INFORMATION COMMUNICATION TECHNOLOGIES

DBMS of translator system

Student name: Taibek Daniyar

Group name: TS – 1902

Tutor name: Assel Smayil

Date: 5th of December 2019

Nur – Sultan 2019

Work

My project partially will show how the database system works in ordinary translators in general in the world. Just below you can see these 7 entities in my database structure. And then I will figure out how to connect all these 7 entities without data redundancy.

Create tables, inserts, alter tables, drop, deletes, updates

1)

Dashboard Properties SQL Statistics Dependencies Dependents danik/postgres@PostgreSQL 10 *

No limit

Query Editor

```
1  create table client(
2  clID int,
3  cl_fname varchar(32),
4  cl_lname varchar(32),
5  client_emailadd varchar(32),
6  client_desc varchar(40)
7  );
8  insert into client(clID,cl_fname,cl_lname,client_emailadd)
9  values(101,'Doni','Taibek' ,'taibek02@mail.ru' ),
10 (102,'Nurba','Bekbosynov' ,'bekbos90@mail.ru'),
11 (103,'Nurik','Shagalimov','nur89@mail.ru'),
12 (104,'Ayan','Sultan','ayas3@mail.ru');
13
14 update client
15 set cl_fname = 'Nurbek' where cl_fname = 'Nurba';
16
17 delete from client
18 where clID=102;
19
20 alter table client drop column client_desc;
21 alter table client add column client_number VARCHAR(25);
22 alter table client add constraint cl_pk Primary key (clID);
```

2)

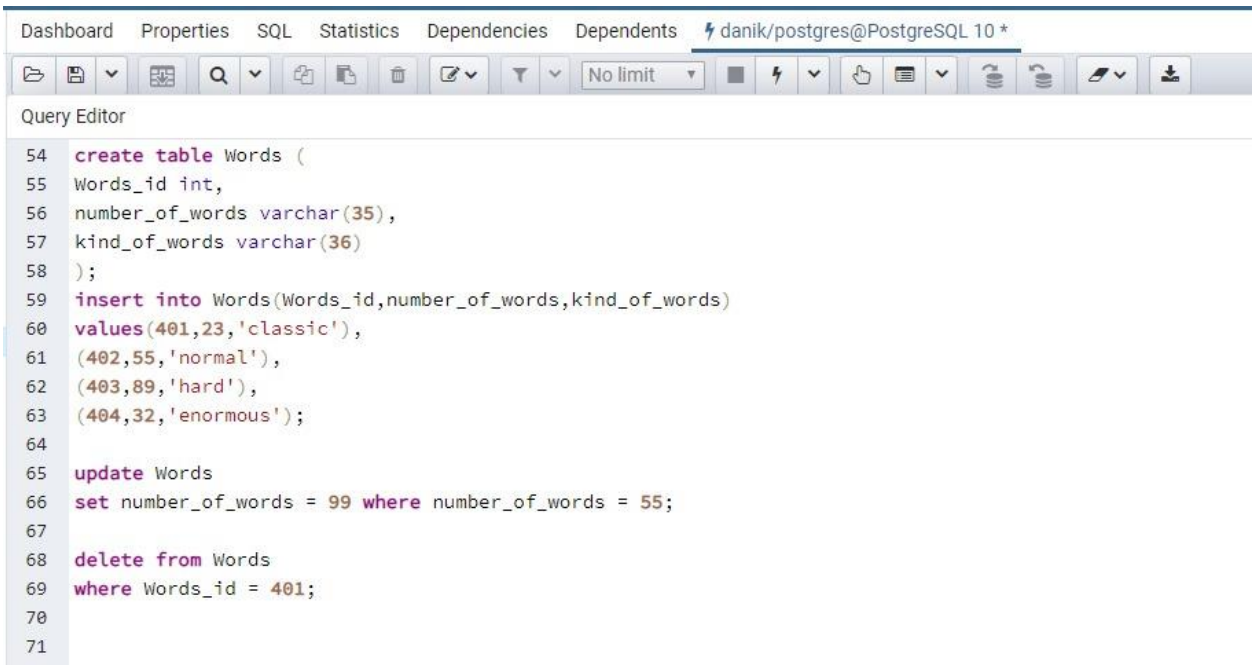
Dashboard Properties SQL Statistics Dependencies Dependents danik/postgres@PostgreSQL 10 *

