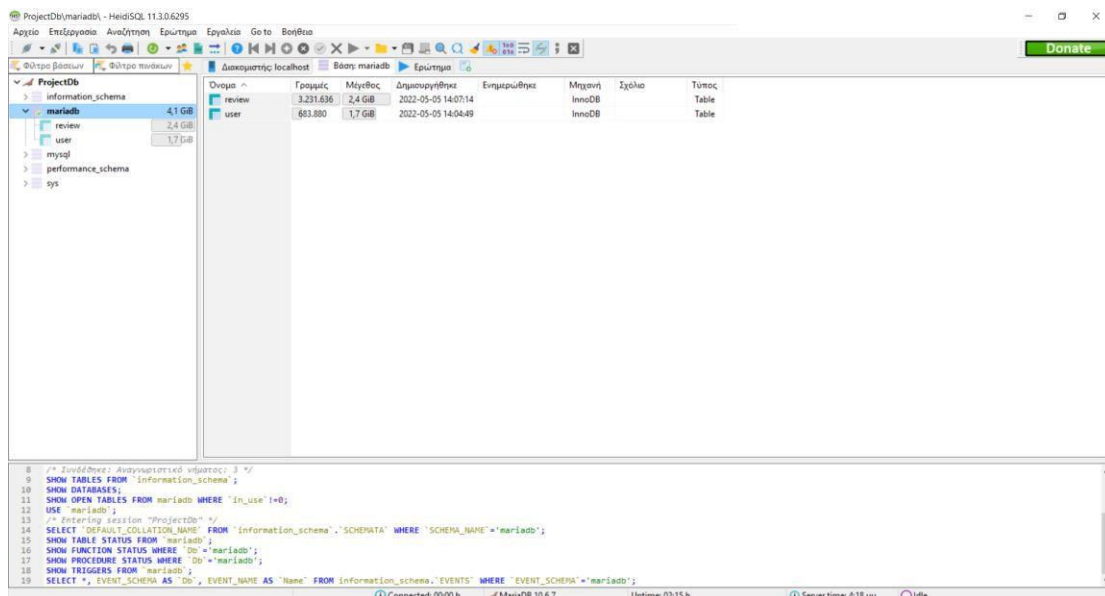
Στην παρακάτω εικόνα βλέπουμε το αρχείο που κατέβασα για να εγκαταστήσω την MariaDB.



Στην παρακάτω εικόνα βλέπουμε το εικονίδιο της MariaDB στην επιφάνεια εργασίας του υπολογιστή.



Στην παρακάτω εικόνα βλέπουμε την βάση δεδομένων με ονομασία MariaDB με τα 2 tables : user , review.



Στην παρακάτω εικόνα βλέπουμε το table : user.

ProjectDB/mariadb/user - HeidiSQL 11.3.0.6295

Αρχείο Επεξεργασία Αναζήτηση Ερωτήματα Εργαλεία Go to Βοήθεια

Φίλτρο βάσεων Φίλτρο πινάκων Διακομιστής localhost Βάση mariadb Πίνακας user Δεδομένα Ερωτήματα

ProjectDB
 information_schema 4.1 GB
 mariadb 2.4 GB
 review 1.7 GB
 mysql
 performance_schema
 sys

Όνομα: user
 Σχόλιο:

Στήλες Προσθήκη Διαγραφή Up Down

#	Όνομα	Τύπος δεδομένων	Μήκος/Ζώνη...	Χωρίς...	Με σ...	Προεπιλογή	Σχόλιο	Collation	Εκφραση	Εκκωδικοποίηση
1	user_id	VARCHAR	30	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		utf8mb4_general_ci		
2	name	VARCHAR	200	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		utf8mb4_general_ci		
3	review_count	INT	11	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
4	yelping_since	DATETIME		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
5	useful	INT	11	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
6	funny	INT	11	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
7	cool	INT	11	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
8	elite	VARCHAR	200	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		utf8mb4_general_ci		
9	friends	TEXT		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		utf8mb4_general_ci		
10	average_stars	FLOAT		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
11	compliment_note	INT	11	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
12	compliment_more	INT	11	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
13	compliment_profile	INT	11	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
14	compliment_cute	INT	11	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
15	compliment_list	INT	11	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
16	compliment_note	INT	11	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
17	compliment_plain	INT	11	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
18	compliment_cool	INT	11	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
19	compliment_funny	INT	11	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
20	compliment_writer	INT	11	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
21	compliment_photos	INT	11	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				

28 SELECT * FROM 'mariadb'.'user' ORDER BY 'compliment_note' ASC, 'compliment_list' DESC, 'compliment_cool' ASC, 'user_id' DESC LIMIT 1000;
 29 SHOW TABLE STATUS LIKE 'user';

Connected: 00:03 h MariaDB 10.6.7 Uptime: 02:18 h Server time: 4:21 μs Idle.

Στην παρακάτω εικόνα βλέπουμε τις εγγραφές του table : user.

ProjectDB/mariadb/user - HeidiSQL 11.3.0.6295

Αρχείο Επεξεργασία Αναζήτηση Ερωτήματα Εργαλεία Go to Βοήθεια

Φίλτρο βάσεων Φίλτρο πινάκων Διακομιστής localhost Βάση mariadb Πίνακας user Δεδομένα Ερωτήματα

