THE TECHNOLOGICAL UNIVERSITY OF THE SHANNON: MIDLANDS MIDWEST

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| **Student Name:** | **Yanikepalli Sri Sekhar** |
| **Student Id Number:** | **A000325769** |
| **Course:** | **Masters in Data Analytics** |
| **Title of Assignment:** | **Relational Database Report** |
| **Date:** | **11 December 2024** |

## Declaration

I hereby certify that the material, which is submitted in this report towards the award of MSc. in Data Analytics, is entirely my own work and has not been submitted for any academic assessment other than part fulfilment of the above named award.

Signed Y.Sri Sekhar_____ Date 11/12/2024_____

**Table of Contents**

## Introduction

The dataset contains two primary entities **Hotel** and **Inspection** providing a clear view of hotel operations, facilities and their compliance with health and safety standards. Thses tables are connected with a "Hotel_Id" attribute which is the common identifier in both **Hotel** and **Inspection** tables, "Hotel_Id" is the primary key (PK) in **Hotel** table and foreign key (FK) in **Inspection** table.

## Hotel Table

The **Hotel** table contains some attributes which defines the critical information about the hotel. The attributes in which **Hotel** table contains are:

(Hotel_Id (PK), Name, Town, County, Web_Site, Year_Opened, Grade (3 Star, 4 Star, 5 Star), Num_Bedrooms, Cost, Specialism (one of Weddings, Concerts, Exhibitions), Num_Events (total number of events in a typical year - Weddings, Concerts etc) Market_Value)

## Inspection Table

The **Inspection** table contains some attributes which defines the critical information about the hotel inspection. The attributes in which **Inspection** table contains are:

(Inspection_Id (FK), Hotel_Id, Visit_Date, Overall_Score (value between 1 and 100), Outcome (One of Pass or Fail), Storage (i.e Quality of Storage Facilities for food – one of Poor, Fair, Adequate, Superb), Fine_Imposed(the amount of money the hotel was fined for failing a test, otherwise Null), Food_Prep_Area (Poor, Good, Excellent), Hygiene (Very Dirty, Satisfactory, Very Clean), Atmosphere (Poor, Good, Excellent), Staff_Expertise ( i.e. how well the hotel staff understand Health and Safety one of - Fair, Satisfactory, Excellent), Hotel_Id)

## Purpose of the Dataset

The dataset gives the result by combining operational data with inspection outcomes. The outcomes may useful to stakeholders can make informed decisions about investments, regulatory interventions, and service improvements in the hospitality industry.

**Entities and Attributes**

**Entities**

There is only two entities in these two table that is **Hotel and Inspection.**

**Attributes**

There are total 12 attributes in **Hotel** table, they are

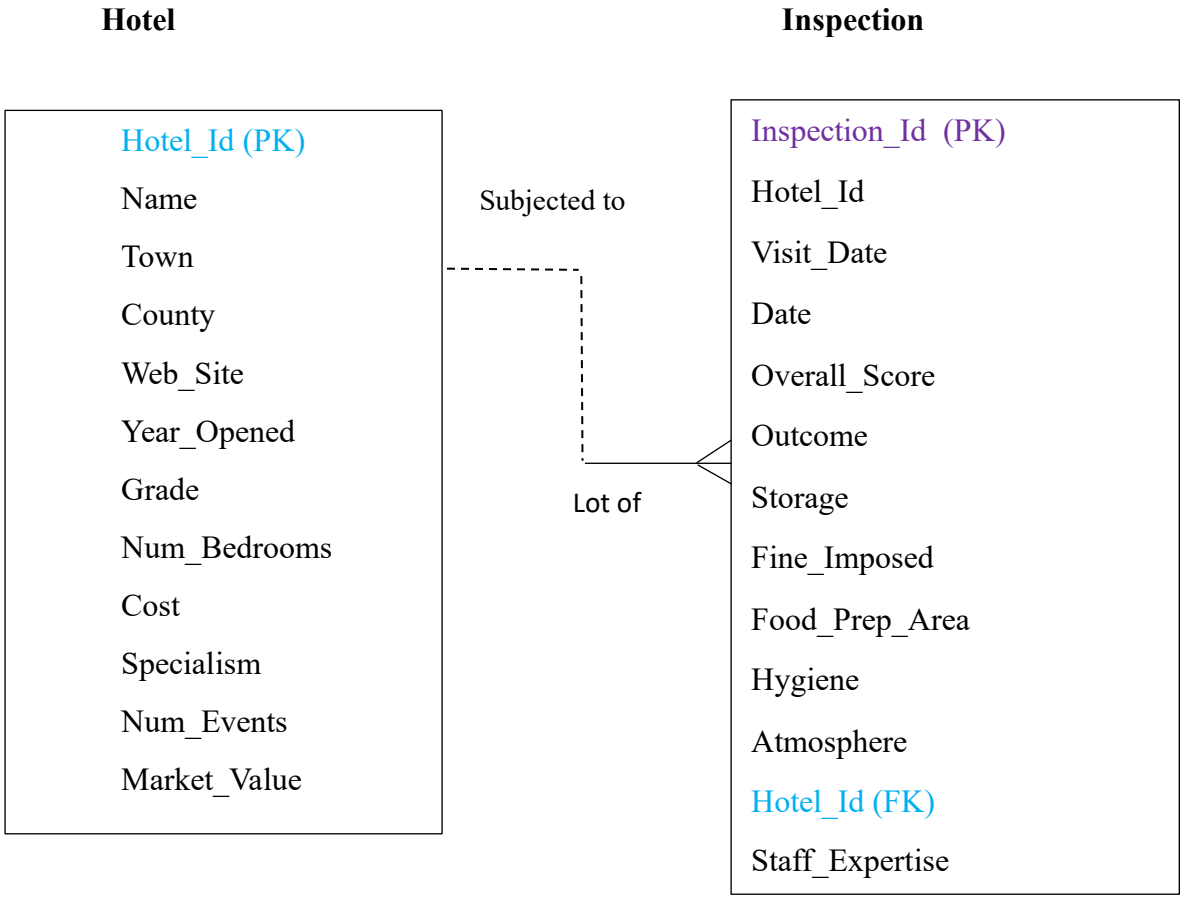
| | |
|---|---|
| Hotel_Id | Number(3) |
| Name | Varchar(35) |
| Town | Varchar(15) |
| County | Varchar(9) |
| Web_Site | Varchar(131) |
| Year_Opened | Number(4) |
| Grade | Varchar(26) |
| Num_Bedrooms | Number(2) |
| Cost | Number(6) |
| Specialism | Varchar(11) |
| Num_Events | Number(1) |
| Market_Value | Varchar2(12) |

There are total 11 attributes in **Inspection** table, they are

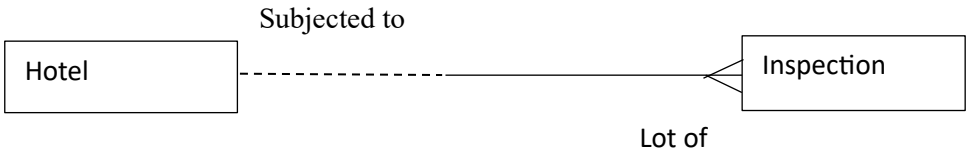
| | |
|---|---|
| Inspection_Id | Number(4) |
| Hotel_Id | Number(3) |
| Visit_Date | Date |
| Overall_Score | Number(2) |
| Outcome | Varchar(4) |
| Storage | Varchar(8) |
| Fine_Imposed | Number(4) |
| Food_Prep_Area | Varchar(9) |
| Hygiene | Varchar(12) |
| Atmosphere | Varchar(9) |
| Staff_Expertise | Varchar(12) |