No limit

Query Editor

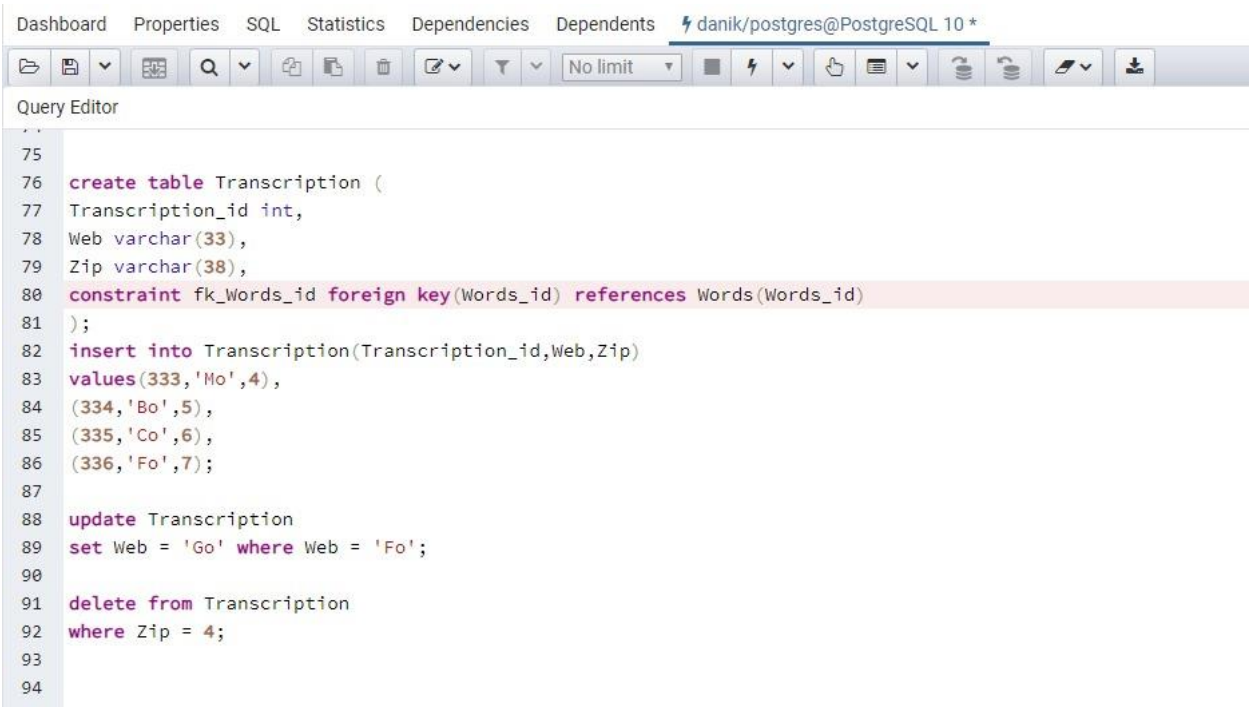
```
32 create table site (
33 siteID int,
34 type_of_site varchar(34),
35 version_of_site varchar(35),
36 constraint fk_clID foreign key(clID) references client(clID)
37 );
38 insert into site(siteID,type_of_site,version_of_site)
39 values(111,'Yandex','Classic'),
40 (112,'Google','Inkognito'),
41 (113,'Yahoo','Ziui'),
42 (114,'Amigo','Doofy');
43
44 update site
45 set type_of_site = 'Floap' where type_of_site = 'Amigo';
46
47 delete from site
48 where siteID = 113;
49
50
```

3)



