RELATIONAL DATABASES PROJECT

HOLIDAY COTTAGE RENTAL

**Aditya Chandra**

**a00268811**

**M.Sc. in Data Analytics**

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# 1.Introduction

The aim of this project is to study the data related to holiday cottage rentals by creating a data base in Oracle SQL. With the help of provided table names and column names, the relationship between the entities and attributes were established and an Entity Relationship Diagram (ERD) was devised. An extended ERD was designed to display the attributes within each entity and the primary and foreign keys were highlighted.

After creating the ERD, a script was generated to create all the tables and populate them with data using the insert statement. Once the data base is successfully created in Oracle SQL, we were ready to retrieve and manipulate the data using SQL queries.

The report aims to incorporate all the aspects of SQL command set which include:

Data Definition Language (DDL)

Data Manipulation Language (DML)

Data Control Language (DCL)

This project tries to traverse through all the features of the SQL that can be used during and after the creation and implementation of a data base.

# 2. Original Data

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **4** | **Aditya** | **Chandra** | **Holiday\_Cottage\_Rental** | **HCR** |

A Database required to co-ordinate the services offered by a group of proprietors that want to rent holiday cottages that they individually own. A proprietor may own several cottages around the country. The cottages are rented to Tourists. The Tourists (both native and overseas) may rent the same cottage on a number of different occasions, or rent a different cottage. Some cottages have not yet been rented. There are a number of caretakers that work for the proprietor group and they can be called upon by any proprietor to clean a cottage. A caretaker may clean several cottages. Some caretakers clean cottages for several proprietors.

**A proprietor may own many cottages and a cottage is owned by one and only one proprietor.**

**A cottage may participate in many cottage rentals and a cottage rental involves one and only one cottage.**

**A caretaker may perform many cottage cleanings and a cottage cleaning involves one and only one caretaker.**

**A tourist may participate in many cottage rentals and a cottage rental involves one and only one tourist.**

**Tourist** (Tourist\_Id, FirstName, Lastname, Address, Nationality, Telephone\_No, Email\_Address, Special\_Needs, Pay\_Method)

**Cottage\_Rental** (Cottage\_Id, Rental\_Date, Num\_Nights, Num\_Guests, Total\_Due, Deposit\_Paid, Pay\_Method (*Cheque, Cash, Credit Card)*), Tourist\_Id)

**Caretaker** (Caretaker\_Id, FirstName, Surname, Address, Town, County, Nationality, Mobile\_No, Email\_Address, Hourly\_Rate)

**Cottage\_Cleaning** (Cottage\_Id, Caretaker\_Id, Date\_Cleaned, Time\_Taken *(Hours),* Details *(Note of any Damage, Items Stolen, etc))*

**Proprietor** (Proprietor\_Id, FName, Sname, Address, County, Date\_Of\_Birth, Email, Mobile\_No, Foreign\_Language (*French, German, Italian, Dutch*))

**Cottage** (Cottage\_Id, Cottage\_Address, Town, County, Proprietor\_Id, Grade (*2 star, etc*), Special\_Features (*TV, Internet Point, Sauna*), Num\_Bedrooms, Heating (*Oil, Gas, Solid Fuel),* Year\_Built, Type (*Dormer, Bungalow, Two Storey*), Cost, Market\_Value)

## 2.1. Entities:

Tourist

Proprietor

Cottage

Cottage\_Rental

Caretaker

Cottage\_Cleaning

## 2.2. Entities with Attributes:

**Tourist** (*Tourist\_Id*, FirstName, Lastname, Address, Nationality, Telephone\_No, Email\_Address, Special\_Needs, Pay\_Method)

**Proprietor** (*Proprietor\_Id*, FName, Sname, Address, County, Date\_Of\_Birth, Email, Mobile\_No, Foreign\_Language (*French, German, Italian, Dutch*))

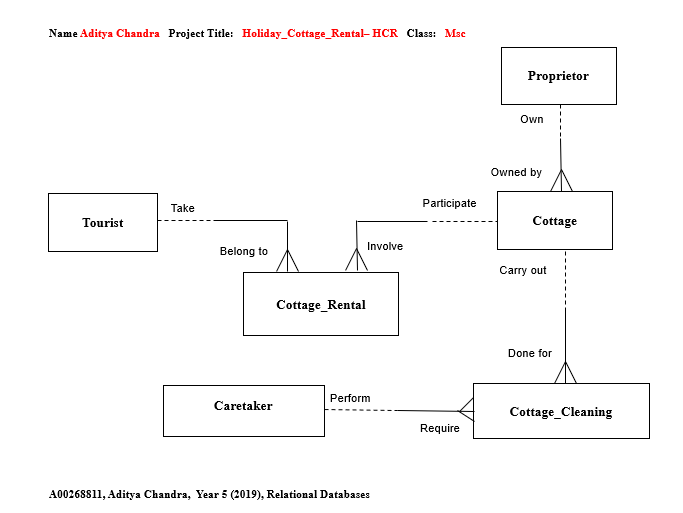
**Cottage** (*Cottage\_Id*, Cottage\_Address, Town, County, Proprietor\_Id, Grade (*2 star, etc*), Special\_Features (*TV, Internet Point, Sauna*), Num\_Bedrooms, Heating (*Oil, Gas, Solid Fuel),* Year\_Built, Type (*Dormer, Bungalow, Two Storey*), Cost, Market\_Value)

**Cottage\_Rental** (Cottage\_Id, Rental\_Date, Num\_Nights, Num\_Guests, Total\_Due, Deposit\_Paid, Pay\_Method (*Cheque, Cash, Credit Card)*), Tourist\_Id)

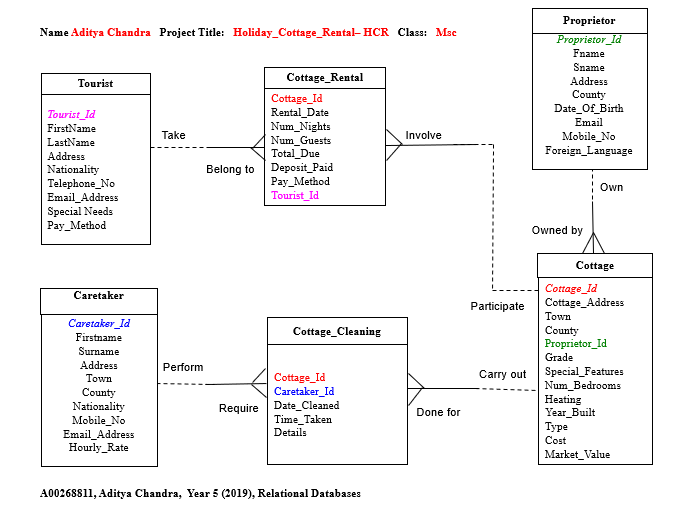
**Caretaker** (*Caretaker\_Id*, FirstName, Surname, Address, Town, County, Nationality, Mobile\_No, Email\_Address, Hourly\_Rate)

**Cottage\_Cleaning** (Cottage\_Id, Caretaker\_Id, Date\_Cleaned, Time\_Taken *(Hours),* Details *(Note of any Damage, Items Stolen, etc))*

# 3. Entity Relationship Diagram (ERD)



# 4. Extended ERD



# 5. Create Table Statements

Tables are created in hierarchical order meaning parent tables are created before their respective child tables due to the usage of primary keys and foreign keys.

Drop Table Cottage\_Cleaning;

Drop Table Caretaker;

Drop Table Cottage\_Rental;

Drop Table Cottage;

Drop Table Proprietor;

Drop Table Tourist;

Drop Table Tourist;

Create Table Tourist(

Tourist\_Id Number (2) ,

FirstName Varchar2 (10) Constraint Tourist\_FirstName\_Nn Not Null,

LastName Varchar2 (10) Constraint Tourist\_LastName\_Nn Not Null,

Address Varchar2 (20),

Nationality Varchar2 (7),

Telephone\_No Number (10),

Email\_Address Varchar2 (25),

Special\_Needs Varchar2 (17) ,

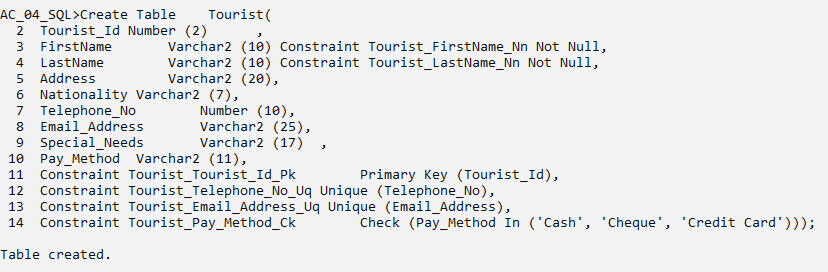
Pay\_Method Varchar2 (11),

Constraint Tourist\_Tourist\_Id\_Pk Primary Key (Tourist\_Id),

Constraint Tourist\_Telephone\_No\_Uq Unique (Telephone\_No),

Constraint Tourist\_Email\_Address\_Uq Unique (Email\_Address),

Constraint Tourist\_Pay\_Method\_Ck Check (Pay\_Method In ('Cash', 'Cheque', 'Credit Card')));