ProjectDB
 information_schema 4.1 GB
 mariadb 2.4 GB
 review 1.7 GB
 mysql
 performance_schema
 sys

mariadb.user: 683.880 rows total (approximately), limited to 1.000

Επόμενο Εμφάνιση όλων Τολύνση (4) Columns (22/22) Φίλτρο

user_id	name	review_count	yelping_since	useful	funny	cool	elite	friends	average_stars
MEYH0F550ZgbHys_Xug	Rob	49	2006-06-28 21:38:06	71	8	17			3.83
k3skY2HCQZUyG5u0Byg	Mathew	10	2007-08-22 15:39:38	55	13	21			3.67
YqzyUch5IO7B7yGk3-Mw	Sophia	2	2012-12-21 20:36:57	0	0	0			4.5
X35sqW2uc4QZK3wT5Lzg	Nanye	30	2015-07-13 00:09:36	27	7	5			3.39
wHFc9duhCR9Gmymdy0-vw	Jennifer	14	2012-11-21 23:27:37	12	1	2			4.07
uLkue6FTBv-0wZUK7dJ	Julie	25	2007-02-15 04:36:57	22	5	15			4.06
JoakY5Mct0PF9EX0Hu0SA	Ash	34	2008-07-30 05:37:08	47	8	19			3.33
bm33xpG9h8K0Q0N8Aldg	Daniella	14	2010-04-06 02:40:15	33	8	4			2.18
5ydyh3Hn0Kum9hAlpTFQ	Dan	212	2011-04-27 15:11:38	213	47	71			2.42
e_Ma665K8gTgDAmPZBFKw	Tennus	66	2015-10-07 17:07:03	37	9	22			3.99
eBP9gYWbn-Dx3Wv-ELAQ	Yi	120	2008-01-02 02:33:50	249	56	83			4.13
00XMY_F5WU0mLWn8Z9wQ	May	21	2008-01-28 05:38:32	30	10	9			3.86
ZnYNAH4Gm55yCrd2wAdfg	Jen	76	2008-03-29 18:51:48	200	43	101			4.6
z-zV8e9g0V8VuyC8Yug	Kelsey	32	2015-01-27 08:41:36	38	14	7			3.15
Z25Luh7YgZCTaCuV2dg	Karen	18	2016-04-16 07:25:00	47	4	7			3.25
zV58P7pYy6H88wCv0CNg	Andres	9	2016-08-27 06:29:27	3	0	1			4.67
z0cx4mmEz4e0BF-uj0JA	Mike	12	2012-03-04 18:04:30	13	2	1			3.56
ZFXKmwG5tK3Kw8eFria	Esther	61	2013-06-24 01:50:20	12	7	6			3.94
zF0xV5h-1zK3ML5avQOQ	Brian	20	2009-03-15 00:36:17	16	2	10			4.3
Y5dNpQ_gn8g9SVnFeg2g	Ann	6	2015-10-17 22:22:42	11	1	1			None
yqz_T1aRvnrFE9v5g6A	Ardehan	15	2011-07-08 21:54:12	13	1	2			3.27
YqyWnG0K8K0e0v5Th_n8Q	Kathy	38	2014-02-17 15:21:55	52	5	8			3.73
YQPe9eR83maLcQ8BNV8g	Manny	29	2012-09-27 23:33:23	19	5	9			4.47
x_Ku0y0C5v1E7Olygsa	Heather	25	2009-09-26 19:16:55	31	4	8			4.36
Yw_JHVu177d0Z4M4F9Bhg	Mari	35	2006-08-16 16:51:28	59	13	8			3.62
xUu9p8BAY05ce9p8q4	Dylan	6	2015-02-13 21:04:12	21	7	4			3
XTWk8h3g-0XDK0uAJAZA	Andy	5	2007-10-19 01:04:59	2	1	3			4.6
XTK6dPP8R864u5AP-dA	Leura	27	2013-08-30 16:36:56	17	2	4			3.83
XTZmPnUf_KfK6AJAL5G8uQ	diana	14	2009-12-23 05:16:00	29	2	3			4
up9d8Xj_jm34TfG3z0u6A	Barclay	3	2010-11-21 20:50:50	1	0	0			4

28 SELECT * FROM 'mariadb'.'user' ORDER BY 'compliment_note' ASC, 'compliment_list' DESC, 'compliment_cool' ASC, 'user_id' DESC LIMIT 1000;
 29 SHOW TABLE STATUS LIKE 'user';

1:1 c1 Connected: 00:03 h MariaDB 10.6.7 Uptime: 02:18 h Server time: 4:21 μs Idle.

Στην παρακάτω εικόνα βλέπουμε το table : review.