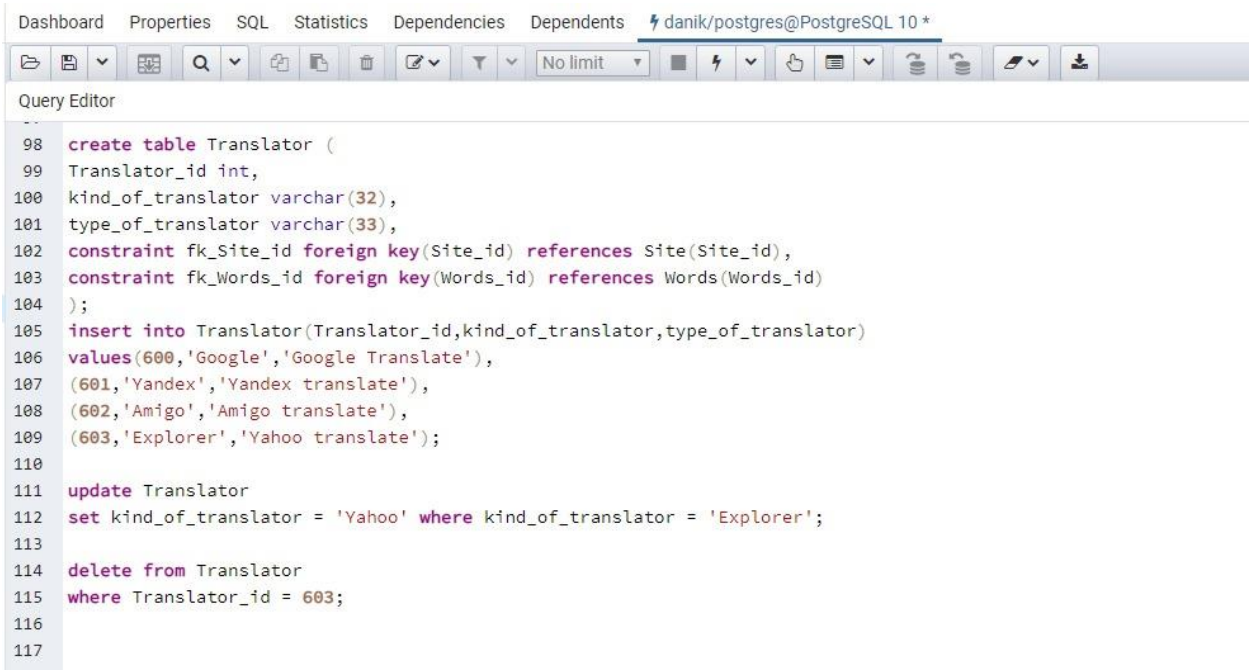

```
54 create table Words (
55 Words_id int,
56 number_of_words varchar(35),
57 kind_of_words varchar(36)
58 );
59 insert into Words(Words_id,number_of_words,kind_of_words)
60 values(401,23,'classic'),
61 (402,55,'normal'),
62 (403,89,'hard'),
63 (404,32,'enormous');
64
65 update Words
66 set number_of_words = 99 where number_of_words = 55;
67
68 delete from Words
69 where Words_id = 401;
70
71
```

4)