Drop Table Proprietor;

Create Table Proprietor(

Proprietor\_Id Number (4),

Fname Varchar2 (9) Constraint Proprietor\_FName\_Nn Not Null,

Sname Varchar2 (10) Constraint Proprietor\_SName\_Nn Not Null,

Address Varchar2 (22),

County Varchar2 (7),

Date\_Of\_Birth Date,

Email Varchar2 (27),

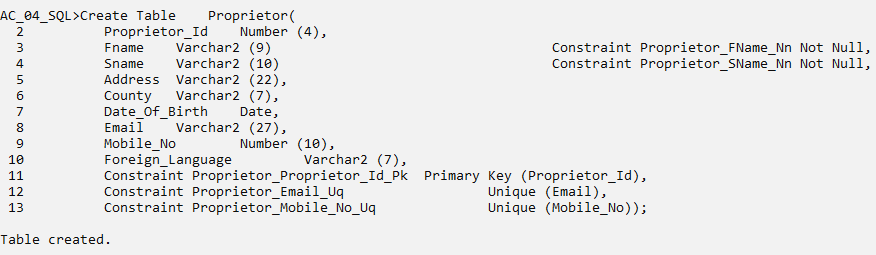
Mobile\_No Number (10),

Foreign\_Language Varchar2 (7),

Constraint Proprietor\_Proprietor\_Id\_Pk Primary Key (Proprietor\_Id),

Constraint Proprietor\_Email\_Uq Unique (Email),

Constraint Proprietor\_Mobile\_No\_Uq Unique (Mobile\_No));



Drop Table Cottage;

Create Table Cottage(

Cottage\_Id Number (3),

Cottage\_Address Varchar2 (21),

Town Varchar2 (10),

County Varchar2 (9),

Proprietor\_Id Number (4),

Grade Varchar2 (6) Constraint Cottage\_Grade\_Nn Not Null,

Special\_Features Varchar2 (8),

Num\_Bedrooms Number (2),

Heating Varchar2 (10),

Year\_Built Number (4),

Type Varchar2 (10),

Cost Number (4),

Market\_Value Number (4),

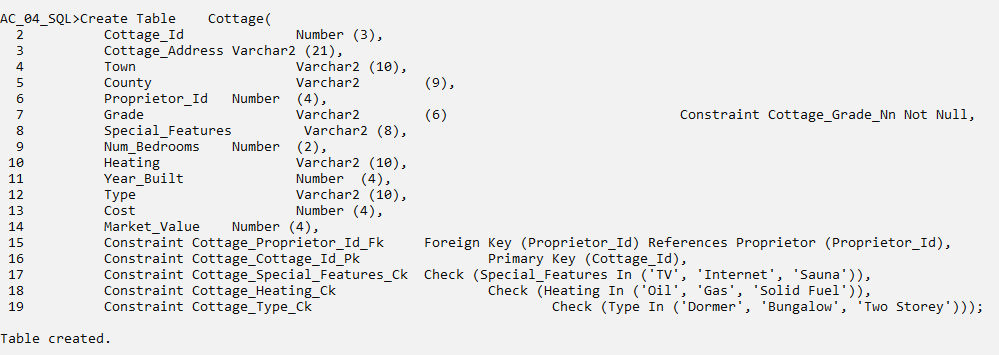
Constraint Cottage\_Proprietor\_Id\_Fk Foreign Key (Proprietor\_Id) References Proprietor (Proprietor\_Id),

Constraint Cottage\_Cottage\_Id\_Pk Primary Key (Cottage\_Id),

Constraint Cottage\_Special\_Features\_Ck Check (Special\_Features In ('TV', 'Internet', 'Sauna')),

Constraint Cottage\_Heating\_Ck Check (Heating In ('Oil', 'Gas', 'Solid Fuel')),

Constraint Cottage\_Type\_Ck Check (Type In ('Dormer', 'Bungalow', 'Two Storey')));



Drop Table Cottage\_Rental;

Create Table Cottage\_Rental (

Cottage\_Id Number (3),

Rental\_Date Date Constraint Cottage\_Rental\_Rental\_Date\_Nn Not Null,

Num\_Nights Number (2) Constraint Cottage\_Rental\_Num\_Nights\_Nn Not Null,

Num\_Guests Number (2) Constraint Cottage\_Rental\_Num\_Guests\_Nn Not Null,

Total\_Due Number (3),

Deposit\_Paid Number (2),

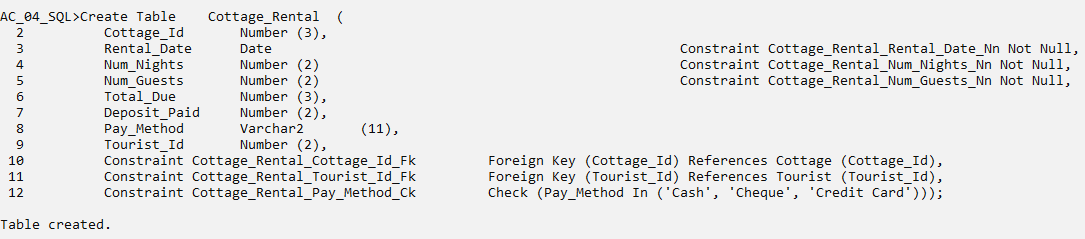
Pay\_Method Varchar2 (11),

Tourist\_Id Number (2),

Constraint Cottage\_Rental\_Cottage\_Id\_Fk Foreign Key (Cottage\_Id) References Cottage (Cottage\_Id),

Constraint Cottage\_Rental\_Tourist\_Id\_Fk Foreign Key (Tourist\_Id) References Tourist (Tourist\_Id),

Constraint Cottage\_Rental\_Pay\_Method\_Ck Check (Pay\_Method In ('Cash', 'Cheque', 'Credit Card')));



Drop Table Caretaker;

Create Table Caretaker(

Caretaker\_Id Number (4),

Firstname Varchar2 (7) Constraint Caretaker\_Firstname\_Nn Not Null,

Surname Varchar2 (9) Constraint Caretaker\_Surname\_Nn Not Null,

Address Varchar2 (19),

Town Varchar2 (9),

County Varchar2 (9),

Nationality Varchar2 (7),

Mobile\_No Number (10),

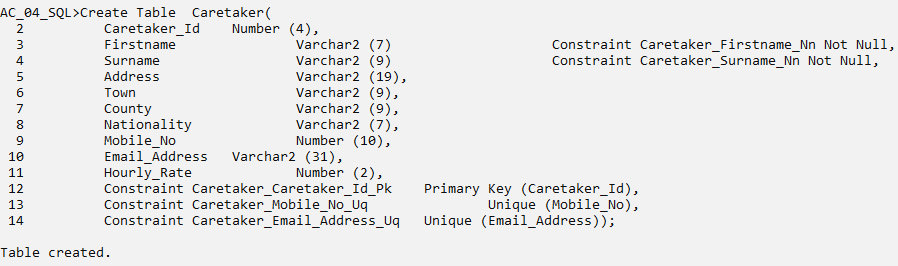
Email\_Address Varchar2 (31),

Hourly\_Rate Number (2),

Constraint Caretaker\_Caretaker\_Id\_Pk Primary Key (Caretaker\_Id),

Constraint Caretaker\_Mobile\_No\_Uq Unique (Mobile\_No),

Constraint Caretaker\_Email\_Address\_Uq Unique (Email\_Address));



Drop Table Cottage\_Cleaning;

Create Table Cottage\_Cleaning(

Cottage\_Id Number (3),

Caretaker\_Id Number (4),

Date\_Cleaned Date,

Time\_Taken Number (2),

Details Varchar2 (20),

Constraint Cottage\_Cleaning\_Cottage\_Id\_Fk Foreign Key (Cottage\_Id) References Cottage (Cottage\_Id),

Constraint CC\_Caretaker\_Id\_Fk Foreign Key (Caretaker\_Id) References Caretaker (Caretaker\_Id));



# 6. Insert Statements

/\* Table Name: Tourist \*/

/\* Tourist\_Id, FirstName, Lastname, Address, Nationality, Telephone\_No, Email\_Address, Special\_Needs, Pay\_Method \*/

Insert Into Tourist Values(1, 'Desirae', 'Peck', '3966 Aliquet. Av.', 'German', 8337292640, 'Dese\_Peck@sitamet.org', 'Extra bed', 'Cheque');

Insert Into Tourist Values(2, 'Mercedes', 'Rasemussen', '6943 Tempus Av.', 'French', 7215847686, 'Merc\_Rasmu@enim.net', 'Wheelchair', 'Cheque');