#	Όνομα	Τύπος δεδομένων	Μήκος/Ζώνη...	Χωρίς...	Να ειν...	Με σ...	Προεπιλογή	Σχόλιο	Collation	Εκφραση	Εξωνυστήριο
1	review_id	VARCHAR	50	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	NULL		utf8mb4_general_ci		
2	user_id	VARCHAR	50	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	NULL		utf8mb4_general_ci		
3	business_id	VARCHAR	50	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	NULL		utf8mb4_general_ci		
4	stars	INT	11	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	NULL				
5	useful	INT	11	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	NULL				
6	funny	INT	11	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	NULL				
7	cool	INT	11	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	NULL				
8	text	TEXT		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	NULL		utf8mb4_general_ci		
9	date	DATETIME		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	NULL				

```
17 SHOW PROCEDURE STATUS WHERE `db`='mariaadb';
18 SHOW TRIGGERS FROM `mariaadb`;
19 SELECT *, EVENT_SCHEMA AS `db`, EVENT_NAME AS `Name` FROM information_schema.EVENTS WHERE EVENT_SCHEMA='mariaadb';
20 SELECT * FROM information_schema.COLUMNS WHERE TABLE_SCHEMA='mariaadb' AND TABLE_NAME='user' ORDER BY ORDINAL_POSITION;
21 SHOW INDEXES FROM `user` FROM `mariaadb`;
22 SELECT * FROM information_schema.REFERENTIAL_CONSTRAINTS WHERE CONSTRAINT_SCHEMA='mariaadb' AND TABLE_NAME='user' AND REFERENCED_TABLE_NAME IS NOT NULL;
23 SELECT * FROM information_schema.KEY_COLUMN_USAGE WHERE TABLE_SCHEMA='mariaadb' AND TABLE_NAME='user' AND REFERENCED_TABLE_NAME IS NOT NULL;
24 SHOW ENGINES;
25 SHOW COLLATION;
26 SHOW CREATE TABLE `mariaadb`.`user`;
27 SELECT CONSTRAINT_NAME, CHECK_CLAUSE FROM `information_schema`.`CHECK_CONSTRAINTS` WHERE CONSTRAINT_SCHEMA='mariaadb' AND TABLE_NAME='user';
28 SELECT * FROM `mariaadb`.`user` ORDER BY `comment_note` ASC, `comment_list` DESC, `comment_cool` ASC, `user_id` DESC LIMIT 1000;
29 SHOW TABLE STATUS LIKE `user`;
30 SELECT * FROM information_schema.COLUMNS WHERE TABLE_SCHEMA='mariaadb' AND TABLE_NAME='review' ORDER BY ORDINAL_POSITION;
31 SHOW INDEXES FROM `review` FROM `mariaadb`;
32 SELECT * FROM information_schema.REFERENTIAL_CONSTRAINTS WHERE CONSTRAINT_SCHEMA='mariaadb' AND TABLE_NAME='review' AND REFERENCED_TABLE_NAME IS NOT NULL;
33 SELECT * FROM information_schema.REFERENTIAL_CONSTRAINTS WHERE TABLE_SCHEMA='mariaadb' AND TABLE_NAME='review' AND REFERENCED_TABLE_NAME IS NOT NULL;
34 SHOW CREATE TABLE `mariaadb`.`review`;
35 SELECT CONSTRAINT_NAME, CHECK_CLAUSE FROM `information_schema`.`CHECK_CONSTRAINTS` WHERE CONSTRAINT_SCHEMA='mariaadb' AND TABLE_NAME='review';
36 SELECT * FROM `mariaadb`.`review` LIMIT 1000;
37 SHOW TABLE STATUS LIKE `review`;
```

Στην παρακάτω εικόνα βλέπουμε τη εγγραφές του table : review.