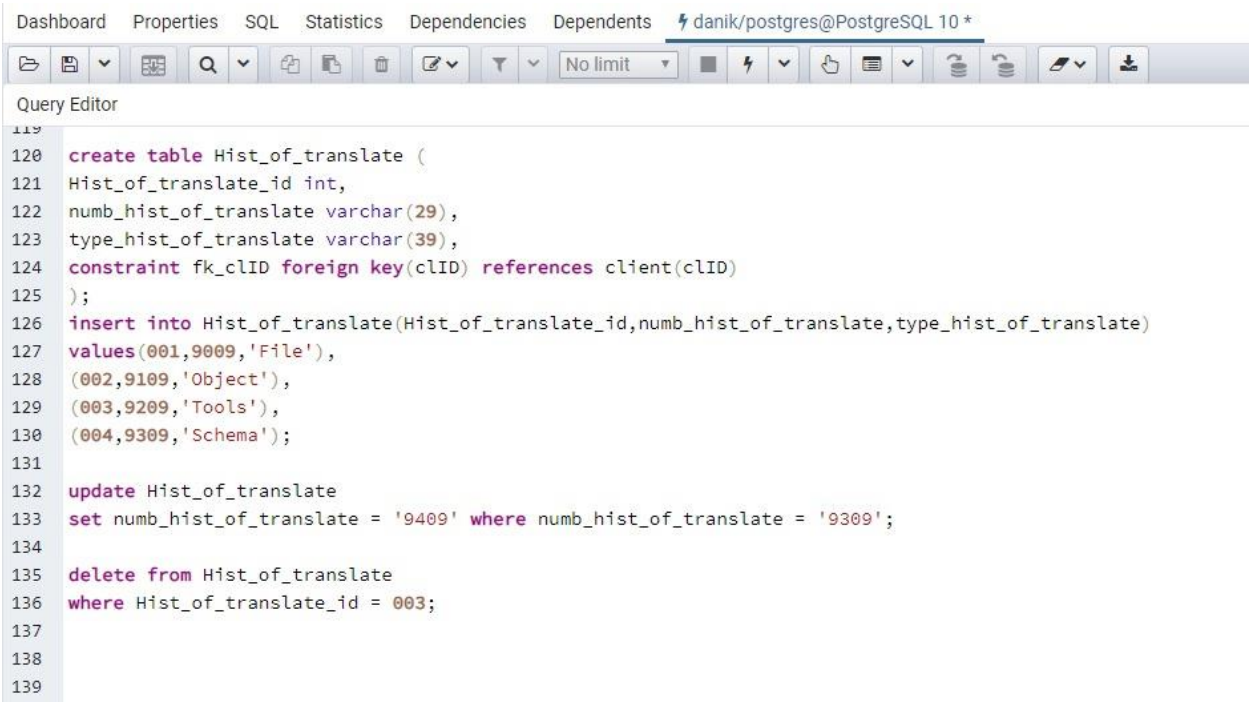

```
75
76 create table Transcription (
77 Transcription_id int,
78 Web varchar(33),
79 Zip varchar(38),
80 constraint fk_Words_id foreign key(Words_id) references Words(Words_id)
81 );
82 insert into Transcription(Transcription_id,Web,Zip)
83 values(333,'Mo',4),
84 (334,'Bo',5),
85 (335,'Co',6),
86 (336,'Fo',7);
87
88 update Transcription
89 set Web = 'Go' where Web = 'Fo';
90
91 delete from Transcription
92 where Zip = 4;
93
94
```

5)