## Entity Relationship Diagrams (ERD)

### Entity Relationship Diagram with attributes

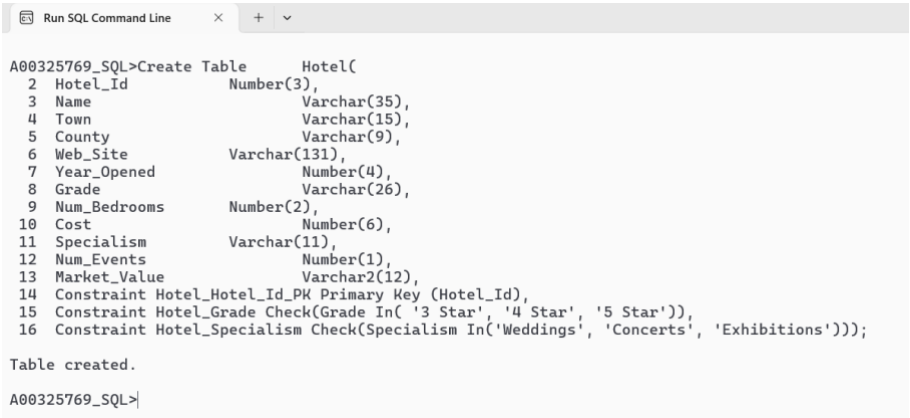



### Entity Relationship Diagram without attributes



## Creating Queries (Creating the table)

```
Set SQLPrompt A00325769_SQL>

Set Pagesize 60

Set Linesize 180

Set Echo On

Set Feedback On

Set Termout On

Set Verify On

Create Table    Hotel(

Hotel_Id            Number(3),  Hotel_Id (PK)

Name                Varchar(35),

Town                Varchar(15),

County              Varchar(9),

Web_Site            Varchar(131),

Year_Opened         Number(4),

Grade               Varchar(26),

Num_Bedrooms        Number(2),

Cost                Number(6),

Specialism          Varchar(11),

Num_Events          Number(1),

Market_Value        Varchar2(12),

Constraint Hotel_Hotel_Id_PK Primary Key (Hotel_Id),

Constraint Hotel_Grade Check(Grade In( '3 Star', '4 Star', '5 Star')),

Constraint Hotel_Specialism Check(Specialism In('Weddings', 'Concerts', 'Exhibitions')));
```



Create Table Inspection(

Inspection_Id Number(4), Inspection_Id(PK)

Hotel_Id Number(3),

Visit_Date Date,

Overall_Score Number(2),

Outcome Varchar(4),

Storage Varchar(8),

Fine_Imposed Number(4),

Food_Prep_Area Varchar(9),

Hygiene Varchar(12),

Atmosphere Varchar(9),

Staff_Expertise Varchar(12),

Constraint Inspection_Hotel_Id_Fk Foreign Key (Hotel_Id) References Hotel(Hotel_Id),

Constraint Inspection_Inspection_Id_PK Primary Key (Inspection_Id),

Constraint Inspection_Overall_Score Check(Overall_Score Between 1 And 100),

Constraint Inspection_Outcome Check(Outcome In('Pass', 'Fail')),

Constraint Inspection_Storage Check(Storage In('Poor', 'Fair', 'Adequate', 'Superb')),

Constraint Inspection_Food_Prep_Area Check(Food_Prep_Area In('Poor', 'Good', 'Excellent')),

Constraint Inspection_Hygiene Check(Hygiene In('Very Dirty', 'Satisfactory', 'Very Clean')),

Constraint Inspection_Atmosphere Check(Atmosphere In('Poor', 'Good', 'Excellent')),

Constraint Inspection_Staff_Expertise Check(Staff_Expertise In('Fair', 'Satisfactory', 'Excellent')));

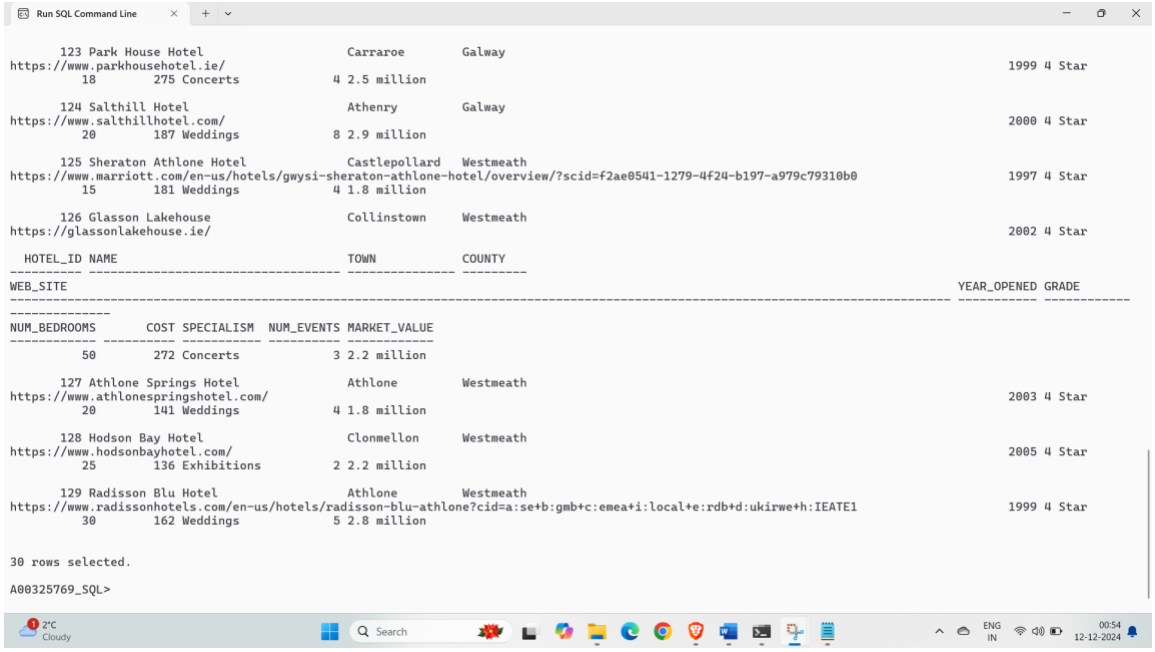
## Insert Queries (Inserting the values into tables)

insert into Hotel values(100,'Step House Hotel','Graiguenamanagh','Carlow','https://www.stephousehotel.ie/',2007,'4 Star',20,170.59,'Weddings',5,' 1.6 million');

insert into Hotel values(101,'Woodford Dolmen Hotel','Clonegal','Carlow','https://www.woodforddolmenhotel.ie/',1976,'4 Star',81,81,'Weddings',3,'1.5 million');

insert into Hotel values(102,'Borrow View Bread and Breakfast','Borris','Carlow','http://www.barrowviewbedandbreakfast.com/',2005,'4 Star',10,86,'Concerts',3,'1.8 million');

**same insert Queries for 30 entries to Hotel Table**



Insert Into Inspection Values(3935,100,'17-Jul-2024',81,'Fail','Adequate',200,'Excellent','Very Clean','Good','Satisfactory');