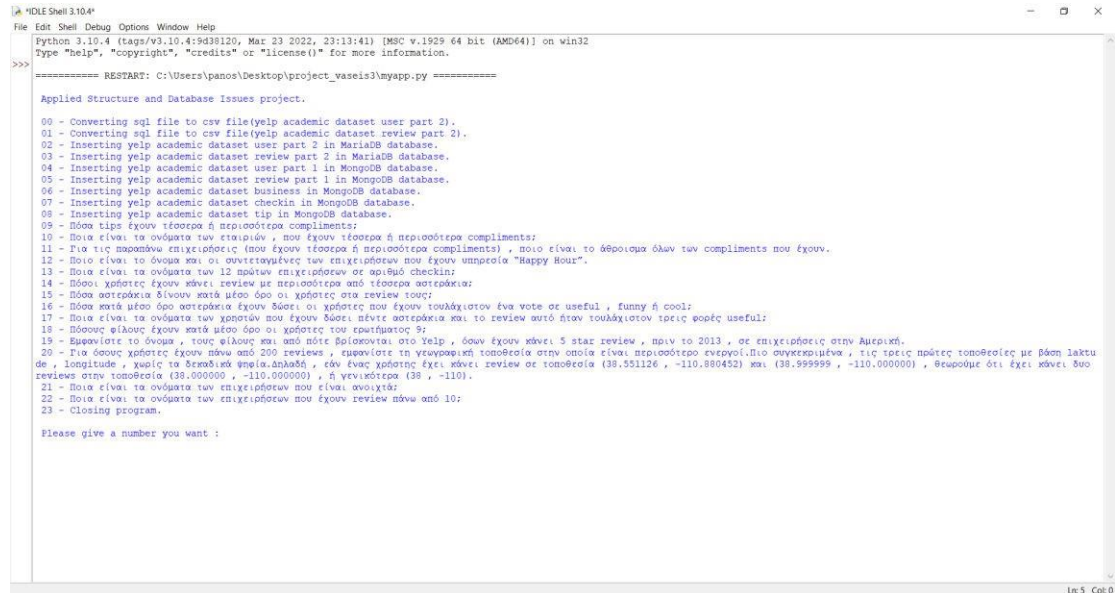
review_id	user_id	business_id	stars	useful	funny	cool	text	date
1029w0AN4K4QdUccatIQ	bofZT7WpG8PHgIQO4lwg	OW00c0vYU_kioLefgoSVCA	5	0	0	0	I have been to loveless several times now and it has...	2014-03-14 19:43:25
Yalr5PVVbz2umzKUMQ	luoid4PysXg2bQCeqQ	EyoA7Zw9Dz0j6pMAQQLTA	5	0	0	0	"what a wonderful oasis in the desert! We went for...	2015-01-04 02:15:35
7NG551_VIZdL_RLZ2tg	UBQtz3kwnvEkCIQp48BQ	14QPS10drTAVjCDDuHAIUg	5	0	0	0	Really good, casual, inexpensive. Definitely would g...	2016-01-04 13:38:17
ct-5ZQBmN0pKJyGw7dA	LMvGr9_gUhwvO2B5SMQ	7HHSneBinkv2A7B8d0PA	2	0	0	0	Not sure what happened, but wow... last night's di...	2018-03-04 14:32:28
-5QkavZOPM5vqHtqkw	vnnZD3SLMkUeH4m0w	0wQ2K1w5_LfN7JtUd0A	4	0	0	0	I had a fantastic meal at the sushi bar at Ahu. I had t...	2014-08-11 02:38:42
2A1R6wH4wv-dyRMAabg	8nBACQ5v4wZ10T0T7g	17_3QkM5P9CZVTY-X3BA	5	1	0	0	Read the recommendation on here that was stellar...	2015-11-06 00:04:05
pa19dLg7nCc_7AG3dw	257b6qJwT1Guc6ZT0bw	1aM4Z7SPYQMSQGV0W0dQ	5	4	0	4	"So, after writing my previous review, I received a li...	2012-06-26 03:16:55
22dNvA1pK5p3v9eH5A	nMcV3UyLV1m0rlydA3QdQ	WfK5x4p081VhVtYq2efg	5	0	0	0	This is definitely the best brunch restaurant in Pinell...	2016-01-04 16:20:15
WwUdIdVp_B4hBfHdQ	gpcE5hwgvU24b31Z2pa	G6EjPH4QZNOvGW1T5d5g	4	0	0	0	Lunch specials are great! Low price for a lot of food...	2012-02-01 17:18:51
ugo7yLp_6FNLeqK6BQ	KoIdad0_AKwWu4KMjKQ	FC03dL7N8XV-RzGdU0jgmA	5	0	0	0	This little gem is fantastic. It is everything that is rig...	2018-08-24 03:18:01
YyPR7HMRzbPFGmbpA	OgmymfOynCecqKvAp0g	17eDfZLh1wZlcc0UfKw	5	1	0	0	Was always a big fan of Hungry Bear when it was in...	2015-12-21 01:00:55
1eM4bBafj-tdL_u0VUKKQ	39vg_7BRNvq2W5u0NQw	LFyuvov0CHg84y0X5BPA	4	0	0	0	3.75 Roll was good. Meat was chopped. I am a chee...	2014-05-07 21:37:54
HNA4Gev5RT6od_BfArYQ	-YXBKT3tAzt1UNKL1mw0A	ZDV0ecQ5e6dMw011uxCQ	4	1	0	0	Enjoyed everything we ordered. Chicken and dumpli...	2014-10-12 00:00:11
PvL1nYXLnLd8RQzU3A	644f88EBhcvRdytVGeQ	U_U6C9AF7xmQJTUF9aKQ	4	1	0	0	"Got weathered in at Clearwater Beach during a yac...	2017-05-13 17:25:52
P8B5pE0UFPd0yK3dAw	ZD6v3KQHyenVd0yJfJg	24Cm4TOWWf-0Q2anVpQ	5	2	0	0	I wish I could choose more than 5 stars! This place...	2014-11-30 21:30:34
3BTUQZn7ZAGET68B9HCw	GE4dAwmy3hgUvLYFHzZg	WWpJ7p0hUQ8BvCZ2gqCQ	1	0	0	0	This place is very over priced and the food was barel...	2017-01-28 02:04:46
5f2t8D506607H4BQdJw	-U9HdZGTuaxNvKfK9w	wRMdZ5J4tUAQZ0v4hQ	3	3	0	3	"Fresh Market fills a need in Sedro, offering a simil...	2013-06-24 18:56:27

```
12 USE `mariaadb`;
13 /* Entering session "ProjectDb" */
14 SELECT DEFAULT_COLLATION_NAME FROM `information_schema`.`SCHEMATA` WHERE `SCHEMA_NAME`='mariaadb';
15 SHOW TABLE STATUS FROM `mariaadb`;
16 SHOW FUNCTION STATUS WHERE `db`='mariaadb';
17 SHOW TRIGGERS FROM `mariaadb`;
18 SHOW PROCEDURE STATUS WHERE `db`='mariaadb';
19 SELECT *, EVENT_SCHEMA AS `db`, EVENT_NAME AS `Name` FROM information_schema.EVENTS WHERE EVENT_SCHEMA='mariaadb';
20 SELECT * FROM information_schema.COLUMNS WHERE TABLE_SCHEMA='mariaadb' AND TABLE_NAME='user' ORDER BY ORDINAL_POSITION;
21 SHOW INDEXES FROM `user` FROM `mariaadb`;
22 SELECT * FROM information_schema.REFERENTIAL_CONSTRAINTS WHERE CONSTRAINT_SCHEMA='mariaadb' AND TABLE_NAME='user' AND REFERENCED_TABLE_NAME IS NOT NULL;
23 SELECT * FROM information_schema.REFERENTIAL_CONSTRAINTS WHERE TABLE_SCHEMA='mariaadb' AND TABLE_NAME='user' AND REFERENCED_TABLE_NAME IS NOT NULL;
24 SHOW ENGINES;
25 SHOW COLLATION;
26 SHOW CREATE TABLE `mariaadb`.`user`;
27 SELECT CONSTRAINT_NAME, CHECK_CLAUSE FROM `information_schema`.`CHECK_CONSTRAINTS` WHERE CONSTRAINT_SCHEMA='mariaadb' AND TABLE_NAME='user';
28 SELECT * FROM `mariaadb`.`user` ORDER BY `comment_note` ASC, `comment_list` DESC, `comment_cool` ASC, `user_id` DESC LIMIT 1000;
29 SHOW TABLE STATUS LIKE `user`;
30 SELECT * FROM information_schema.COLUMNS WHERE TABLE_SCHEMA='mariaadb' AND TABLE_NAME='review' ORDER BY ORDINAL_POSITION;
31 SHOW INDEXES FROM `review` FROM `mariaadb`;
32 SELECT * FROM information_schema.REFERENTIAL_CONSTRAINTS WHERE CONSTRAINT_SCHEMA='mariaadb' AND TABLE_NAME='review' AND REFERENCED_TABLE_NAME IS NOT NULL;
33 SELECT * FROM information_schema.REFERENTIAL_CONSTRAINTS WHERE TABLE_SCHEMA='mariaadb' AND TABLE_NAME='review' AND REFERENCED_TABLE_NAME IS NOT NULL;
```


3)

Ερωτήματα και απαντήσεις.

Την εργασία την υλοποίησα σε γλώσσα προγραμματισμού python και για ευκολία έφτιαξα ένα μενού για να τρέξω τα 14 ερωτήματα όπως βλέπουμε στην παρακάτω εικόνα(09-22 κουμπιά).