Insert Into Tourist Values(3, 'Rina', 'English', '2420 Semper Rd.', 'Irish', 4715423628, 'R\_English@egestas.net', 'Extra bed', 'Cash');

Insert Into Tourist Values(4, 'Lyle', 'Boyer', '5718 Ante Ave', 'German', 5266592878, 'Lyle\_Br@Crassed.com', 'Extra bed', 'Cheque');

Insert Into Tourist Values(5, 'Jada', 'Maxwell', '7181 Trist Avenue', 'Italian', 4907498568, 'Jada\_Max@dictum.net', NULL, 'Credit Card');

Insert Into Tourist Values(6, 'Raya', 'Hall', '92 Eleifend Rd.', 'Irish', 9142515033, 'Raya\_Hall@Nulla.org', 'Vehicle with ramp', 'Cash');

Insert Into Tourist Values(7, 'Vanna', 'Alvarez', '4596 Sit Rd.', 'German', 2174944039, 'Van\_Alvarez@vulputa.ca', 'Vehicle with ramp', 'Credit Card');

Insert Into Tourist Values(8, 'Wesley', 'Berg', '3460 Enim, Rd.', 'British', 9326779684, 'Wes\_Berg@nectem.net', NULL, 'Cheque');

Insert Into Tourist Values(9, 'Ashely', 'Bolton', '368 Molestie St.', 'German', 4609697717, 'Ash\_Bolt@mussit.com', NULL, 'Cash');

Insert Into Tourist Values(10, 'Mohammad', 'Wheeler', '1934 Quisque Road', 'British', 9988096309, 'Wheeler@atarcu.org', 'Tour guide', 'Cash');

Insert Into Tourist Values(11, 'Quinttessa', 'Morton', '9216 Quam. Rd.', 'Irish', 7124517004, 'Q\_Morton@dolorvit.ca', 'Extra bed', 'Credit Card');

Insert Into Tourist Values(12, 'Julian', 'Blackwell', '9645 In St.', 'British', 6706703498, 'Julian@vulputi.edu', 'Wheelchair', 'Credit Card');

Insert Into Tourist Values(13, 'Ivan', 'Grimes', '8421 Nunc Ave', 'German', 5179841869, 'Ivan\_Grimes@vlorem.com', NULL, 'Cash');

Insert Into Tourist Values(14, 'Karen', 'Thornton', '9411 Euismode Street', 'Irish', 7778492771, 'Karen\_Thornton@infelis.ca',NULL, 'Credit Card');

Insert Into Tourist Values(15, 'Joan', 'Logan', '8657 Nunc Street', 'British', 3513894564, 'Joan\_Logan@hendrer.edu', NULL, 'Cheque');

Insert Into Tourist Values(16, 'Florence', 'Mckenzie', '96 Diam St.', 'French', 6078715616, 'Flo\_Mckenzie@arcuSed.com', NULL, 'Credit Card');

Insert Into Tourist Values(17, 'Nita', 'Graves', '990 Nullam Rd.', 'Italian', 2284399520, 'Nita\_Graves@justo.net', 'Tour guide', 'Credit Card');

Insert Into Tourist Values(18, 'Raya', 'Carr', '150 Arcu. Road', 'British', 9531150264, 'Raya@sed.net', 'Extra bed', 'Cash');

/\* Table Name: Proprietor \*/

/\* Proprietor\_Id, Fname, Sname, Address, County, Date\_Of\_Birth, Email, Mobile\_No, Foreign\_Language \*/

Insert Into Proprietor Values(1001, 'Brady', 'Pollard', '6107 Egestas Rd.', 'Clare', '26-Aug-1966', 'BradyPollard@adipiscing.ca', 7956962931, 'Dutch');

Insert Into Proprietor Values(1002, 'Anne', 'Lambert', '2324 Non, Street', 'Kildare', '09-Sep-1995', 'AnneLambert@pharetra.edu', 3081559496, 'French');

Insert Into Proprietor Values(1003, 'Cade', 'Rivas', '951-5328 At Av.', 'Donegal', '18-Oct-1959', 'CadeRivas@nonum.com', 1859454051, 'French');

Insert Into Proprietor Values(1004, 'Geraldine', 'Wall', '4937 Sit Av.', 'Cork', '09-Jul-1978', 'GeraldineWall@amet.edu', 2168667111, 'Italian');

Insert Into Proprietor Values(1005, 'Zelda', 'Logan', '8307 Neque Road', 'Mayo', '02-Apr-1965', 'ZeldaLogan@eueuis.co.uk', 8768223359, 'German');

Insert Into Proprietor Values(1006, 'Pascale', 'Huffman', '524-5772 Et St.', 'Mayo', '20-Feb-1960', 'PascaleHuffman@lacinia.ca', 4198079528, 'French');

Insert Into Proprietor Values(1007, 'Nicole', 'Whitley', '7308 Eu Av.', 'Donegal', '18-Jan-1974', 'NicoleWhitley@egestas.co.uk', 1024624547, NULL);

Insert Into Proprietor Values(1008, 'Mary', 'Byrd', '889 Non Av.', 'Kildare', '12-Oct-1993', 'MaryByrd@semper.org', 2746680478, 'German');

Insert Into Proprietor Values(1009, 'Chase', 'Tyson', '7111 Laoreet Rd.', 'Cork', '27-Aug-1974', 'ChaseTyson@neque.co.uk', 9101901194, 'Dutch');

Insert Into Proprietor Values(1010, 'Zephania', 'Roy', '2771 Vehicula St.', 'Donegal', '26-Dec-1993', 'ZephaniaRoy@sodales.org', 2147498486, 'German');

Insert Into Proprietor Values(1011, 'Sandra', 'Lynn', '3190 Interdum. Ave', 'Clare', '30-Oct-1995', 'SandraLynn@pellen.net', 2954244225, 'Italian');

Insert Into Proprietor Values(1012, 'Eleanor', 'Golden', '358-2682 Curabitur St.', 'Mayo', '06-Jun-1988', 'EleanorGolden@orci.com', 8855282211, 'German');

Insert Into Proprietor Values(1013, 'Adria', 'Montgomery', '6336 Ligula. Avenue', 'Donegal', '28-Nov-1975', 'AdriaMontgomery@eget.org', 7383462382, NULL);

Insert Into Proprietor Values(1014, 'Judith', 'Graves', '6102 Dictum Road', 'Kildare', '11-Jun-1998', 'JudithGraves@sem.org', 7935972556, 'French');

/\* Table Name: Cottage \*/

/\* Cottage\_Id, Cottage\_Address, Town, County, Proprietor\_Id, Grade, Special\_Features, Num\_Bedrooms, Heating, Year\_Built, Type, Cost, Market\_Value \*/

Insert Into Cottage Values(101, '8967 Massa. Rd.', 'Newbridge', 'Kildare', 1004, '1 star', NULL, 10, 'Solid Fuel', 1920, 'Two Storey', 3000, 3400);

Insert Into Cottage Values(102, '4000 Euismod Ave', 'Youghal', 'Cork', 1004, '5 star', 'TV', 50, 'Oil', 1968, 'Two Storey', 3000, 2200);

Insert Into Cottage Values(103, '9932 Placerat. St.', 'Athlone', 'Westmeath', 1002, '5 star', 'Internet', 20, 'Gas', 1985, 'Dormer', 6500, 3400);

Insert Into Cottage Values(104, '8354 Donec Road', 'Letterkeny', 'Donegal', 1007, '4 star', 'Sauna', 30, 'Gas', 1875, 'Dormer', 7000, 8400);

Insert Into Cottage Values(105, '8616 Vestibulum St.', 'Letterkeny', 'Donegal', 1009, '3 star', 'Sauna', 30, 'Solid Fuel', 1986, 'Bungalow', 3000, 3600);

Insert Into Cottage Values(106, '7493 Iaculis Av.', 'Newbridge', 'Kildare', 1006, '4 star', 'TV', 20, 'Gas', 1915, 'Two Storey', 1000, 2200);

Insert Into Cottage Values(107, '310-5914 Mauris St.', 'Athlone', 'Westmeath', 1010, '2 star', 'Internet', 40, 'Solid Fuel', 1908, 'Bungalow', 2000, 3600);

Insert Into Cottage Values(108, '4643 Cursus Road', 'Youghal', 'Cork', 1012, '2 star', NULL, 20, 'Gas', 1960, 'Bungalow', 1500, 2400);

Insert Into Cottage Values(109, '6311 Cursus, Road', 'Mullingar', 'Westmeath', 1004, '1 star', NULL, 20, 'Gas', 1965, 'Two Storey', 6000, 5500);

Insert Into Cottage Values(110, '6167 Nulla Avenue', 'Lifford', 'Donegal', 1011, '1 star', 'TV', 10, 'Oil', 1926, 'Dormer', 1500, 3000);

Insert Into Cottage Values(111, '7853 Elementum Street', 'Mullingar', 'Westmeath', 1010, '5 star', 'Sauna', 50, 'Solid Fuel', 1961, 'Dormer', 5000, 2600);