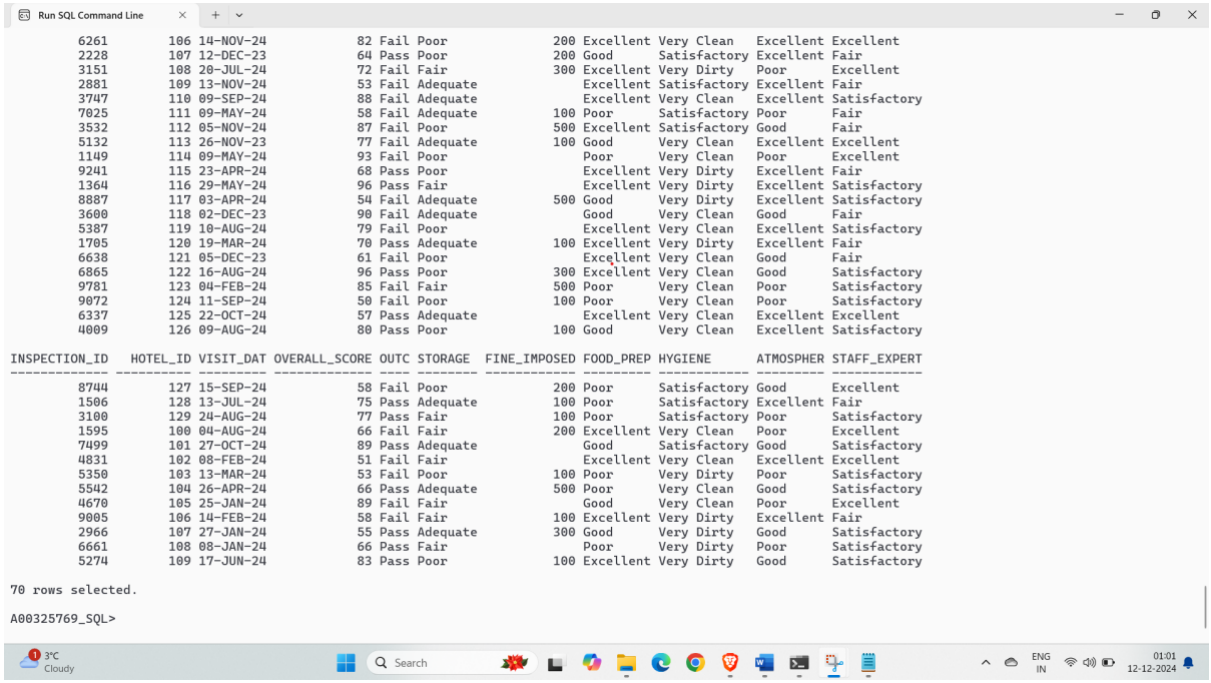
Insert Into Inspection Values(9763,101,'05-Jun-2024',78,'Pass','Poor',300,'Good','Very Dirty','Poor','Excellent');

Insert Into Inspection Values(6426,102,'15-Apr-2024',65,'Pass','Poor',100,'Good','Very Clean','Excellent','Excellent');

Insert Into Inspection Values(1566,103,'17-Oct-2024',53,'Pass','Fair',null,'Good','Very Clean','Poor','Fair');

Insert Into Inspection Values(5029,104,'10-Mar-2024',82,'Pass','Poor',200,'Good','Satisfactory','Good','Excellent');

**same insert Queries for 70 entries to Inspection Table**



## Oracle SQL_Analytic Functions

1.List the name, hotel id, and cost for each individual hotel plus the overall total cost for all hotels. Where specialism is weddings. Sort the results by hotel name, hotel id.

Cl scr

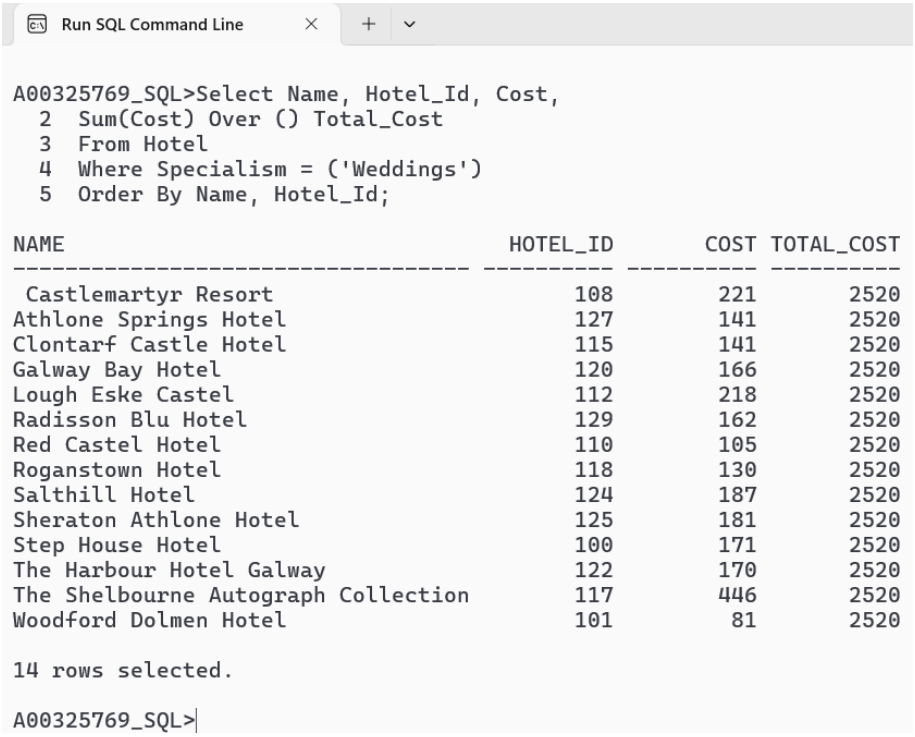
Select Name, Hotel_Id, Cost,

Sum(Cost) Over () Total_Cost

From Hotel

Where Specialism = ('Weddings')

Order By Name, Hotel_Id;



2. List the name, Hotel id, and cost for each individual hotel plus the largest cost among the hotels where specialism is in concert. In addition, calculate and display the amount each individual cost falls short of the largest cost. Sort the results by hotel id and name.

CI scr

Select Name, Hotel_Id, Cost,

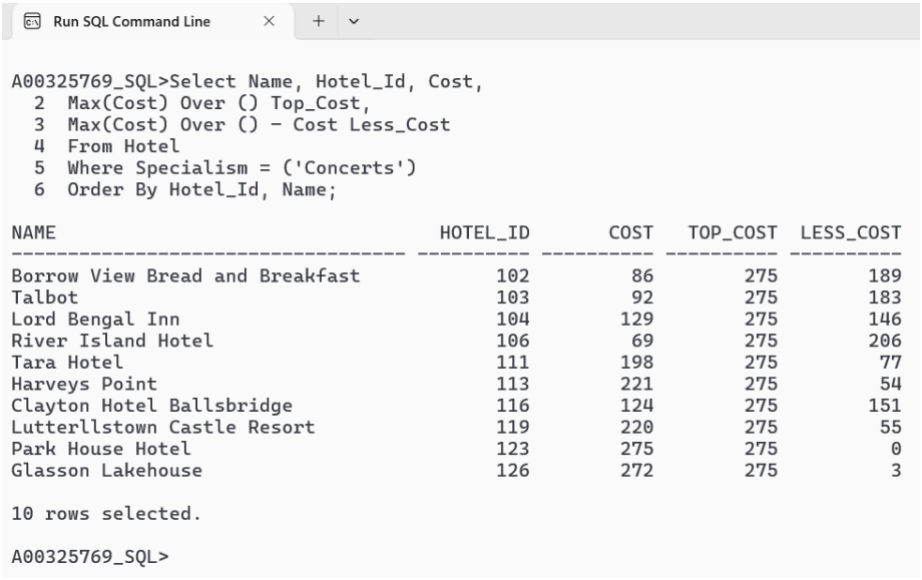
Max(Cost) Over () Top_Cost,

Max(Cost) Over () – Cost Less_Cost

From Hotel

Where Specialism = ('Concerts')

Order By Hotel_Id, Name;



3. List the name and cost for each individual hotel plus the largest and smallest costs among hotels. [In addition, calculate and display the amount each individual cost falls Short of the largest cost, and the amount each individual cost exceeds the smallest cost. Whose hotel name starts with L, Sort the results by hotel id, and then by hotel name.