Σημαντικό : Για να τρέξω όλα τα ερωτήματα και να βγάλω εικόνες σε κάποια ερωτήματα έχω χρησιμοποιήσει limit 10 γιατί κάποια ερωτήματα είναι τεράστια.

1. Πόσα tips έχουν τέσσερα ή περισσότερα compliments;

Please give a number you want : 9

Connected to MongoDB database!

The documents of tip is : 19

The time running of search is : 0:00:00.754005

2. Ποια είναι τα ονόματα των εταιριών, που έχουν τέσσερα ή περισσότερα compliments;

```
Please give a number you want : 10

Connected to MongoDB database!

The company of business is : {'name': 'AMC Sundial 12'}
The company of business is : {'name': 'The Loving Cup'}
The company of business is : {'name': 'Country Squire Diner'}
The company of business is : {'name': 'Holman INFINITI'}
The company of business is : {'name': 'Hattie's Cafe and Beanery'}
The company of business is : {'name': 'Hendricks BBQ'}
The company of business is : {'name': 'Lure Fish House'}
The company of business is : {'name': 'Chakana Soho'}
The company of business is : {'name': 'Walmart'}
The company of business is : {'name': 'St. Joseph's Women's Hospital'}
The company of business is : {'name': 'Empress Hotel'}
The company of business is : {'name': 'The Ritz-Carlton, New Orleans'}
The company of business is : {'name': 'Michelle Faedo's Tampeño Cuisine'}
The company of business is : {'name': 'Doc B's Restaurant + Bar'}
The company of business is : {'name': 'Bern's Steak House'}
The company of business is : {'name': 'Publix'}
The company of business is : {'name': 'Gratzzi Italian Grille'}
The company of business is : {'name': 'Regal Cinebarre Canal Place'}
The company of business is : {'name': 'First Choice Southern Bar-B Que'}
The time running of search is : 0:00:03.499863
```

3. Για τις παραπάνω επιχειρήσεις (που έχουν τέσσερα ή περισσότερα compliments), ποιο είναι το άθροισμα όλων των compliments που έχουν.

```
Please give a number you want : 11

Connected to MongoDB database!

The total compliments of tip is : {'_id': 'null', 'compliment_count': 83}
The total compliments of tip is : 83
The time running of search is : 0:00:00.786270
```

4. Ποιο είναι το όνομα και οι συντεταγμένες των επιχειρήσεων που έχουν υπηρεσία “Happy Hour”.

```

IDLE Shell 3.10.4
File Edit Shell Debug Options Window Help
Please give a number you want : 12

Connected to MongoDB database!

The company of business is : {'name': 'Tuna Bar', 'latitude': 39.953949, 'longitude': -75.1432262}
The company of business is : {'name': 'Romano's Macaroni Grill', 'latitude': 39.4761165, 'longitude': -119.7893392}
The company of business is : {'name': 'The Green Pheasant', 'latitude': 36.1598858, 'longitude': -86.7731974}
The company of business is : {'name': 'Bar One', 'latitude': 39.9398245705, 'longitude': -75.1574465632}
The company of business is : {'name': 'Craft Hall', 'latitude': 39.9625821, 'longitude': -75.1356571}
The company of business is : {'name': 'Cheeseburger In Paradise', 'latitude': 40.029962, 'longitude': -75.630607}
The company of business is : {'name': 'Tony's Restaurant & 3rd Street Cafe', 'latitude': 38.896563, 'longitude': -90.1862032987}
The company of business is : {'name': 'Caviar & Bananas', 'latitude': 36.1483712, 'longitude': -86.7988947}
The company of business is : {'name': 'Twin Peaks', 'latitude': 39.9062952, 'longitude': -86.0474634}
The company of business is : {'name': 'Doc Magroan's Oyster House - West Chester', 'latitude': 39.9615417, 'longitude': -75.6036042}
The company of business is : {'name': '39 North Taproom & Grill', 'latitude': 39.9036968861, 'longitude': -75.2949812448}
The company of business is : {'name': 'Top Shelf Sports Lounge', 'latitude': 28.1962523878, 'longitude': -82.3806153496}
The company of business is : {'name': 'Copper Vine', 'latitude': 29.9506467225, 'longitude': -90.0744274301}
The company of business is : {'name': 'Ricardo's Italian Cafe', 'latitude': 38.6172724, 'longitude': -90.2127841}
The company of business is : {'name': 'Mahony's Fo-Boys & Seafood', 'latitude': 29.9554151, 'longitude': -90.0700619}
The company of business is : {'name': 'Sunset 44 Bistro', 'latitude': 38.5832229, 'longitude': -90.4071872}
The company of business is : {'name': 'Altamura', 'latitude': 29.9338877563, 'longitude': -90.079498291}
The company of business is : {'name': 'Home Plate Sports Pub', 'latitude': 32.206315, 'longitude': -110.987843}
The company of business is : {'name': 'Cerveza Jack's', 'latitude': 36.162795, 'longitude': -86.776016}
The company of business is : {'name': 'Gaylord Opryland Resort & Convention Center', 'latitude': 36.2115923083, 'longitude': -86.6943191727}
The company of business is : {'name': 'The Handlebar Boise', 'latitude': 43.62001, 'longitude': -116.21279}
The company of business is : {'name': 'The Mad Griddle ', 'latitude': 39.781126, 'longitude': -86.1241235}

Ln 19859 Col 33