Insert Into Cottage Values(112, '5305 At, Rd.', 'Lifford', 'Donegal', 1008, '4 star', 'Internet', 10, 'Solid Fuel', 1961, 'Dormer', 1000, 2200);

/\* Table Name: Cottage\_Rental \*/

/\* Cottage\_Id, Rental\_Date, Num\_Nights, Num\_Guests, Total\_Due, Deposit\_Paid, Pay\_Method, Tourist\_Id \*/

Insert Into Cottage\_Rental Values(101, '14-Dec-2018', 1, 3, 699, 87, 'Cash', 10);

Insert Into Cottage\_Rental Values(107, '03-Jun-2019', 6, 9, 161, 62, 'Cash', 5);

Insert Into Cottage\_Rental Values(101, '12-Feb-2019', 5, 4, 901, 88, 'Cheque', 15);

Insert Into Cottage\_Rental Values(104, '06-Jul-2019', 2, 7, 588, 88, 'Cheque', 5);

Insert Into Cottage\_Rental Values(105, '16-May-2019', 4, 4, 298, 78, 'Credit Card', 2);

Insert Into Cottage\_Rental Values(110, '04-Oct-2018', 8, 2, 657, 65, 'Cheque', 12);

Insert Into Cottage\_Rental Values(111, '14-Jan-2019', 2, 8, 963, 63, 'Credit Card', 6);

Insert Into Cottage\_Rental Values(108, '27-Jan-2019', 9, 10, 879, 77, 'Credit Card', 4);

Insert Into Cottage\_Rental Values(109, '23-Oct-2019', 6, 3, 657, 67, 'Cheque', 5);

Insert Into Cottage\_Rental Values(110, '19-Mar-2019', 6, 8, 776, 54, 'Credit Card', 9);

Insert Into Cottage\_Rental Values(111, '17-Mar-2019', 9, 5, 149, 84, 'Cheque', 18);

Insert Into Cottage\_Rental Values(112, '27-Jul-2019', 10, 8, 549, 84, 'Credit Card', 8);

Insert Into Cottage\_Rental Values(110, '21-Nov-2019', 8, 8, 497, 75, 'Cash', 12);

Insert Into Cottage\_Rental Values(111, '25-Jul-2019', 10, 3, 607, 95, 'Cash',6);

Insert Into Cottage\_Rental Values(105, '04-Aug-2019', 10, 1, 404, 78, 'Cash', 9);

/\* Table Name: Caretaker \*/

/\* Caretaker\_Id, FirstName, Surname, Address, Town, County, Nationality, Mobile\_No, Email\_Address, Hourly\_Rate \*/

Insert Into Caretaker Values(100, 'Ivana', 'Murray', '2394 Magnis St.', 'Belfast', 'Antrim', 'French', 2044034174, 'Ivana\_Murray@non.com', 11);

Insert Into Caretaker Values(200, 'Isadora', 'Hamilton', '5560 Vivamus Rd.', 'Lifford', 'Donegal', 'Italian', 5958812126, 'Isadora\_Hamilton@velsapien.com', 28);

Insert Into Caretaker Values(300, 'Brynne', 'Morgan', '781-8597 Dictum Rd.', 'Naas', 'Kildare', 'British', 8894509557, 'Brynne\_Morgan@Donec.net', 27);

Insert Into Caretaker Values(400, 'Pearl', 'Contreras', '9548 Amet, Street', 'Cork', 'Cork', 'Italian', 8924305239, 'Pearl\_Contreras@etnetuset.co.uk', 11);

Insert Into Caretaker Values(500, 'Zelenia', 'Barry', '4872 Placerat St.', 'Lifford', 'Donegal', 'French', 889736247, 'Zelenia\_Barry@sem.ca', 30);

Insert Into Caretaker Values(600, 'Lionel', 'Huffman', '6224 Id, Rd.', 'Ennis', 'Clare', 'Italian', 136447526, 'Lionel\_Huffman@Curab.co.uk', 10);

Insert Into Caretaker Values(700, 'Judah', 'Coffey', '744 Eu Rd.', 'Mullingar', 'Westmeath', 'French', 5552745031, 'Judah\_Coffey@augueut.com', 5);

Insert Into Caretaker Values(800, 'Fatima', 'Ellis', '222 Cras Rd.', 'Tullamore', 'Offaly', 'British', 4813677667, 'Fatima\_Ellis@ante.co.uk', 18);

Insert Into Caretaker Values(900, 'Slade', 'Peters', '2299 Nunc St.', 'Belfast', 'Antrim', 'British', 3509879905, 'Slade\_Peters@primisin.ca', 21);

Insert Into Caretaker Values(1000, 'Brenda', 'Hess', '8738 Magnis St.', 'Naas', 'Kildare', 'Italian', 7116732046, 'Brenda\_Hess@massarutru.com', 14);

Insert Into Caretaker Values(1100, 'Keith', 'Welch', '832-1634 A, Rd.', 'Cork', 'Cork', 'French', 9854771831, 'Keith\_Welch@ultric.edu', 29);

Insert Into Caretaker Values(1200, 'Giacomo', 'Huffman', '2071 Dignissim St.', 'Lifford', 'Donegal', 'Irish', 2007498283, 'Giacomo\_Huffman@amet.com', 19);

/\* Table Name: Cottage\_Cleaning \*/

/\* Cottage\_Id, Caretaker\_Id, Date\_Cleaned, Time\_Taken, Details \*/

Insert Into Cottage\_Cleaning Values(101, '1000', '09-Dec-2019', 12, 'Not cleaned properly');

Insert Into Cottage\_Cleaning Values (110, '600', '16-Jun-2019', 5,'Property damage');

Insert Into Cottage\_Cleaning Values (107, '800', '23-Jul-2019', 19, NULL);

Insert Into Cottage\_Cleaning Values (102, '300', '02-May-2019', 10, 'Property damage');

Insert Into Cottage\_Cleaning Values (109, '1100', '12-Jun-2019', 20, 'Item stolen');

Insert Into Cottage\_Cleaning Values (105, '200', '15-Jun-2019', 7, 'Item stolen');

Insert Into Cottage\_Cleaning Values (108, '300', '30-Jun-2019', 9, 'Item stolen');

Insert Into Cottage\_Cleaning Values (109, '200', '20-Jun-2019', 7, NULL);

Insert Into Cottage\_Cleaning Values (111, '300', '17-May-2019', 14, NULL);

Insert Into Cottage\_Cleaning Values (101, '500', '18-Jul-2019', 7, 'Property damage');

Insert Into Cottage\_Cleaning Values (107, '100', '14-Jul-2019', 6, 'Property damage');

Insert Into Cottage\_Cleaning Values (112, '300', '07-Apr-2019', 12, NULL);

Insert Into Cottage\_Cleaning Values (106, '600', '26-Apr-2019', 19, 'Item stolen');

Insert Into Cottage\_Cleaning Values (110, '900', '31-Dec-2019', 7, 'Not cleaned properly');

Insert Into Cottage\_Cleaning Values (101, '900', '07-Oct-2019', 17, 'Item stolen');

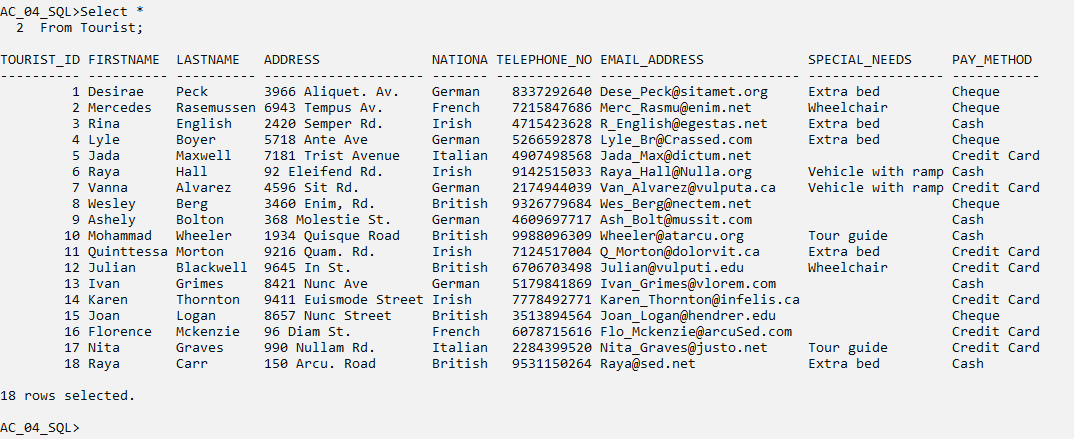
Insert Into Cottage\_Cleaning Values (109, '700', '20-Aug-2019', 10, NULL);

Insert Into Cottage\_Cleaning Values (109, '900', '08-Jun-2019', 7, 'Property damage');