Cl scr

Select Name, Cost,

Max(Cost) Over () Top_Cost,

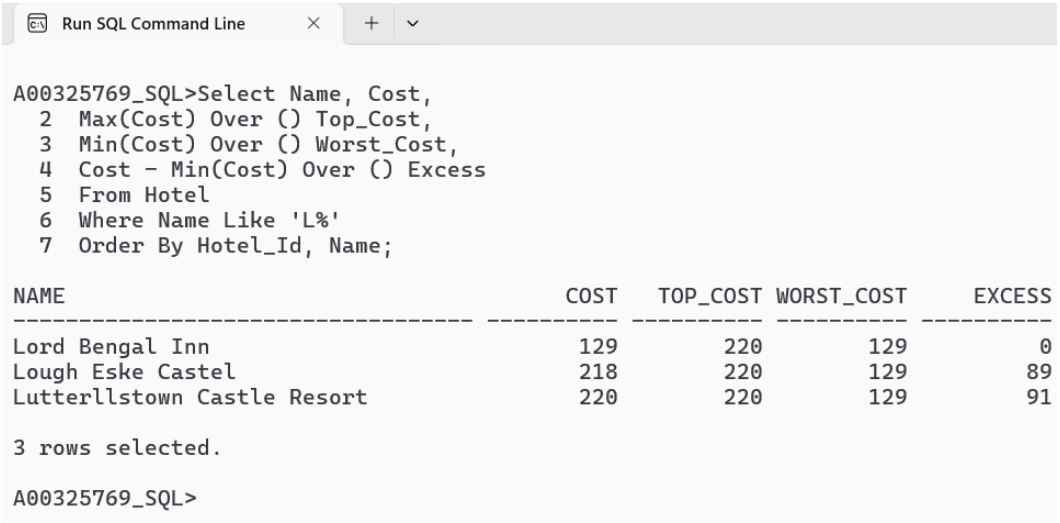
Min(Cost) Over () Worst_Cost,

Cost - Min(Cost) Over () Excess

From Hotel

Where Name Like 'L%'

Order By Hotel_Id, Name;



4. List the name, hotel id, and cost for each individual hotel plus the lowest, highest, average, and overall total cost for all hotels and the county is cork. Sort the results by hotel id, and then by hotel name.

Cl scr

Select Name, Hotel_Id, Cost,

Max(Cost) Over () Top_Cost,

Min(Cost) Over () Bottom_Cost,

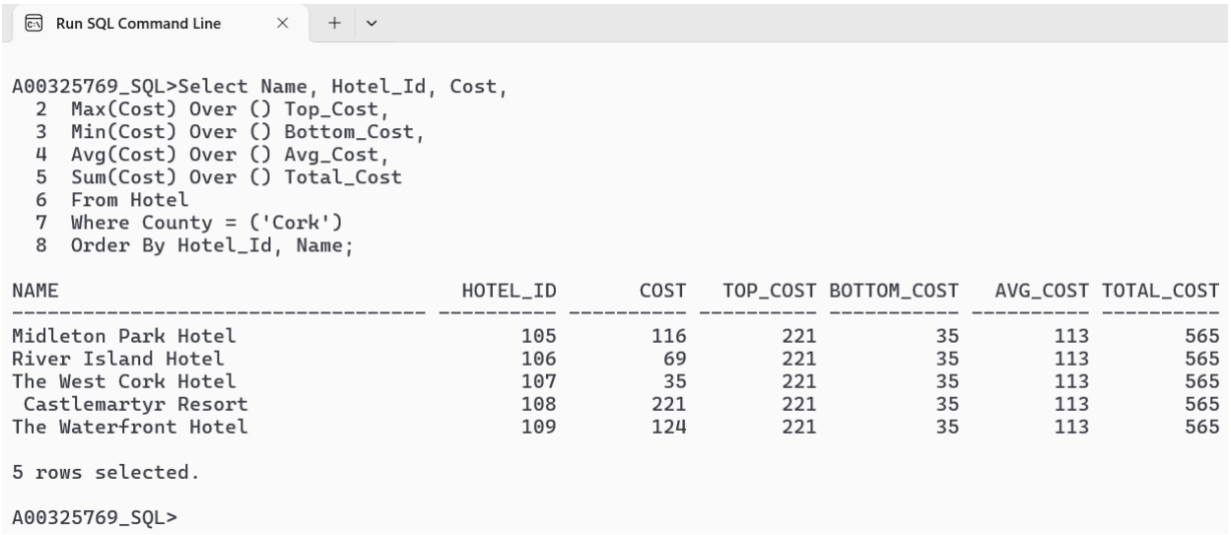
Avg(Cost) Over () Avg_Cost,

Sum(Cost) Over () Total_Cost

From Hotel

Where County = ('Cork')

Order By Hotel_Id, Name;



5. List name, hotel id, and cost for each 'individual hotel plus the lowest, highest, average, and cost for hotels and the hotel opened between 1999 and 2005. Sort the results by hotel id (ascending order) and then by hotel name.

Cl scr

Select Name, Hotel_Id, Cost,

Max(Cost) Over (Order By Hotel_Id) Top_Cost,

Min(Cost) Over (Order By Hotel_Id) Bottom_Cost,

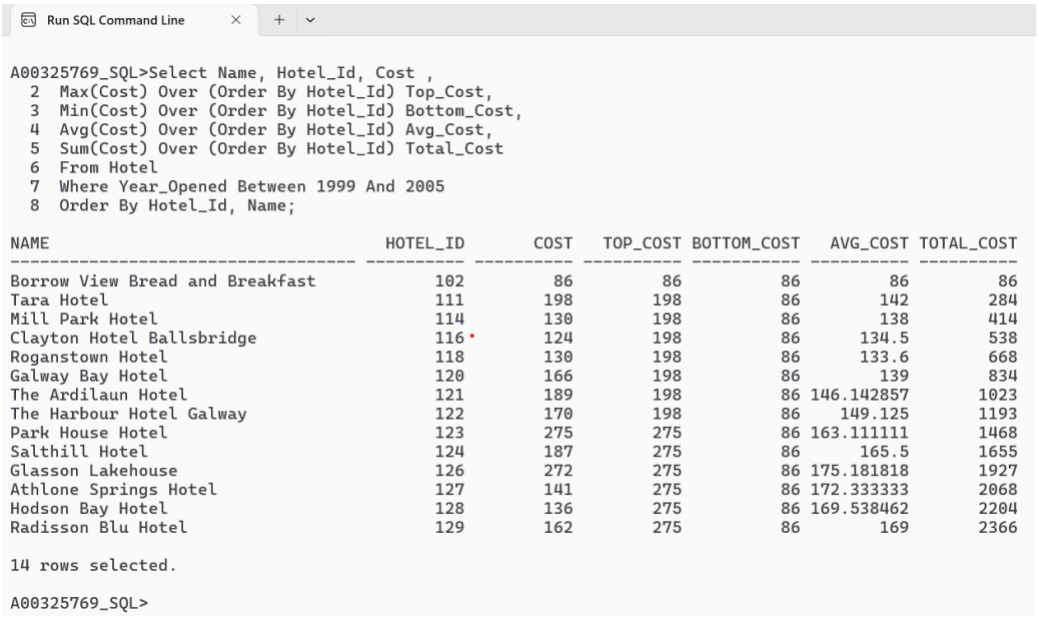
Avg(Cost) Over (Order By Hotel_Id) Avg_Cost,