```

```

IDLE Shell 3.10.4
File Edit Shell Debug Options Window Help

The company of business is : {'name': 'Green Eggs Cafe', 'latitude': 39.95224, 'longitude': -75.169541}
The company of business is : {'name': 'Capital Tacos', 'latitude': 28.1866293218, 'longitude': -82.3661844841}
The company of business is : {'name': 'Cask Social Kitchen', 'latitude': 27.9426685, 'longitude': -82.4827162}
The company of business is : {'name': 'The Garage On Central', 'latitude': 27.771231561, 'longitude': -82.6706063747}
The company of business is : {'name': 'Great Basin Brewing', 'latitude': 39.5350952044, 'longitude': -119.7541334637}
The company of business is : {'name': 'Sports Legends Bar & Grill', 'latitude': 27.967356, 'longitude': -82.7311224}
The company of business is : {'name': 'Oat Bakery', 'latitude': 34.4165478074, 'longitude': -119.6956258296}
The company of business is : {'name': 'Angell's Bar & Grill', 'latitude': 43.6163619, 'longitude': -116.2055328}
The company of business is : {'name': 'Rudy's Sports Bar', 'latitude': 27.8741223, 'longitude': -82.73051}
The company of business is : {'name': 'The Station Pub & Grill', 'latitude': 32.3562660217, 'longitude': -111.1123504639}
The company of business is : {'name': 'Crave Cafe', 'latitude': 39.4959107, 'longitude': -119.7988388}
The company of business is : {'name': 'John Rich's Redneck Riviera', 'latitude': 36.1617232219, 'longitude': -86.7757476}
The company of business is : {'name': 'Ben Bistro Grill + Sushi', 'latitude': 27.9640468, 'longitude': -82.5216049}
The company of business is : {'name': 'Smokey Bones', 'latitude': 39.626847, 'longitude': -86.121427}
The company of business is : {'name': 'AAA Chinese Restaurant & Lounge', 'latitude': 53.5883458, 'longitude': -113.5649096}
The company of business is : {'name': 'El Cap Restaurant', 'latitude': 27.8041396, 'longitude': -82.6388547}
The company of business is : {'name': 'Café Ventana', 'latitude': 38.6380297, 'longitude': -90.2421335}
The company of business is : {'name': 'Connexions Cafe', 'latitude': 53.6005726434, 'longitude': -113.5402728691}
The company of business is : {'name': 'Plantation Pub', 'latitude': 36.070748, 'longitude': -86.947891}
The company of business is : {'name': 'HighWire Lounge', 'latitude': 32.2218278, 'longitude': -110.9679691}
The company of business is : {'name': 'Pizza Guru', 'latitude': 34.4406893, 'longitude': -119.7396807}
The company of business is : {'name': 'Crescent No Lawyers Bar-Grill', 'latitude': 43.6033677673, 'longitude': -116.2500630319}
The company of business is : {'name': 'The Melting Pot - Nashville', 'latitude': 36.1638754, 'longitude': -86.776311}

The time running of search is : 0:04:09.980949

Ln 144 Col 0

```

5. Ποια είναι τα ονόματα των 12 πρώτων επιχειρήσεων σε αριθμό checkin;

Please give a number you want : 13

Connected to MongoDB database!

The name of business is : {'name': 'Frankie's Raw Bar'}

The name of business is : {'name': 'Pupuseria Y Restaurant Melba'}

The name of business is : {'name': 'Action Karate'}

The name of business is : {'name': 'Humpty's Family Restaurant'}

The name of business is : {'name': 'McIlwain Family Dentistry & Ahrens Orthodontics'}

The name of business is : {'name': 'The Original Italian Pie'}

The name of business is : {'name': 'Will You Escape?'}

The name of business is : {'name': 'Traveling Corks'}

The name of business is : {'name': 'Blue River Canyon Day Spa & Store'}

The name of business is : {'name': 'Victory Car Wash'}

The name of business is : {'name': 'Studio G Salon'}

The name of business is : {'name': 'Sweet Lizard'}

The time running of search is : 0:00:01.912935

6. Πόσοι χρήστες έχουν κάνει review με περισσότερα από τέσσερα αστεράκια;

Please give a number you want : 14

Connected to MongoDB database!

Connected to MariaDB database!

The users of review is : 3231627

The time running of search is : 0:00:29.900588

7. Πόσα αστεράκια δίνουν κατά μέσο όρο οι χρήστες στα review τους;

```
Please give a number you want : 15

Connected to MongoDB database!

Connected to MariaDB database!

The total average stars of review is : 37452854535192046

The time running of search is : 0:00:38.869914
```

8. Πόσα κατά μέσο όρο αστεράκια έχουν δώσει οι χρήστες που έχουν τουλάχιστον ένα vote σε useful, funny ή cool;

```
Please give a number you want : 16

Connected to MongoDB database!

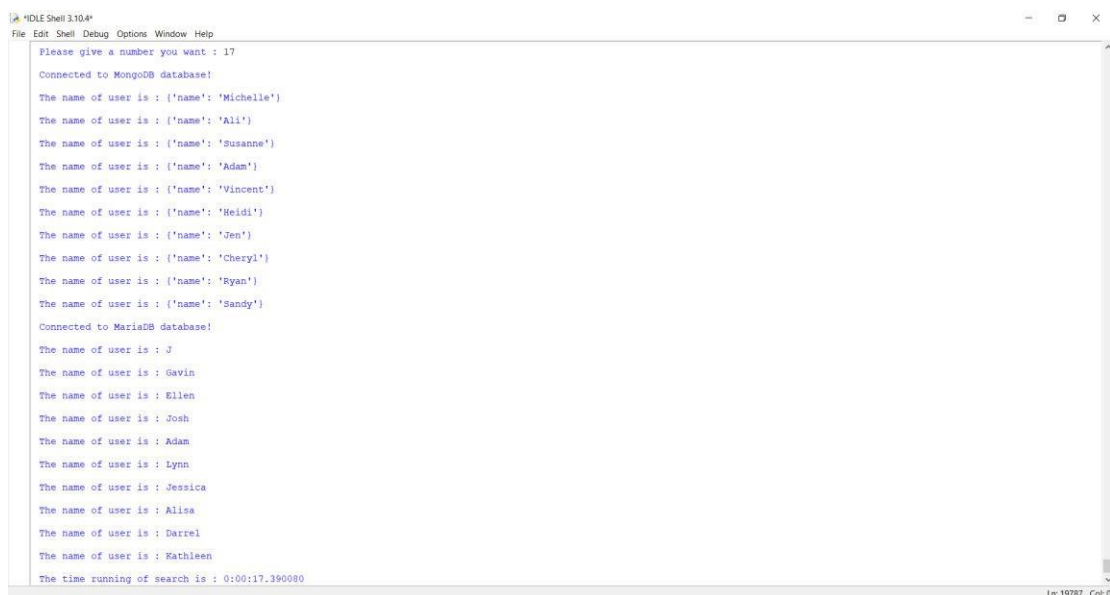
Connected to MariaDB database!

The total average stars of user is : 2.473153411506587e+16

The time running of search is : 0:00:13.604144
```