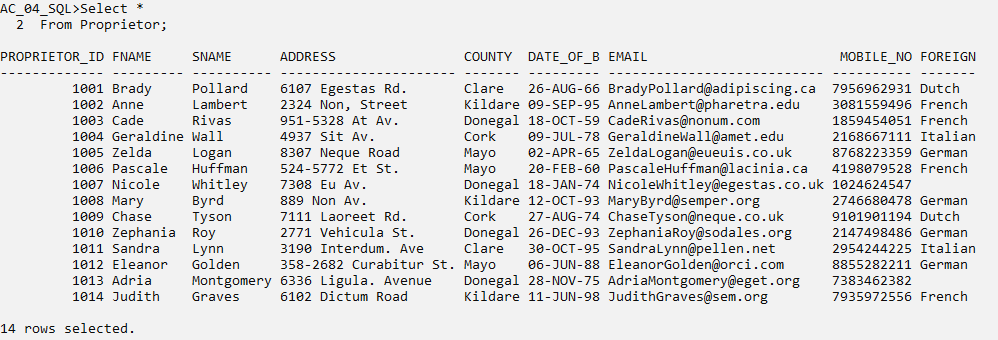
Insert Into Cottage\_Cleaning Values (103, '300', '02-Feb-2019', 19, NULL);

# 7. Tables

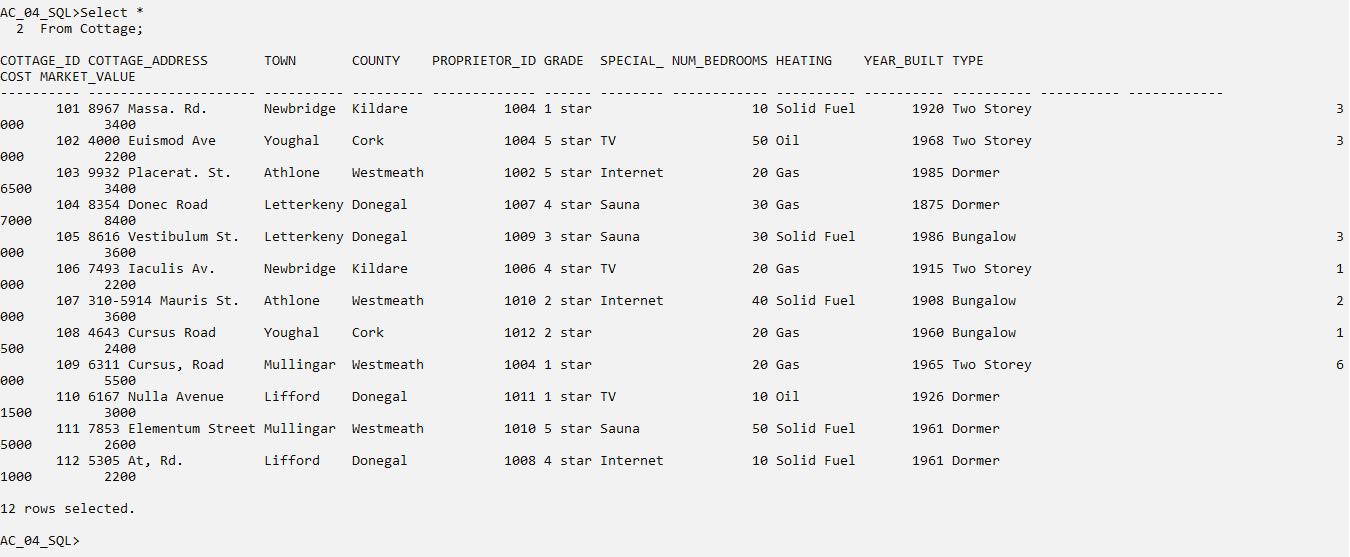
Tourist



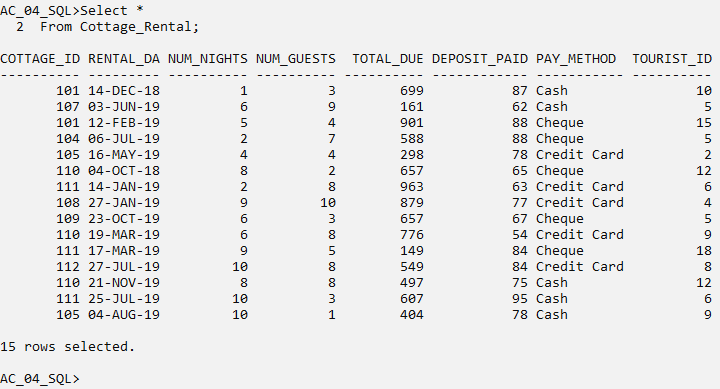
Proprietor



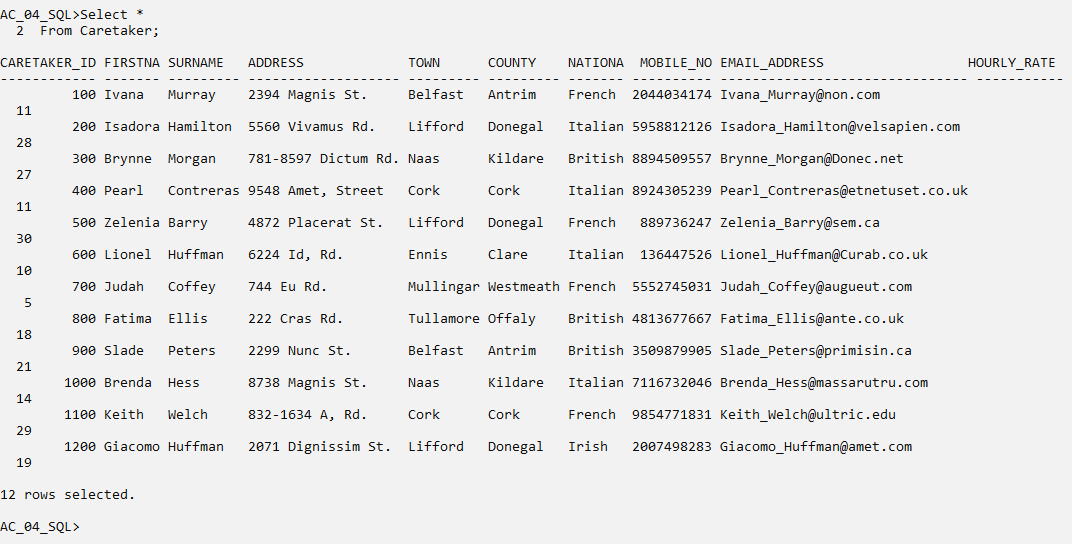
Cottage



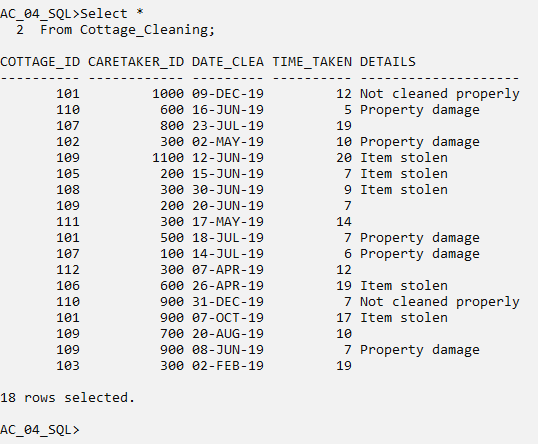
Cottage\_Rental



Caretaker



Cottage\_Cleaning



# 8. Queries

## 8.1. Single Table Query

Spool F:\A00268811\_SQL\_Project\_Query.txt

Q1. Show the first name, last name, phone number, nationality and special needs of tourists who requested extra bed or tour guide and whose payment method is “Cash”. Sort the result by nationality.

Cl scr

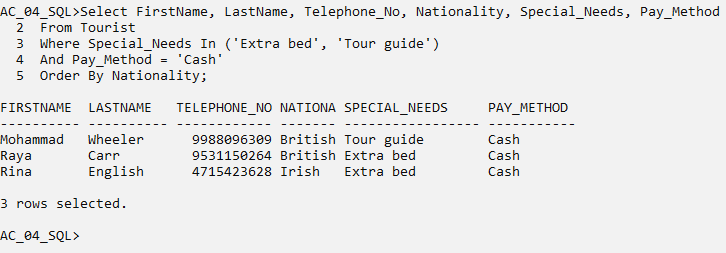
Select FirstName, LastName, Telephone\_No, Nationality, Special\_Needs, *Pay\_Method*

From Tourist

Where Special\_Needs In ('Extra bed', 'Tour guide')

And Pay\_Method = 'Cash'

Order By Nationality;



## 8.2. Queries involving Joins

Q2. Show the cottage Id, town, grade, market value, proprietor forename and email for those cottages whose proprietor’s forename starts with letter A. Sort the result by proprietor forename.