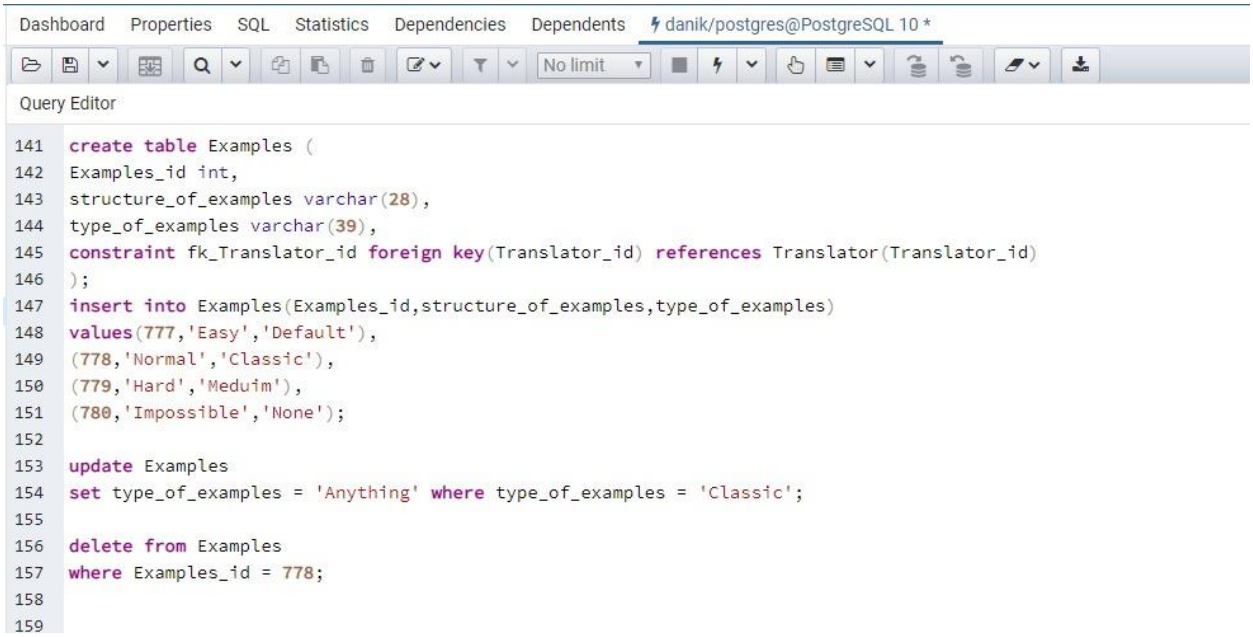

```
98  create table Translator (
99  Translator_id int,
100 kind_of_translator varchar(32),
101 type_of_translator varchar(33),
102 constraint fk_Site_id foreign key(Site_id) references Site(Site_id),
103 constraint fk_Words_id foreign key(Words_id) references Words(Words_id)
104 );
105 insert into Translator(Translator_id,kind_of_translator,type_of_translator)
106 values(600,'Google','Google Translate'),
107 (601,'Yandex','Yandex translate'),
108 (602,'Amigo','Amigo translate'),
109 (603,'Explorer','Yahoo translate');
110
111 update Translator
112 set kind_of_translator = 'Yahoo' where kind_of_translator = 'Explorer';
113
114 delete from Translator
115 where Translator_id = 603;
116
117
```

6)

