Part c

MSBA Group 28

17/11/2021

Normalization PART C

Defining a connection to RSQlite

```
my_connection <- RSQLite::dbConnect(RSQLite::SQLite(),"bibitor.db")
```

Reading the lastest database generated

```
Masterdatabase <- readr::read_csv("food2.csv")

str(Masterdatabase)
```

Creating a unique primary key for every business and overwritting the database

```
Masterdatabase$BusinessID <- random_id(596773)

Masterdatabase$BusinessID <- Masterdatabase$BusinessID
```

Saving the new database modified from the previous steps

```
write.csv(Masterdatabase,"C:\\Users\\Tati\\Desktop\\MSC BUSINESS ANALYTICS\\IB9HP0 Data Management\\ass
```

```
Masterdatabase1 <- readr::read_csv("foodUPDATED.csv")
```

```
## Rows: 596773 Columns: 25

## -- Column specification --------------------------------------------------------
## Delimiter: ","
## chr  (18): LocalAuthorityBusinessID, BusinessName, BusinessType, AddressLine...
## dbl   (4): FHRSID, BusinessTypeID, longitude, latitude
## lgl   (2): NewRatingPending, RightToReply
## date  (1): RatingDate

##
## i Use `spec()` to retrieve the full column specification for this data.
## i Specify the column types or set `show_col_types = FALSE` to quiet this message.
```

Writting the file.csv foodUPDATED.csv into mysqlite

```
RSQLite::dbWriteTable(my_connection,"Masterdatabase1",Masterdatabase1,overwrite=TRUE)
```

Creating ratings table with attributes (‘rating_id’,‘rating’, and region)

```
CREATE TABLE'ratings_table' (
  'rating_id' PRIMARY KEY,
  'rating' VARCHAR,
  'region'
);
```

Inserting data into rating _table from the Masterdatabase1

```
insert into ratings_table(rating_id,rating,region)
SELECT DISTINCT RatingKey,RatingValue,SchemeType
from Masterdatabase1
```

Verifying the content of the ratings_table

Region= FHIS for Scotland or FHRS for the rest of the UK

```
select *
from ratings_table
```

Table 1: Displaying records 1 - 10

rating_id	rating	region
fhis_pass_en-GB	Pass	FHIS
fhis_awaiting_inspection_en-GB	Awaiting Inspection	FHIS
fhis_improvement_required_en-GB	Improvement Required	FHIS
fhis_pass_and_eat_safe_en-GB	Pass and Eat Safe	FHIS
fhis_exempt_en-GB	Exempt	FHIS
fhrs_awaitinginspection_en-GB	AwaitingInspection	FHRS
fhrs_5_en-GB	5	FHRS
fhrs_4_en-GB	4	FHRS
fhrs_3_en-GB	3	FHRS
fhrs_exempt_en-GB	Exempt	FHRS

Creating business_details table with attributes (‘business_ID’,‘business_name’,‘city’,‘latitude’,‘longitud’ , ‘addressline2’,‘addressline3’, ‘POSTCODE’,‘Rating_date_taken’). Additionally, foreign keys such as’rating_id’,‘local_authority_ID, and ’business_type_ID’ as a result of the relationship M:1 between business and three entities which are local_authority,Ratings and business type entity.

```
CREATE TABLE'business_details' (
  'business_ID' varchar PRIMARY KEY ,
   'business_name'VARCHAR,
  'city' VARCHAR,
  'latitude' NUMERIC,
  'longitud' NUMERIC,
  'addressline2' VARCHAR,
```

```
  'addressline3' VARCHAR,
  'POSTCODE' VARCHAR,
  'Rating_date_taken' DATE,
  'rating_id' ,
  'local_authority_ID',
  'business_type_ID',
  FOREIGN KEY ('rating_id')
    REFERENCES ratings_table('rating_id'),
      FOREIGN KEY ('local_authority_ID')
    REFERENCES local_authorities('local_authority_ID'),
     FOREIGN KEY ('business_type_ID')
    REFERENCES business_types('business_type_ID')

);
```