Cl scr

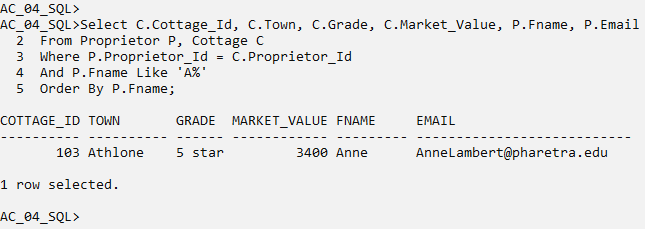
Select C.Cottage\_Id, C.Town, C.Grade, C.Market\_Value, P.Fname, P.Email

From Proprietor P, Cottage C

Where P.Proprietor\_Id = C.Proprietor\_Id

And P.Fname Like 'A%'

Order By P.Fname;



## 8.3. Queries involving Joins (2)

Q3. Give the firstname, surname, town and hourly rate of those caretakers who takes more than 10 hours for cleaning a cottage and where some items were stolen. Arrange the result in reverse order of surname.

Cl scr

Select CT.Firstname, CT.Surname, CT.Town, CT.Hourly\_Rate, *CC.Time\_Taken, CC.Details*

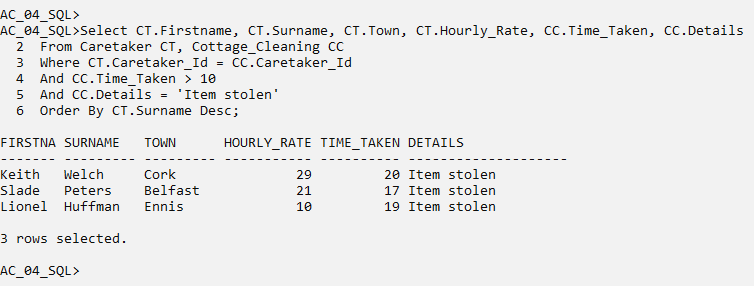
From Caretaker CT, Cottage\_Cleaning CC

Where CT.Caretaker\_Id = CC.Caretaker\_Id

And CC.Time\_Taken > 10

And CC.Details = 'Item stolen'

Order By CT.Surname Desc;



## 8.4. Queries involving Joins (3)

Q4. List the cottage id, cleaning date, number of bedrooms and heating method of those cottages that have at least 30 bedroom. Also list the surname and county of the proprietor for those cottages. Limit the result to those cottages whose proprietor hails from “Donegal” or “Cork” county. Arrange the result in increasing order of number of bedrooms and then by the cleaning date.

Cl scr

Select CC.Cottage\_Id, CC.Date\_Cleaned, C.Num\_Bedrooms, C.Heating, P.Sname, P.County

From Proprietor P, Cottage C, Cottage\_Cleaning CC

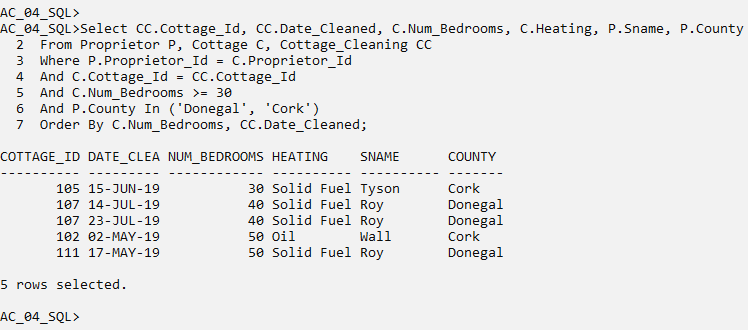
Where P.Proprietor\_Id = C.Proprietor\_Id

And C.Cottage\_Id = CC.Cottage\_Id

And C.Num\_Bedrooms >= 30

And P.County In ('Donegal', 'Cork')

Order By C.Num\_Bedrooms, CC.Date\_Cleaned;



## 8.5. Join involving more than 2 Tables and Non-Equi Join

Q5. Show the first name, mobile number and hourly rate of those caretakers whose hourly rate is less than as number of bedrooms in a cottage they cleaned. Arrange the result in reverse order of hourly rate.

Cl scr

Select CT.Firstname, CT.Mobile\_No, CT.Hourly\_Rate, *C.Num\_Bedrooms*

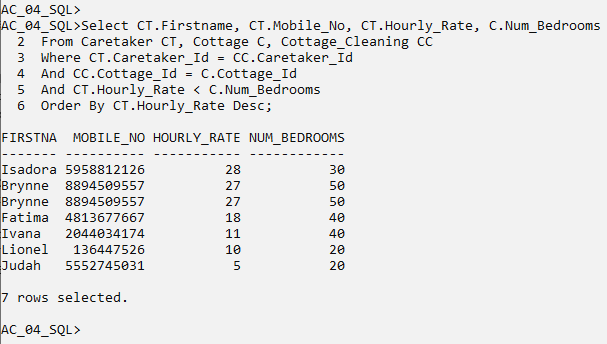
From Caretaker CT, Cottage C, Cottage\_Cleaning CC

Where CT.Caretaker\_Id = CC.Caretaker\_Id

And CC.Cottage\_Id = C.Cottage\_Id

And CT.Hourly\_Rate < C.Num\_Bedrooms

Order By CT.Hourly\_Rate Desc;



## 8.6. Queries involving Sub-Query

Q6. Give the Id, address, town, county, grade, special features, number of bedrooms, heating and type of those cottages where grade is higher than “2 star”, whose proprietor can speak either “Dutch” or “German” and is born after 01-Jan-1990. Sort the result in descensing order of grade.

Cl scr

Select Cottage\_Id, Cottage\_Address, Town, County, Grade, Special\_Features, Num\_Bedrooms, Heating, Type

From Cottage

Where Grade Not In ('1 star', '2 star')

And Proprietor\_Id In

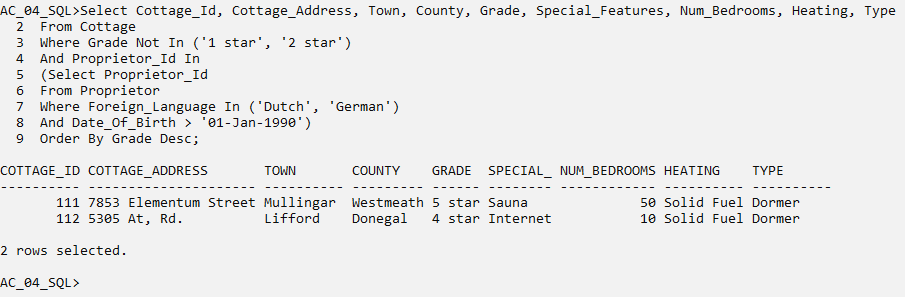
(Select Proprietor\_Id

From Proprietor

Where Foreign\_Language In ('Dutch', 'German')

And Date\_Of\_Birth > '01-Jan-1990')

Order By Grade Desc;



## 8.7. Sub-Query with Summary Query

Q7. List the first name, last name, special needs, deposit paid and the payment method for the rental for those tourists who have paid the highest deposit through cash.

Cl scr

Select T.FirstName, T.LastName, T.Special\_Needs, CR.Deposit\_Paid, CR.Pay\_Method

From Tourist T, Cottage\_Rental CR

Where T.Tourist\_Id = CR.Tourist\_Id

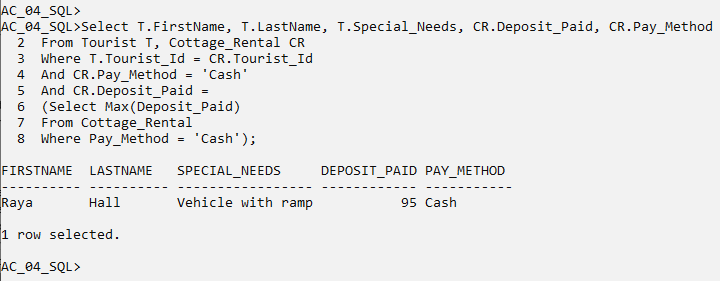
And CR.Pay\_Method = 'Cash'

And CR.Deposit\_Paid =

(Select Max(Deposit\_Paid)

From Cottage\_Rental

Where Pay\_Method = 'Cash');



## 8.8. Queries involving Self-Join

Q8. Give the last name, nationality and special needs for pair of tourists who come from same country. Ignore those tourists who do not have a special need.