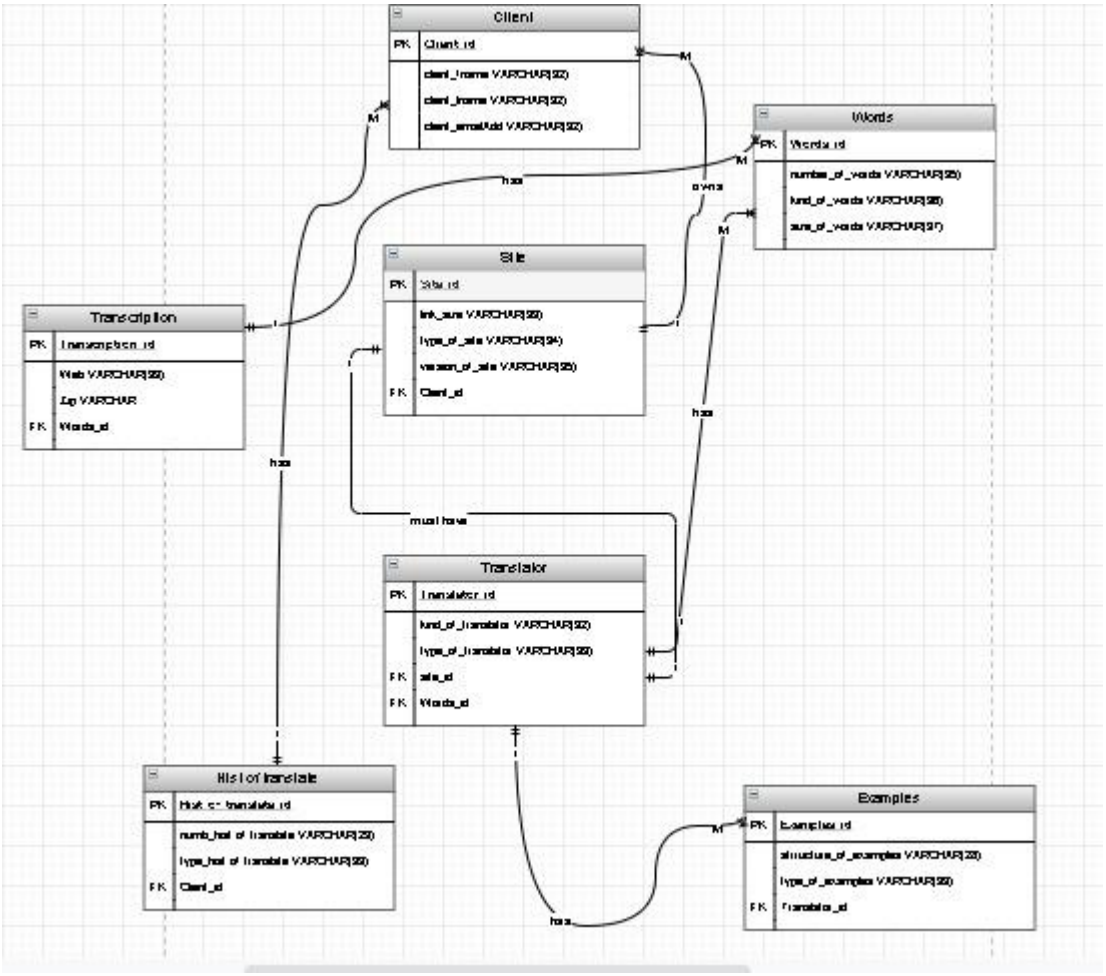



```
120 create table Hist_of_translate (
121 Hist_of_translate_id int,
122 numb_hist_of_translate varchar(29),
123 type_hist_of_translate varchar(39),
124 constraint fk_clID foreign key(clID) references client(clID)
125 );
126 insert into Hist_of_translate(Hist_of_translate_id,numb_hist_of_translate,type_hist_of_translate)
127 values(001,9009,'File'),
128 (002,9109,'Object'),
129 (003,9209,'Tools'),
130 (004,9309,'Schema');
131
132 update Hist_of_translate
133 set numb_hist_of_translate = '9409' where numb_hist_of_translate = '9309';
134
135 delete from Hist_of_translate
136 where Hist_of_translate_id = 003;
137
138
139
```

7)


Dashboard
Properties
SQL
Statistics
Dependencies
Dependents
danik/postgres@PostgreSQL 10 *
No limit
Query Editor
141 create table Examples (
142 Examples_id int,
143 structure_of_examples varchar(28),
144 type_of_examples varchar(39),
145 constraint fk_Translator_id foreign key(Translator_id) references Translator(Translator_id)
146);
147 insert into Examples(Examples_id,structure_of_examples,type_of_examples)
148 values(777,'Easy','Default'),
149 (778,'Normal','Classic'),
150 (779,'Hard','Meduim'),
151 (780,'Impossible','None');
152
153 update Examples
154 set type_of_examples = 'Anything' where type_of_examples = 'Classic';
155
156 delete from Examples
157 where Examples_id = 778;
158
159

ER Diagram


Client
PK
Client_id
client_lname VARCHAR(32)
client_fname VARCHAR(32)
client_emailAdd VARCHAR(32)
Words
PK
Words_id
number_of_words VARCHAR(25)
kind_of_words VARCHAR(25)
area_of_words VARCHAR(25)
Site
PK
Site_id
link_area VARCHAR(25)
type_of_site VARCHAR(24)
version_of_site VARCHAR(25)
FK
Client_id
Transcription
PK
Transcription_id
Web VARCHAR(25)
Zip VARCHAR
FK
Words_id
Translator
PK
Translator_id
kind_of_translate VARCHAR(32)
type_of_translate VARCHAR(25)
FK
site_id
FK
Words_id
History of translate
PK
Hist_of_translate_id
numb_hist of translate VARCHAR(25)
type_hist of translate VARCHAR(25)
FK
Client_id
Examples
PK
Examples_id
structure_of_examples VARCHAR(25)
type_of_examples VARCHAR(25)
FK
Translate_id
has
owns
has
has
must have
has