Sum(Cost) Over (Order By Hotel_Id) Total_Cost

From Hotel

Where Year_Opened Between 1999 And 2005

Order By Hotel_Id, Name;



```
Run SQL Command Line

A00325769_SQL>Select Name, Hotel_Id, Cost ,
  2  Max(Cost) Over (Order By Hotel_Id) Top_Cost,
  3  Min(Cost) Over (Order By Hotel_Id) Bottom_Cost,
  4  Avg(Cost) Over (Order By Hotel_Id) Avg_Cost,
  5  Sum(Cost) Over (Order By Hotel_Id) Total_Cost
  6  From Hotel
  7  Where Year_Opened Between 1999 And 2005
  8  Order By Hotel_Id, Name;

NAME                               HOTEL_ID       COST   TOP_COST BOTTOM_COST   AVG_COST TOTAL_COST
---------------------------------- ---------- ---------- ---------- ----------- ---------- ----------
Borrow View Bread and Breakfast           102         86         86          86         86         86
Tara Hotel                                111        198        198          86        142        284
Mill Park Hotel                           114        130        198          86        138        414
Clayton Hotel Ballsbridge                 116        124        198          86      134.5        538
Roganstown Hotel                          118        130        198          86      133.6        668
Galway Bay Hotel                          120        166        198          86        139        834
The Ardilaun Hotel                        121        189        198          86 146.142857       1023
The Harbour Hotel Galway                  122        170        198          86    149.125       1193
Park House Hotel                          123        275        275          86 163.111111       1468
Salthill Hotel                            124        187        275          86      165.5       1655
Glasson Lakehouse                         126        272        275          86 175.181818       1927
Athlone Springs Hotel                     127        141        275          86 172.333333       2068
Hodson Bay Hotel                          128        136        275          86 169.538462       2204
Radisson Blu Hotel                        129        162        275          86        169       2366

14 rows selected.

A00325769_SQL>
```

6. List name, hotel id, and cost for each individual hotel plus the lowest, highest, average, and cost for hotels and the hotel opened between 1999 and 2005. Sort the results by hotel id (descending order) and then by hotel name.

Cl scr

Select Name, Hotel_Id, Cost,

Max(Cost) Over (Order By Hotel_Id Desc) Top_Cost,

Min(Cost) Over (Order By Hotel_Id Desc) Bottom_Cost,

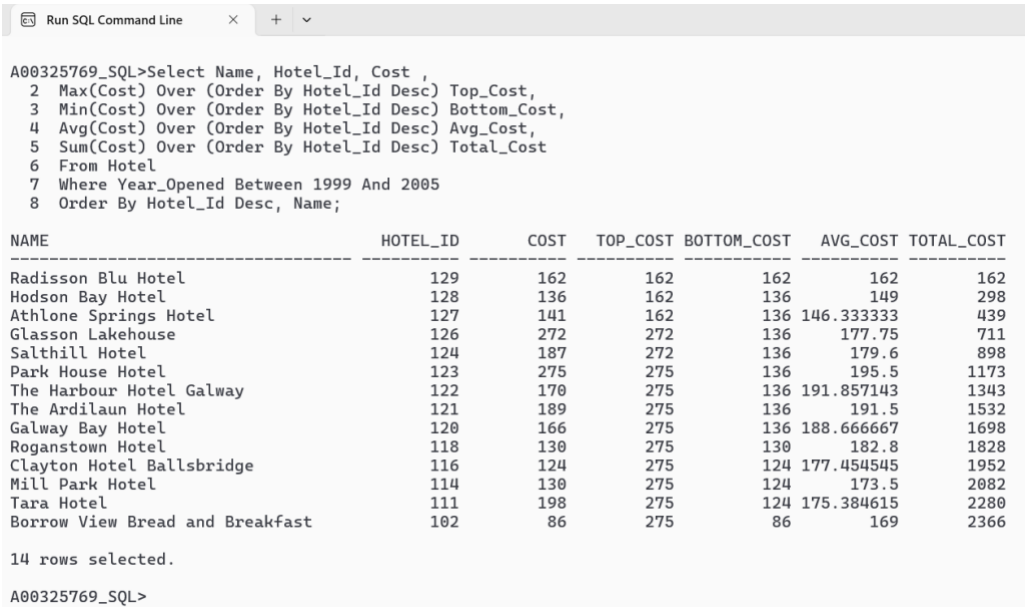
Avg(Cost) Over (Order By Hotel_Id Desc) Avg_Cost,

Sum(Cost) Over (Order By Hotel_Id Desc) Total_Cost

From Hotel

Where Year_Opened Between 1999 And 2005

Order By Hotel_Id Desc, Name;



Run SQL Command Line

```
A00325769_SQL>Select Name, Hotel_Id, Cost ,
  2  Max(Cost) Over (Order By Hotel_Id Desc) Top_Cost,
  3  Min(Cost) Over (Order By Hotel_Id Desc) Bottom_Cost,
  4  Avg(Cost) Over (Order By Hotel_Id Desc) Avg_Cost,
  5  Sum(Cost) Over (Order By Hotel_Id Desc) Total_Cost
  6  From Hotel
  7  Where Year_Opened Between 1999 And 2005
  8  Order By Hotel_Id Desc, Name;

NAME                                HOTEL_ID       COST   TOP_COST BOTTOM_COST   AVG_COST TOTAL_COST
---------------------------------- ---------- ---------- ---------- ----------- ---------- ----------
Radisson Blu Hotel                        129        162        162         162        162        162
Hodson Bay Hotel                          128        136        162         136        149        298
Athlone Springs Hotel                     127        141        162         136 146.333333        439
Glasson Lakehouse                         126        272        272         136     177.75        711
Salthill Hotel                            124        187        272         136      179.6        898
Park House Hotel                          123        275        275         136      195.5       1173
The Harbour Hotel Galway                  122        170        275         136 191.857143       1343
The Ardilaun Hotel                        121        189        275         136      191.5       1532
Galway Bay Hotel                          120        166        275         136 188.666667       1698
Roganstown Hotel                          118        130        275         130      182.8       1828
Clayton Hotel Ballsbridge                 116        124        275         124 177.454545       1952
Mill Park Hotel                           114        130        275         124      173.5       2082
Tara Hotel                                111        198        275         124 175.384615       2280
Borrow View Bread and Breakfast           102         86        275          86        169       2366

14 rows selected.

A00325769_SQL>
```

7. List name, hotel id, and cost for each individual hotel plus the lowest, highest, average, and total cost for hotels and name starts with T. Sort the results by Name.

Cl scr

Select Name, Hotel_Id, Cost,

Max(Cost) Over (Order By Name) Top_Cost,

Min(Cost) Over (Order By Name) Bottom_Cost,

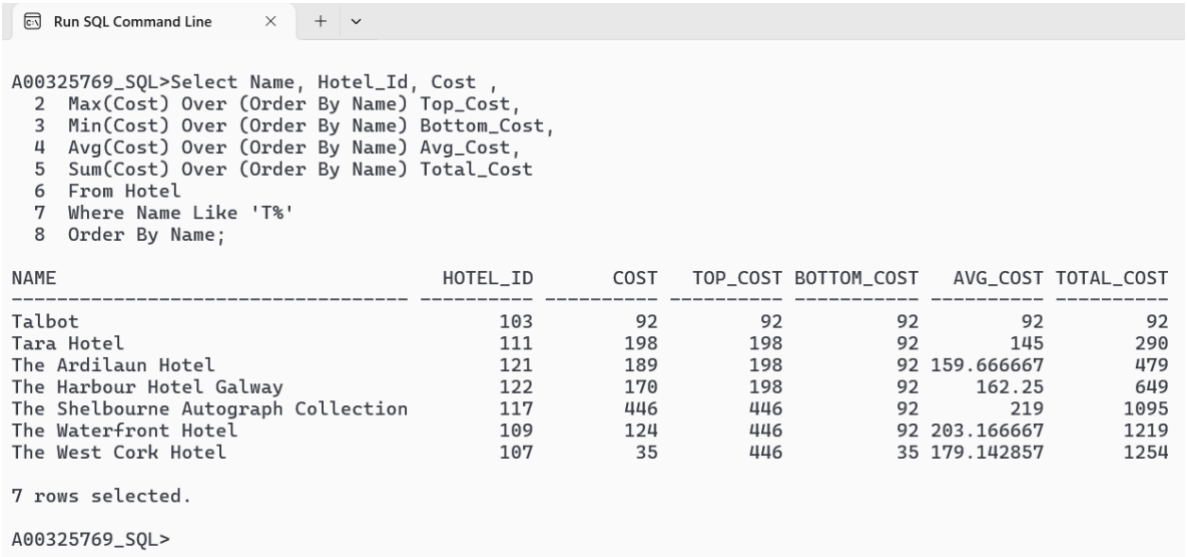
Avg(Cost) Over (Order By Name) Avg_Cost,