9. Ποια είναι τα ονόματα των χρηστών που έχουν δώσει πέντε αστεράκια και το review αυτό ήταν τουλάχιστον τρεις φορές useful;

Χρησιμοποίησα limit 10.



```
IDLE Shell 3.10.4
File Edit Shell Debug Options Window Help

Please give a number you want : 17
Connected to MongoDB database!
The name of user is : {'name': 'Michelle'}
The name of user is : {'name': 'Ali'}
The name of user is : {'name': 'Susanne'}
The name of user is : {'name': 'Adam'}
The name of user is : {'name': 'Vincent'}
The name of user is : {'name': 'Reidi'}
The name of user is : {'name': 'Jen'}
The name of user is : {'name': 'Cheryl'}
The name of user is : {'name': 'Ryan'}
The name of user is : {'name': 'Sandy'}
Connected to MariaDB database!
The name of user is : J
The name of user is : Gavin
The name of user is : Ellen
The name of user is : Josh
The name of user is : Adam
The name of user is : Lynn
The name of user is : Jessica
The name of user is : Alisa
The name of user is : Darrel
The name of user is : Kathleen
The time running of search is : 0:00:17.390080

Ln: 19787 Col: 0
```


Χρησιμοποίησα limit 10.

```
Please give a number you want : 18  
Connected to MongoDB database!  
Connected to MariaDB database!  
The total average of friends is : 602.7  
The time running of search is : 0:00:21.046065
```

[illegible][illegible]

```
The name, yelping_since and his/her friends of user is : ('Sam!', '2009-05-10 18:24:33', 'ERQk42TEVtekg6kR4_ga6w, 7lbnz6wV7J45:MO0Gbuq, loJxrtkEMRkce4r46shLEQ, vcc2g1VWf9gSculumPM
2g')

The name, yelping_since and his/her friends of user is : ('Jeri!', '2011-06-10 20:16:37', 'h46nDphtXPMNNDxDA0Mfcg, erVah0503tchIgcziE-jn4A')

The name, yelping_since and his/her friends of user is : Squeezed text (50 lines)

The name, yelping_since and his/her friends of user is : ('Jeri!', '2011-06-10 20:16:37', 'h46nDphtXPMNNDxDA0Mfcg, erVah0503tchIgcziE-jn4A')

The time running of search is : 0:00:21.504588
```


12. Για όσους χρήστες έχουν πάνω από 200 reviews, εμφανίστε τη γεωγραφική τοποθεσία στην οποία είναι περισσότερο ενεργοί. Πιο συγκεκριμένα, τις τρεις πρώτες τοποθεσίες με βάση latitude, longitude, χωρίς τα δεκαδικά ψηφία. Δηλαδή, εάν ένας χρήστης έχει κάνει review σε τοποθεσία (38.551126, -110.880452) και (38.999999, -110.000000), θεωρούμε ότι έχει κάνει δυο reviews στην τοποθεσία (38.000000, -110.000000), ή γενικότερα (38, -110).