Cl scr

Select T1.LastName, T1.Nationality, T1.Special\_Needs, T2.LastName, T2.Nationality, T2.Special\_Needs

From Tourist T1, Tourist T2

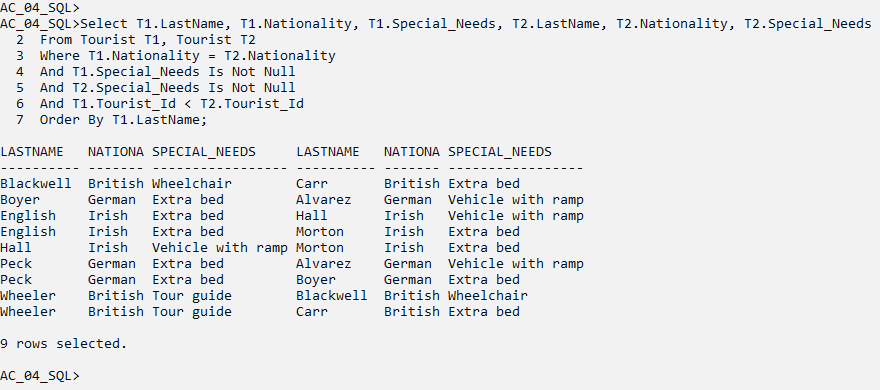
Where T1.Nationality = T2.Nationality

And T1.Special\_Needs Is Not Null

And T2.Special\_Needs Is Not Null

And T1.Tourist\_Id < T2.Tourist\_Id

Order By T1.LastName;



## 8.9. Queries involving Summary Query and Group By

Q9. For tourists of each nationality, show the minimum deposit paid, the average deposit paid, the maximum deposit paid and the difference between maximum and minimum deposit paid as range of deposit. Limit the output of average deposit paid to 2 decimal places and sort the result in ascending order of nationality.

Cl scr

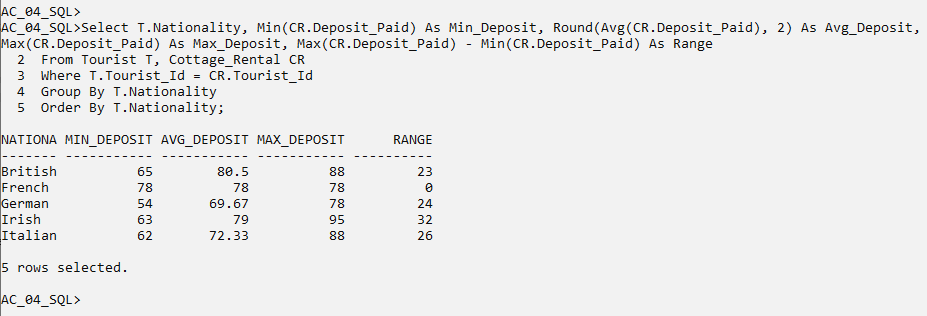
Select T.Nationality, Min(CR.Deposit\_Paid) As Min\_Deposit, Round(Avg(CR.Deposit\_Paid), 2) As Avg\_Deposit, Max(CR.Deposit\_Paid) As Max\_Deposit, Max(CR.Deposit\_Paid) - Min(CR.Deposit\_Paid) As Range

From Tourist T, Cottage\_Rental CR

Where T.Tourist\_Id = CR.Tourist\_Id

Group By T.Nationality

Order By T.Nationality;



## 8.10. Queries involving Sub-Query and Exists

Q10. Show the first name and last name of those proprietors who own a cottage with exactly 20 bedrooms, whose cost is less than 6500 euros and which are involved in any cottage rental.

Cl scr

Select Fname, Sname

From Proprietor

Where Proprietor\_Id In

(Select Proprietor\_Id

From Cottage

Where Num\_Bedrooms = 20

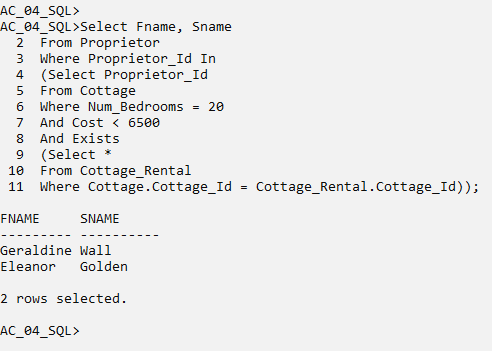
And Cost < 6500

And Exists

(Select \*

From Cottage\_Rental

Where Cottage.Cottage\_Id = Cottage\_Rental.Cottage\_Id));



## 8.11. Multi-Legged Subqueries

Q11. Select cottage id, grade and cost of those cottages where the cost is higher than 2000 euros and

1. a tourist has rented the cottage for more than 5 nights and total due amount is less than average total due amount and
2. the cleaning of the cottage had no issue and took longer than average cleaning time and
3. is owned by a proprietor from “Donegal” or “Kildare” county and whose name starts with letter other than ‘C'.

Cl scr

Select Cottage\_Id, Grade, Cost

From Cottage

Where Cost > 2000

And Cottage\_Id In

(Select Cottage\_Id

From Cottage\_Rental

Where Num\_Nights > 5

And Total\_Due <

(Select Avg(Total\_Due)

From Cottage\_Rental))

And Cottage\_Id In

(Select Cottage\_Id

From Cottage\_Cleaning

Where Details Is Null

And Time\_Taken >

(Select Avg(Time\_Taken)

From Cottage\_Cleaning))

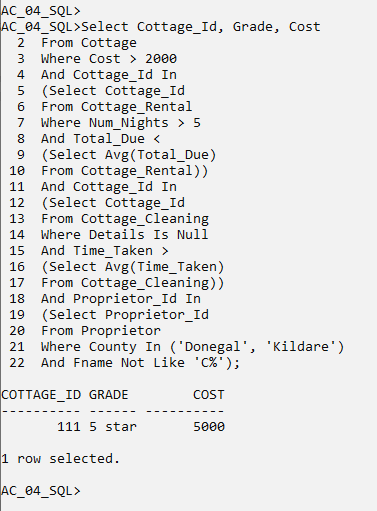
And Proprietor\_Id In

(Select Proprietor\_Id

From Proprietor

Where County In ('Donegal', 'Kildare')

And Fname Not Like 'C%');



## 8.12. Update Statement

Q12. Increase the hourly rate by 10 euros for those caretakers where the count of issues found during cleaning is at most 1 and whose nationality is “French” or “Italian”.

Cl scr

Select Caretaker\_Id, Hourly\_Rate, Nationality

From Caretaker

Where Caretaker\_Id In

(Select Caretaker\_Id

From Cottage\_Cleaning

Group By Caretaker\_Id

Having Count(Details) <= 1)

And Nationality In ('French', 'Italian');

Update Caretaker

Set Hourly\_Rate = Hourly\_Rate + 10

Where Caretaker\_Id In

(Select Caretaker\_Id

From Cottage\_Cleaning

Group By Caretaker\_Id

Having Count(Details) <= 1)

And Nationality In ('French', 'Italian');

Select Caretaker\_Id, Hourly\_Rate, Nationality

From Caretaker

Where Caretaker\_Id In

(Select Caretaker\_Id

From Cottage\_Cleaning

Group By Caretaker\_Id

Having Count(Details) <= 1)

And Nationality In ('French', 'Italian');

Rollback;

Select Caretaker\_Id, Hourly\_Rate, Nationality

From Caretaker

Where Caretaker\_Id In

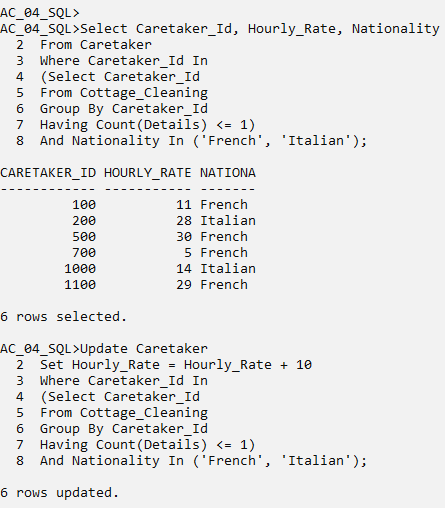
(Select Caretaker\_Id

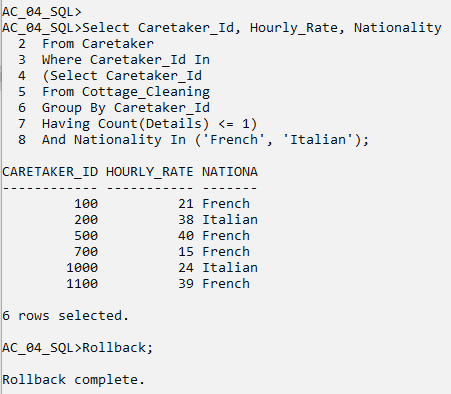
From Cottage\_Cleaning

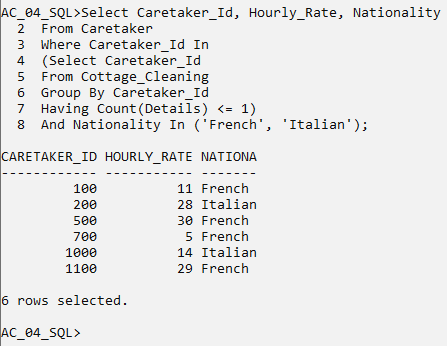
Group By Caretaker\_Id

Having Count(Details) <= 1)

And Nationality In ('French', 'Italian');







## 8.13. Delete Statement

Q13. Remove those cottage rentals where deposit paid is less than 75 and the cottage do not provide any special feature.