Sum(Cost) Over (Order By Name) Total_Cost

From Hotel

Where Name Like 'T%'

Order By Name;



8. List name, hotel id, and cost for each individual hotel plus the lowest, highest, average, and total cost for hotels and bedrooms must be 10 . Sort the results by Hotel id and Name

Cl scr

Select Name, Hotel_Id, Cost,

Max(Cost) Over (Order By Name) Top_Cost,

Min(Cost) Over (Order By Name) Bottom_Cost,

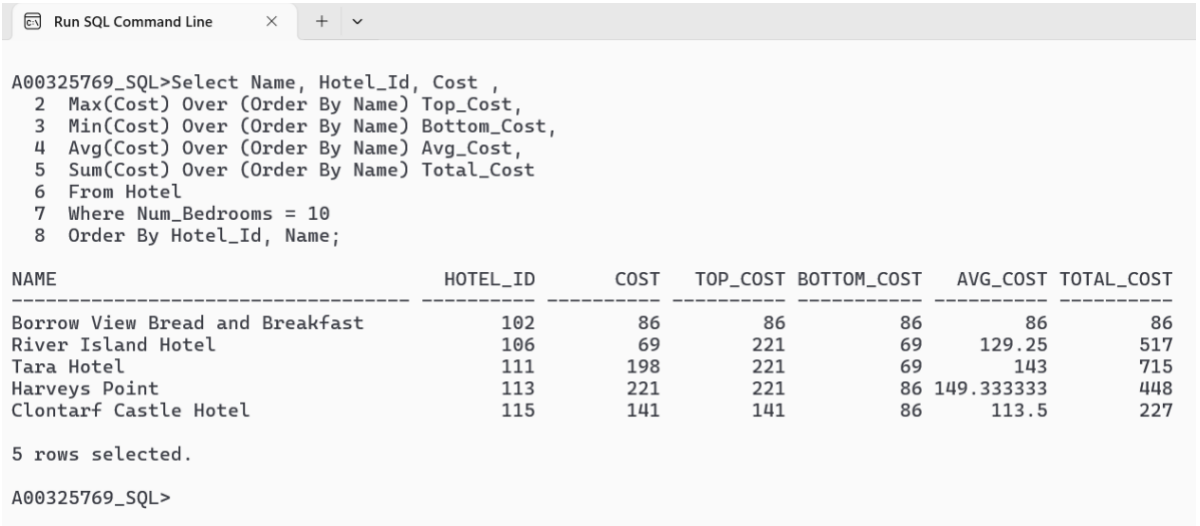
Avg(Cost) Over (Order By Name) Avg_Cost,

Sum(Cost) Over (Order By Name) Total_Cost

From Hotel

Where Num_Bedrooms = 10

Order By Hotel_Id, Name;



9.List name, hotel id, and cost for each individual hotel as well as the number of bedrooms In each hotel and cumulative running cost total for hotels at the county cork and carlow. Sort the results by hotel id and then by hotel name.

Cl scr

Select Name, Hotel_Id, Cost,

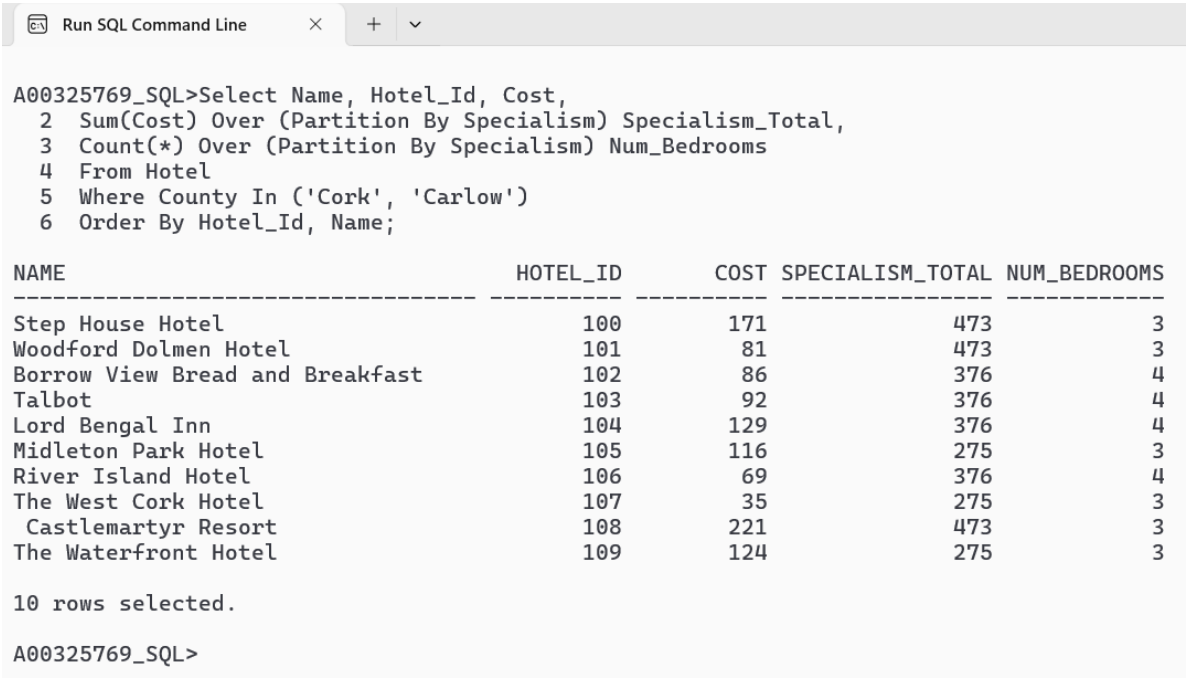
Sum(Cost) Over (Partition By Specialism) Specialism_Total,

Count(*) Over (Partition By Specialism) Num_Bedrooms

From Hotel

Where County In ('Cork', 'Carlow')

Order By Hotel_Id, Name;



10.List name, hotel id, and cost for each individual hotel as well as the number of bedrooms In each hotel and cumulative running cost total for hotels at the county cork and carlow. Sort the results by hotel id and then by hotel name.

Cl scr

Select Name, Hotel_Id, Cost,

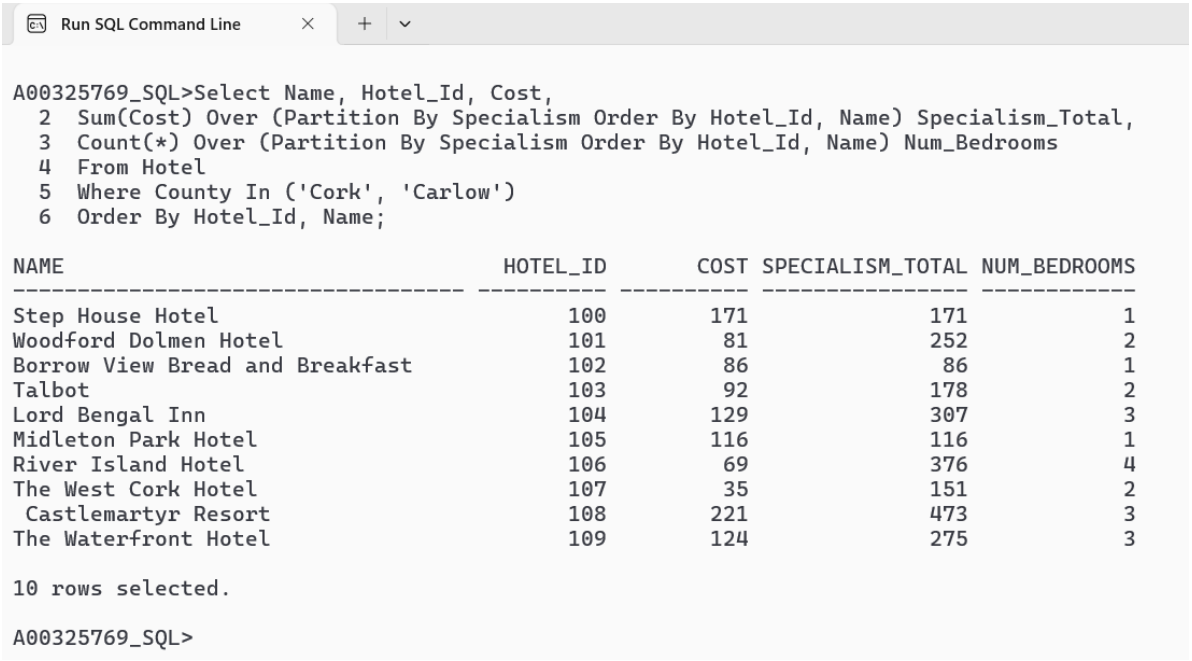
Sum(Cost) Over (Partition By Specialism Order By Hotel_Id, Name) Specialism_Total,