Inserting data into business_details from the Masterdatabase1

```
insert into business_details(business_ID,business_name,
city,latitude,longitud,addressline2,addressline3,POSTCODE,
Rating_date_taken,rating_id,local_authority_ID,business_type_ID)

SELECT BusinessID,BusinessName,city,latitude,longitude,
AddressLine2,AddressLine3,PostCode,RatingDate,RatingKey,
LocalAuthorityCode,BusinessTypeID

from Masterdatabase1
```

Verifying the content of business_details table

```
select business_ID,business_name
from business_details
limit 5
```

Table 2: 5 records

business_ID	business_name
dab2aac2ef916cf6712fb73aea76dc11	1 & 30 DONALD DEWAR COURT
5a8dd23ba9276fb347fdafceae22b096	1906 RESTAURANT AT HMT
7fbbc19bcf1c65c195dd4bedb19a2cf6	1DS
318ce1750b299b469f7e14d382c84e35	2 BROTHERS PIZZA
0a4174778b9cb08ec2709a00da10b002	210 BISTRO

Creating local_authorities table which indicates 'local_authority_ID', 'local_authority_name' ,'local_authority_WEBSITE','local_authority_email'

```
CREATE TABLE'local_authorities' (
  'local_authority_ID' PRIMARY KEY ,
  'local_authority_name' VARCHAR,
  'local_authority_WEBSITE' VARCHAR,
  'local_authority_email' VARCHAR
);
```

Inserting data into local_authorities from the Masterdatabase1

```
insert into local_authorities(local_authority_ID,
local_authority_name,local_authority_WEBSITE,local_authority_email)

SELECT distinct  LocalAuthorityCode,
LocalAuthorityName, LocalAuthorityWebSite,
LocalAuthorityEmailAddress

from Masterdatabase1
```

Verifying the content of local_authorities table

```
select *
from local_authorities
limit 5
```

Table 3: 5 records

local_authority_ID	local_authority_name	local_authority_WEBSITE	local_authority_email
760	Aberdeen City	http://www.aberdeencity.gov.uk	commercial@aberdeencity.gov.uk
761	Aberdeenshire	http://www.aberdeenshire.gov.uk/	environmental@aberdeenshire.gov.uk
323	Adur	http://www.adur-worthing.gov.uk	publichealth.regulation@adur-worthing.gov.uk
055	Allerdale	http://www.allerdale.gov.uk	environmental.health@allerdale.gov.uk
062	Amber Valley	http://www.ambervalley.gov.uk	envhealth@ambervalley.gov.uk

Creating business_types table which indicates 'business_type_ID', 'business_type_name'

```
CREATE TABLE'business_types' (
  'business_type_ID' PRIMARY KEY ,
  'business_type_name' VARCHAR
);
```

Inserting data into business_types from the Masterdatabase1

```
insert into business_types(business_type_ID,business_type_name)

SELECT distinct  BusinessTypeID,BusinessType
from Masterdatabase1
```

Verifying the content of business_types table

```
select *
from business_types
limit 5
```

Table 4: 5 records

business_type_ID	business_type_name
5	Hospitals/Childcare/Caring Premises
1	Restaurant/Cafe/Canteen
7843	Pub/bar/nightclub
7844	Takeaway/sandwich shop
7842	Hotel/bed & breakfast/guest house

Listing all the tables and database from the sqlite environment

```
# Get a list of tables from the database that we already
# created
RSQLite::dbListTables(my_connection)
```

```
## [1] "Masterdatabase1"   "business_details"  "business_types"
## [4] "local_authorities" "ratings_table"
```

Disconnect from sqlite

```
# Disconnect from the database using the connection variable that we setup
# before
RSQLite::dbDisconnect(my_connection)
```