Cl scr

Select \*

From Cottage\_Rental

Where Deposit\_Paid < 75

And Cottage\_Id In

(Select Cottage\_Id

From Cottage

Where Special\_Features Is Null);

Delete

From Cottage\_Rental

Where Deposit\_Paid < 75

And Cottage\_Id In

(Select Cottage\_Id

From Cottage

Where Special\_Features Is Null);

Select \*

From Cottage\_Rental

Where Deposit\_Paid < 75

And Cottage\_Id In

(Select Cottage\_Id

From Cottage

Where Special\_Features Is Null);

Rollback;

Select \*

From Cottage\_Rental

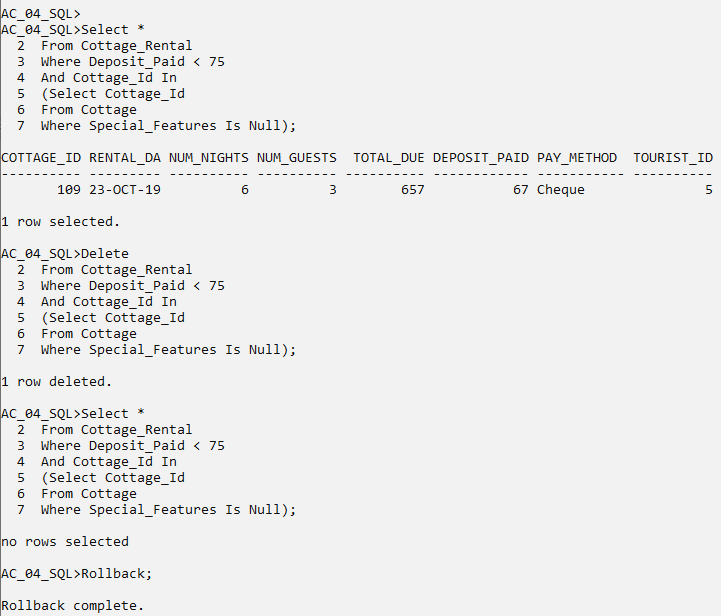
Where Deposit\_Paid < 75

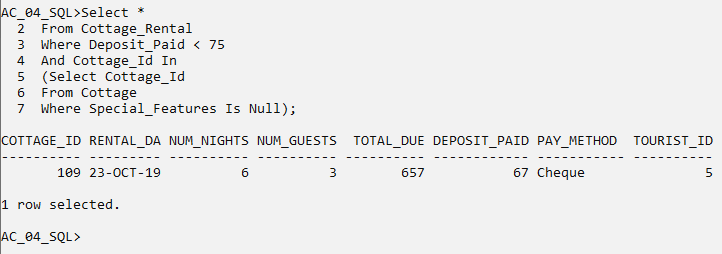
And Cottage\_Id In

(Select Cottage\_Id

From Cottage

Where Special\_Features Is Null);





## 8.14. Queries using Union

Q14. Select first name, last name and address (or their equivalent columns i.e., columns having similar information with different names) of tourist, proprietor and caretaker where proprietor and caretaker are from “Cork” county. Duplicate results should not appear in the output. Arrange the result by alphabetical order of first name.

Cl scr

Select FirstName, LastName, Address

From Tourist

Union

Select Fname, Sname, Address

From Proprietor

Where County = 'Cork'

Union

Select Firstname, Surname, Address

From Caretaker

Where County = 'Cork'

Order By 1;



## 8.15. Views involving Sub-Queries and Read-Only Condition

Q15. Devise a permanently stored query that stores the cottage id, tourist id, total due, deposit paid and their sum as total amount for tourists from Germany and France and for cottages in Westmeath and Kildare counties. Ensure that users are not able to carry out any DML operation on the view.

Cl scr

Drop View Rental1;

Create View Rental1 As

Select Cottage\_Id, Tourist\_Id, Total\_Due, Deposit\_Paid, Total\_Due + Deposit\_Paid As Total\_Amt

From Cottage\_Rental

Where Tourist\_Id In

(Select Tourist\_Id

From Tourist

Where Nationality In ('German', 'French'))

And Cottage\_Id In

(Select Cottage\_Id

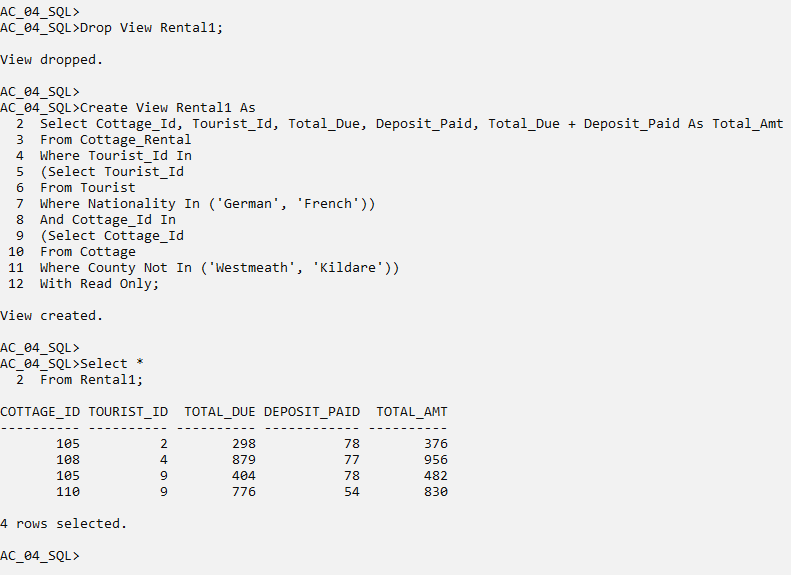
From Cottage

Where County Not In ('Westmeath', 'Kildare'))

With Read Only;

Select \*

From Rental1;



## 8.16. Query to retrieve data from View

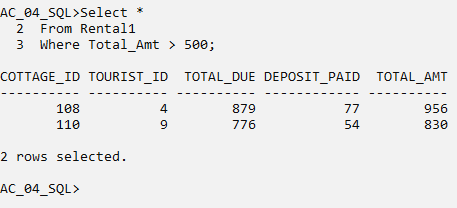
Q16. From the view created in previous question, show result for those cottage rentals where total amount is greater than 500.

Cl scr

Select \*

From Rental1

Where Total\_Amt > 500;



## 8.17. Query involving Rollup with Group By

Q17. For those proprietors whose first name ends “e”, list the firstname, cost of each cottage owned by the proprietor and the total cost of all the cottages owned by the proprietor.

Cl scr

Select P.Fname, C.Cottage\_Id, Sum(C.Cost)

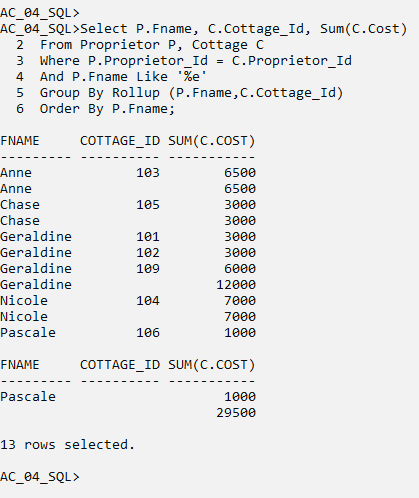
From Proprietor P, Cottage C

Where P.Proprietor\_Id = C.Proprietor\_Id

And P.Fname Like '%e'

Group By Rollup (P.Fname,C.Cottage\_Id)

Order By P.Fname;



## 8.18. Alter-Table Command

Q18. Add a column named ‘Age’ to proprietor table and populate it with age of the proprietor based on his/her date of birth.

Cl scr

Alter Table Proprietor

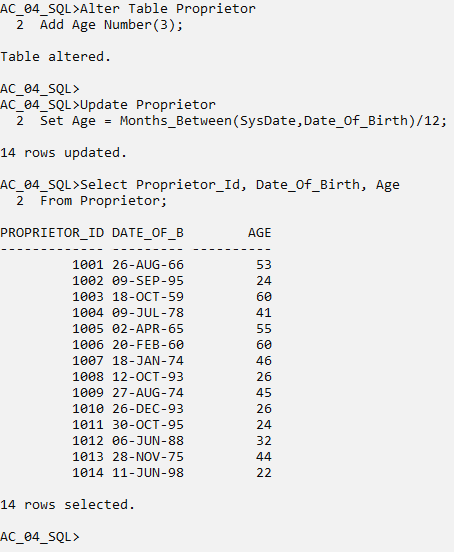
Add Age Number(3);

Update Proprietor

Set Age = Months\_Between(SysDate,Date\_Of\_Birth)/12;

Select Proprietor\_Id, Date\_Of\_Birth, Age

From Proprietor;



Spool off