Count(*) Over (Partition By Specialism Order By Hotel_Id, Name) Num_Bedrooms

From Hotel

Where County In ('Cork', 'Carlow')

Order By Hotel_Id, Name;



11. List name, Grade, hotel id, and cost for each individual hotel as well as a cumulative running cost total for hotels at the county cork and dublin. Sort the results by hotel id and then by hotel name

Cl scr

Select Name, Grade, Hotel_Id, Cost,

Sum(Cost) Over (Partition By Specialism) Specialism_Total,

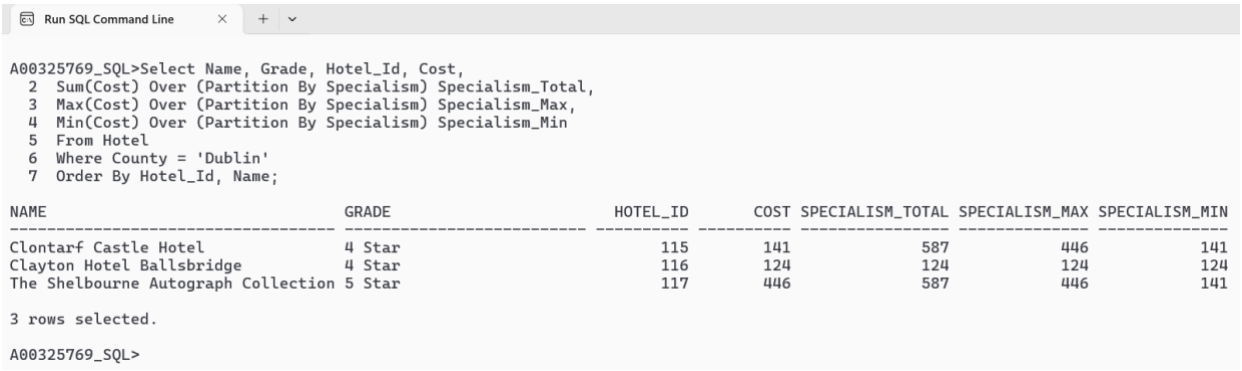
Max(Cost) Over (Partition By Specialism) Specialism_Max,

Min(Cost) Over (Partition By Specialism) Specialism_Min

From Hotel

Where County = 'Dublin'

Order By Hotel_Id, Name;



12. List the name, Grade, hotel id, and cost for each individual hotel located in galway as well as a cumulative running cost total and average cost for hotels broke down by grade. Sort the results by Grade and then by hotel name

Cl scr

Select Name, Grade, Hotel_Id, Cost,

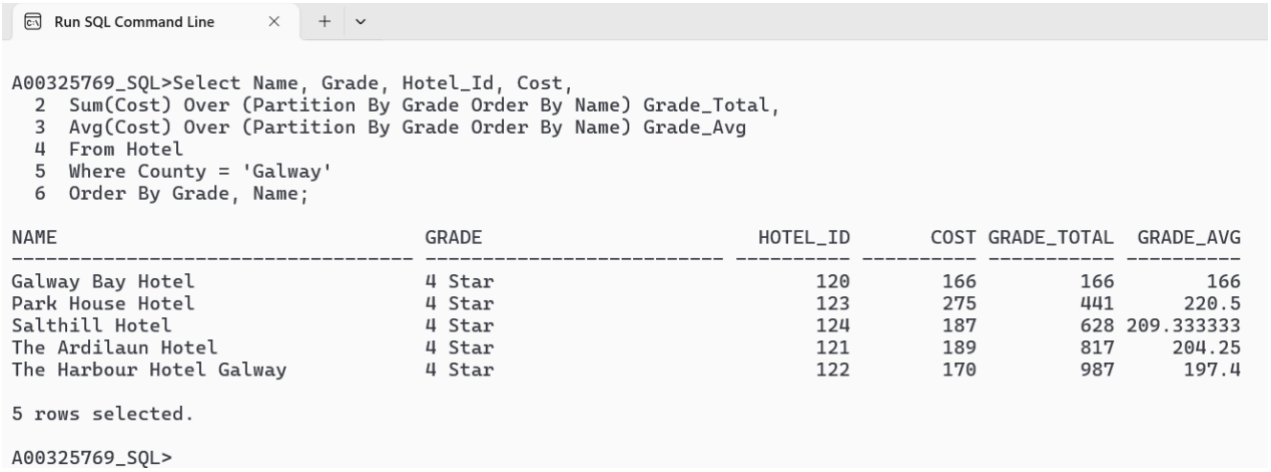
Sum(Cost) Over (Partition By Grade Order By Name) Grade_Total,

Avg(Cost) Over (Partition By Grade Order By Name) Grade_Avg

From Hotel

Where County = 'Galway'

Order By Grade, Name;



13.List the Name, cost, county, hotel id, cost for each hotel as well as a cumulative running cost for the current hotels plus the two earlier/ previous hotels processed at the name (i.e there should be no overlap between names) where specialism in concerts. Sort the output by county and then hotel name.

Cl scr

Select Name, Cost, County, Hotel_Id,

Sum(Cost) Over (Partition By County Order By Name Rows 2 Preceding) Cost_Total

From Hotel

Where Specialism = 'Concerts'

Order By County, Name;

Run SQL Command Line

```
A00325769_SQL>Select Name, Cost, County, Hotel_Id,
  2  Sum(Cost) Over (Partition By County Order By Name Rows 2 Preceding) Cost_Total
  3  From Hotel
  4  Where Specialism = 'Concerts'
  5  Order By County, Name;

NAME                                 COST COUNTY      HOTEL_ID COST_TOTAL
---------------------------------- ---------- --------- ---------- ----------
Borrow View Bread and Breakfast            86 Carlow           102         86
Lord Bengal Inn                           129 Carlow           104        215
Talbot                                     92 Carlow           103        307
River Island Hotel                         69 Cork             106         69
Harveys Point                             221 Donegal          113        221
Tara Hotel                                198 Donegal          111        419
Clayton Hotel Ballsbridge                 124 Dublin           116        124
Lutterllstown Castle Resort               220 Fingal           119        220
Park House Hotel                          275 Galway           123        275
Glasson Lakehouse                         272 Westmeath        126        272

10 rows selected.

A00325769_SQL>
```

14. List the Atmosphere, visit date, storage, and fine imposed, and what is the cumulative total of fines imposed over the past 90 days for each atmosphere category, for inspections where the storage condition was Poor.