Χρησιμοποιήσαμε limit 10.

```
Please give a number you want : 20
Connected to MongoDB database!

The id of user is : {'user_id': 'qVc8ODU5S8jKXVBgkd17u'}
The geographical location in which they are most active is : {'address': '3765 Santa Claus Ln', 'city': 'Carpinteria', 'state': 'CA', 'postal_code': '93013', 'latitude': 34.0, 'longitude': -120.0}
The geographical location in which they are most active is : {'address': '2955 Market St', 'city': 'Philadelphia', 'state': 'PA', 'postal_code': '19104', 'latitude': 40.0, 'longitude': -75.0}
The geographical location in which they are most active is : {'address': '2201 Laguna St', 'city': 'Santa Barbara', 'state': 'CA', 'postal_code': '93105', 'latitude': 34.0, 'longitude': -120.0}

The id of user is : {'user_id': 'j14WgRoU_-2SElaidKxJy'}
The geographical location in which they are most active is : {'address': '542 Frenchmen St', 'city': 'New Orleans', 'state': 'LA', 'postal_code': '70116', 'latitude': 30.0, 'longitude': -90.0}
The geographical location in which they are most active is : {'address': '809 Ewing Ave', 'city': 'Nashville', 'state': 'TN', 'postal_code': '37203', 'latitude': 36.0, 'longitude': -87.0}
The geographical location in which they are most active is : {'address': '200 N 19th St', 'city': 'Philadelphia', 'state': 'PA', 'postal_code': '19102', 'latitude': 40.0, 'longitude': -75.0}

The id of user is : {'user_id': '2WxYQFK0hXEtXtV2zv'}
The geographical location in which they are most active is : {'address': '953 W 5th St', 'city': 'Reno', 'state': 'NV', 'postal_code': '89503', 'latitude': 40.0, 'longitude': -120.0}
The geographical location in which they are most active is : {'address': '953 W 5th St', 'city': 'Reno', 'state': 'NV', 'postal_code': '89503', 'latitude': 40.0, 'longitude': -120.0}
The geographical location in which they are most active is : {'address': '3800 S Virginia St', 'city': 'Reno', 'state': 'NV', 'postal_code': '89502', 'latitude': 39.0, 'longitude': -120.0}

The id of user is : {'user_id': 'S2DeASXq7o05mNKLahsdIA'}
The geographical location in which they are most active is : {'address': '812 Royal St', 'city': 'New Orleans', 'state': 'LA', 'postal_code': '70116', 'latitude': 30.0, 'longitude': -90.0}
The geographical location in which they are most active is : {'address': '542 Frenchmen St', 'city': 'New Orleans', 'state': 'LA', 'postal_code': '70116', 'latitude': 30.0, 'longitude': -90.0}
The geographical location in which they are most active is : {'address': '3112 Magazine St', 'city': 'New Orleans', 'state': 'LA', 'postal_code': '70115', 'latitude': 30.0, 'longitude': -90.0}
```

```
File Edit Shell Debug Options Window Help

The id of user is : {'user_id': 'FT9CF839sj2xVjCTrDhmdg'}
The geographical location in which they are most active is : {'address': '2909 22nd Ave N', 'city': 'Saint Petersburg', 'state': 'FL', 'postal_code': '33713', 'latitude': 28.0, 'longitude': -83.0}
The geographical location in which they are most active is : {'address': '2613 Laurel St', 'city': 'New Orleans', 'state': 'LA', 'postal_code': '70130', 'latitude': 30.0, 'longitude': -90.0}
The geographical location in which they are most active is : {'address': '45 French Market Pl', 'city': 'New Orleans', 'state': 'LA', 'postal_code': '70116', 'latitude': 30.0, 'longitude': -90.0}

Connected to MariaDB database!
The geographical location in which they are most active is : {'address': '1005 Canal St', 'city': 'New Orleans', 'state': 'LA', 'postal_code': '70112', 'latitude': 30.0, 'longitude': -90.0}
The geographical location in which they are most active is : {'address': '601 American Legion Drive', 'city': 'Madeira Beach', 'state': 'FL', 'postal_code': '33708', 'latitude': 28.0, 'longitude': -83.0}
The geographical location in which they are most active is : {'address': '123 Baronne St', 'city': 'New Orleans', 'state': 'LA', 'postal_code': '70112', 'latitude': 30.0, 'longitude': -90.0}
The geographical location in which they are most active is : {'address': '1800 E Speedway Blvd', 'city': 'Tucson', 'state': 'AZ', 'postal_code': '85719', 'latitude': 32.0, 'longitude': -111.0}
The geographical location in which they are most active is : {'address': '15 W Ortega St', 'city': 'Santa Barbara', 'state': 'CA', 'postal_code': '93101', 'latitude': 34.0, 'longitude': -120.0}
The geographical location in which they are most active is : {'address': '905 State St', 'city': 'Santa Barbara', 'state': 'CA', 'postal_code': '93101', 'latitude': 34.0, 'longitude': -120.0}
The geographical location in which they are most active is : {'address': '117 Harbor Way', 'city': 'Santa Barbara', 'state': 'CA', 'postal_code': '93109', 'latitude': 34.0, 'longitude': -120.0}
The geographical location in which they are most active is : {'address': '905 State St', 'city': 'Santa Barbara', 'state': 'CA', 'postal_code': '93101', 'latitude': 34.0, 'longitude': -120.0}
The geographical location in which they are most active is : {'address': '22222 Mt Rose Hwy', 'city': 'Reno', 'state': 'NV', 'postal_code': '89511', 'latitude': 39.0, 'longitude': -120.0}
The geographical location in which they are most active is : {'address': '216 E Yannoni St', 'city': 'Santa Barbara', 'state': 'CA', 'postal_code': '93101', 'latitude': 34.0, 'longitude': -120.0}

The time running of search is : 0:00:39.179366
```

13. 2 επιπλέον ερωτήματα που εσείς θα προτείνετε και περιγραφή τους.

Χρησιμοποίησα limit 10.

21 - Ποια είναι τα ονόματα των επιχειρήσεων που είναι ανοιχτά;

```
Please give a number you want : 21
Connected to MongoDB database!
The company of business is : {'name': 'The UPS Store'}
The company of business is : {'name': 'St Honore Pastries'}
The company of business is : {'name': 'Perkiomen Valley Brewery'}
The company of business is : {'name': 'Sonic Drive-In'}
The company of business is : {'name': 'Famous Footwear'}
The company of business is : {'name': 'Temple Beth-El'}
The company of business is : {'name': 'Sonic Drive-In'}
The company of business is : {'name': 'Marshalls'}
The company of business is : {'name': 'Vietnamese Food Truck'}
The company of business is : {'name': 'Denny's'}
The time running of search is : 0:00:00.385967
```

22 - Ποια είναι τα ονόματα των επιχειρήσεων που έχουν review πάνω από 10;

Χρησιμοποίησα limit 10.

```
Please give a number you want : 22
Connected to MongoDB database!
The company of business is : {'name': 'The UPS Store'}
The company of business is : {'name': 'Target'}
The company of business is : {'name': 'St Honore Pastries'}
The company of business is : {'name': 'Perkiomen Valley Brewery'}
The company of business is : {'name': 'Famous Footwear'}
The company of business is : {'name': 'Tsevi's Pub And Grill'}
The company of business is : {'name': 'Denny's'}
The company of business is : {'name': 'Zio's Italian Market'}
The company of business is : {'name': 'Tuna Bar'}
The company of business is : {'name': 'Nifty Car Rental'}
The time running of search is : 0:00:00.411939
```

Τέλος.