Normalization

Client_ID	Client_Name	Client_emailAdd	Site_Number	Translator_type	Word_number	T/n_size	Structure_of_examples
330	Nurbek	Nurbek23@mail.ru NurbEk96@mail.ru	45	Yandex translate	224	56.7	Academic
335	Ernar	Ernar002@mail.ru ErnAr64@mail.ru	85	Google translate	775	23.4	Basic
339	Adil	Adil.138@mail.ru	112	Oxford translate	904	45.6	Medium

FIRST NORMAL FORM

Client_ID	Client_Name	Client_emailAdd	Site_Number	Translator_type	Word_number	T/n_size	Structure_of_examples
330	Nurbek	Nurbek23@mail.ru	45	Yandex translate	224	56.7	Academic
330	Nurbek	NurbEk96@mail.ru	45	Yandex translate	224	56.7	Academic
335	Ernar	Ernar002@mail.ru	85	Google translate	775	23.4	Basic
335	Ernar	ErnAr64@mail.ru	85	Google translate	775	23.4	Basic
339	Adil	Adil.138@mail.ru	112	Oxford translate	904	45.6	Medium

1NF:

1FD1:{Client_id , Site_number , Word_number} -> ;{ Client_name , Client_emailAddress , Translator_type , Transcription_size , Structure_of_examples};

Anomalies:

1) We can't delete client named "Nurbek", else we can lost both e – mails;

2) We can't update client named "Ernar", else we have to update transcription size as well;

3) We can't insert clients who currently doesn't use type of translator;

SECOND NORMAL FORM

Client_ID	Client_Name	Client_emailAdd
330	Nurbek	Nurbek23@mail.ru
335	Ernar	Ernar002@mail.ru
339	Adil	Adil.138@mail.ru

Client_ID	Site_Number	Translator_type	Word_number	T/n_size	Structure_of_examples
330	45	Yandex translate	224	56.7	Academic
335	85	Google translate	775	23.4	Basic
339	112	Oxford translate	904	45.6	Medium

Client_emailAdd	Site_Number	Translator_type	Word_number	T/n_size	Structu
Nurbek23@mail.ru	45	Yandex translate	224	56.7	Academ
NurbEk96@mail.ru	45	Yandex translate	224	56.7	Academ
Ernar002@mail.ru	85	Google translate	775	23.4	Basic
ErnAr64@mail.ru	85	Google translate	775	23.4	Basic
Adil.138@mail.ru	112	Oxford translate	904	45.6	Medium

2NF:

2FD1(transitivity): {Client_id} -> ;{Client_name} -> ;{Client_emailAdd};

2FD2(transitivity): {Client_id} ->;{Site_number} ->;{Translator_type}; ->;{Word_number} ->;{Transcription size} ->;{Structure_of_examples};

2FD3(transitivity): {Client_emailAdd}->;{Site_number}->;{Translator_type} ->;{Word_number} ->;{Transcription size} ->;{Structure_of_examples};

THIRD NORMAL FORM

Client_ID	Translator_type
330	Yandex translate
335	Google translate
339	Oxford translate

Client_ID	Word_number	T/n_size
330	224	56.7
335	775	23.4
339	904	45.6

Client_ID	Site_Number	Structure_of_examples
330	45	Academic
335	85	Basic
339	112	Medium

Site_Number	Translator_type	T/n_size
45	Yandex translate	56.7
85	Google translate	23.4
112	Oxford translate	45.6

3NF:

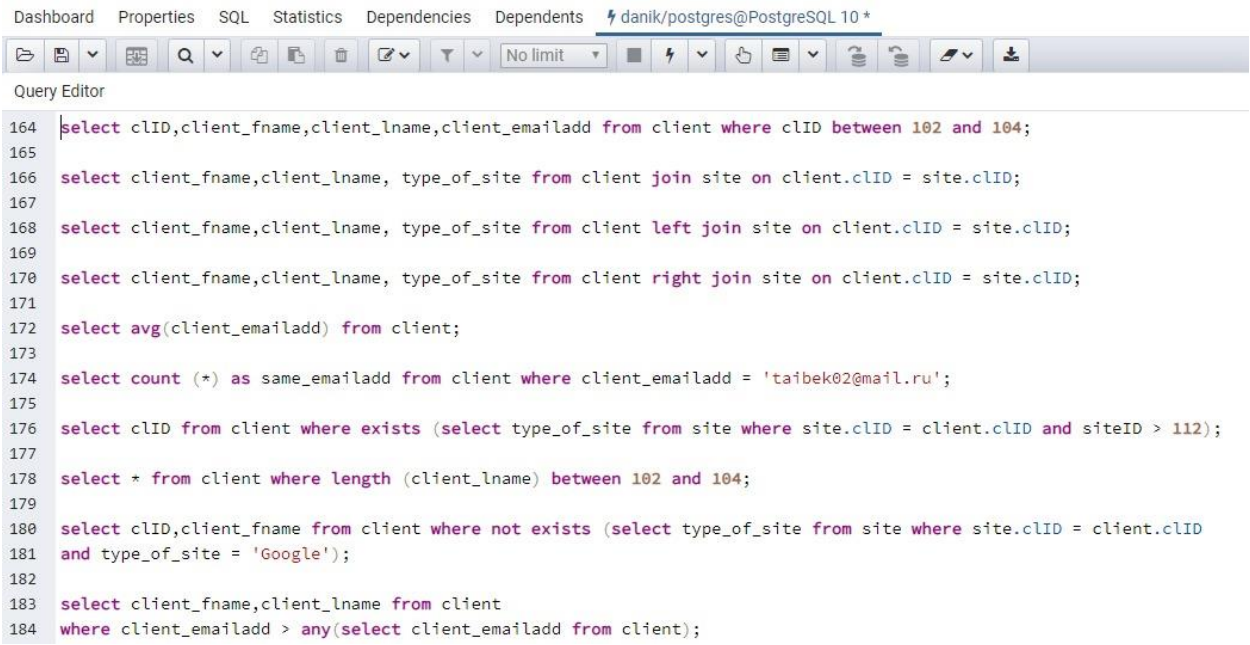
3FD1(full dependence) : {Client_id} ->;{Translator_type};

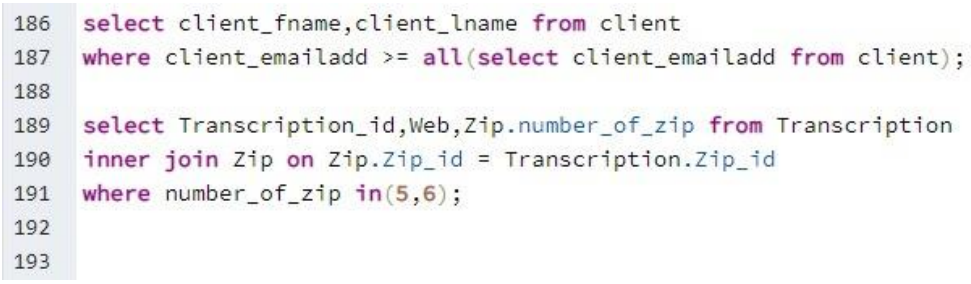
3FD2(full dependence): {Client_id} ->;{Word_number} ->;{Transcription_size};

3FD3(full dependence): {Client_id} ->;{Site_number} ->;{Structure_of_Examples};

3FD4: {Site_number} ->;{Translator_type} ->;{Transcription_size};

Queries & Subqueries





Finished!

Thank you for your attention)