Cl scr

Select Atmosphere, Visit_Date, Storage, Fine_Imposed,

Sum(Fine_Imposed) Over (Partition By Atmosphere Order By Visit_Date Range 90 Preceding) Fine_Imposed_Total

From Inspection

Where Storage = 'Poor'

Order By Atmosphere, Visit_Date;

Run SQL Command Line

```
A00325769_SQL>Select Atmosphere, Visit_Date, Storage, Fine_Imposed,
  2  Sum(Fine_Imposed) Over (Partition By Atmosphere Order By Visit_Date Range 90 Preceding) Fine_Imposed_Total
  3  From Inspection
  4  Where Storage = 'Poor'
  5   Order By Atmosphere, Visit_Date;

ATMOSPHER VISIT_DAT STORAGE  FINE_IMPOSED FINE_IMPOSED_TOTAL
--------- --------- -------- ------------ ------------------
Excellent 12-DEC-23 Poor              200                200
Excellent 26-MAR-24 Poor
Excellent 15-APR-24 Poor              100                100
Excellent 23-APR-24 Poor                                 100
Excellent 17-JUL-24 Poor              100                100
Excellent 09-AUG-24 Poor              100                200
Excellent 10-AUG-24 Poor                                 200
Excellent 14-NOV-24 Poor              200                200
Good      05-DEC-23 Poor
Good      19-DEC-23 Poor
Good      19-JAN-24 Poor              500                500
Good      22-JAN-24 Poor                                 500
Good      11-FEB-24 Poor              500               1000
Good      10-MAR-24 Poor              200               1200
Good      30-MAR-24 Poor                                1200
Good      17-JUN-24 Poor              100                100
Good      16-AUG-24 Poor              300                400
Good      15-SEP-24 Poor              200                600
Good      30-SEP-24 Poor              300                800
Good      11-OCT-24 Poor              500               1300
Good      05-NOV-24 Poor              500               1800
Poor      13-MAR-24 Poor              100                100
Poor      09-MAY-24 Poor                                 100
Poor      05-JUN-24 Poor              300                400
Poor      11-SEP-24 Poor              100                100
Poor      17-OCT-24 Poor              300                400

26 rows selected.

A00325769_SQL>
```

15.List the Atmosphere, visit date, storage, and fine imposed, and what is the cumulative total of fines imposed at any time during the year before and the year after the individual under consideration (i.e +365 days or -365 days) for each atmosphere category, for inspections where the storage condition was Poor.

Cl scr

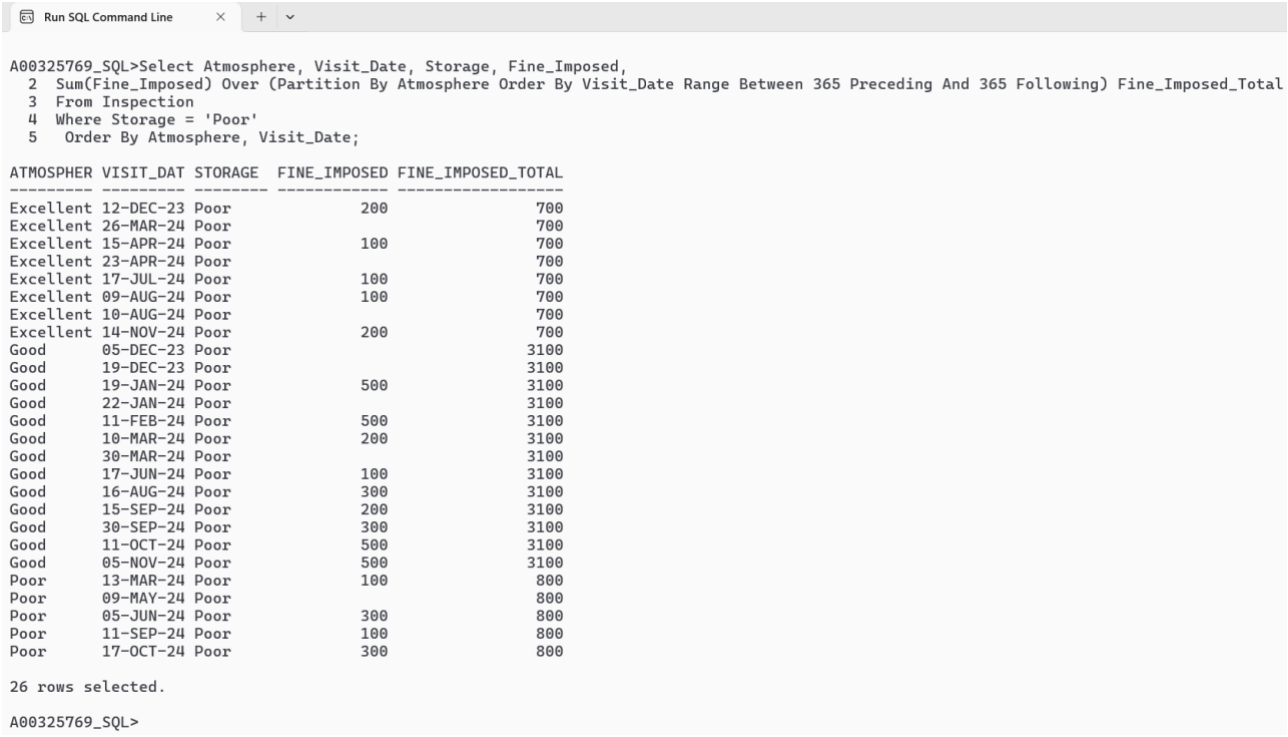
Select Atmosphere, Visit_Date, Storage, Fine_Imposed,

Sum(Fine_Imposed) Over (Partition By Atmosphere Order By Visit_Date Range Between 365 Preceding And 365 Following) Fine_Imposed_Total

From Inspection

Where Storage = 'Poor'

Order By Atmosphere, Visit_Date;



```
Run SQL Command Line

A00325769_SQL>Select Atmosphere, Visit_Date, Storage, Fine_Imposed,
  2  Sum(Fine_Imposed) Over (Partition By Atmosphere Order By Visit_Date Range Between 365 Preceding And 365 Following) Fine_Imposed_Total
  3  From Inspection
  4  Where Storage = 'Poor'
  5   Order By Atmosphere, Visit_Date;

ATMOSPHER VISIT_DAT STORAGE  FINE_IMPOSED FINE_IMPOSED_TOTAL
--------- --------- -------- ------------ ------------------
Excellent 12-DEC-23 Poor              200                700
Excellent 26-MAR-24 Poor                                 700
Excellent 15-APR-24 Poor              100                700
Excellent 23-APR-24 Poor                                 700
Excellent 17-JUL-24 Poor              100                700
Excellent 09-AUG-24 Poor              100                700
Excellent 10-AUG-24 Poor                                 700
Excellent 14-NOV-24 Poor              200                700
Good      05-DEC-23 Poor                                3100
Good      19-DEC-23 Poor                                3100
Good      19-JAN-24 Poor              500               3100
Good      22-JAN-24 Poor                                3100
Good      11-FEB-24 Poor              500               3100
Good      10-MAR-24 Poor              200               3100
Good      30-MAR-24 Poor                                3100
Good      17-JUN-24 Poor              100               3100
Good      16-AUG-24 Poor              300               3100
Good      15-SEP-24 Poor              200               3100
Good      30-SEP-24 Poor              300               3100
Good      11-OCT-24 Poor              500               3100
Good      05-NOV-24 Poor              500               3100
Poor      13-MAR-24 Poor              100                800
Poor      09-MAY-24 Poor                                 800
Poor      05-JUN-24 Poor              300                800
Poor      11-SEP-24 Poor              100                800
Poor      17-OCT-24 Poor              300                800

26 rows selected.

A00325769_SQL>
```

16.List the storage, outcome visit date recorded within a 100-day range for inspections that failed between January 1, 2024, and May 30, 2024, Arrange the results by visit date.

Cl scr

Select Storage, Visit_Date, Outcome, Visit_Date-100 Wind100_Dys,

First_Value(Storage) Over (Order By Visit_Date Asc Range 100 Preceding) Storage_1st,

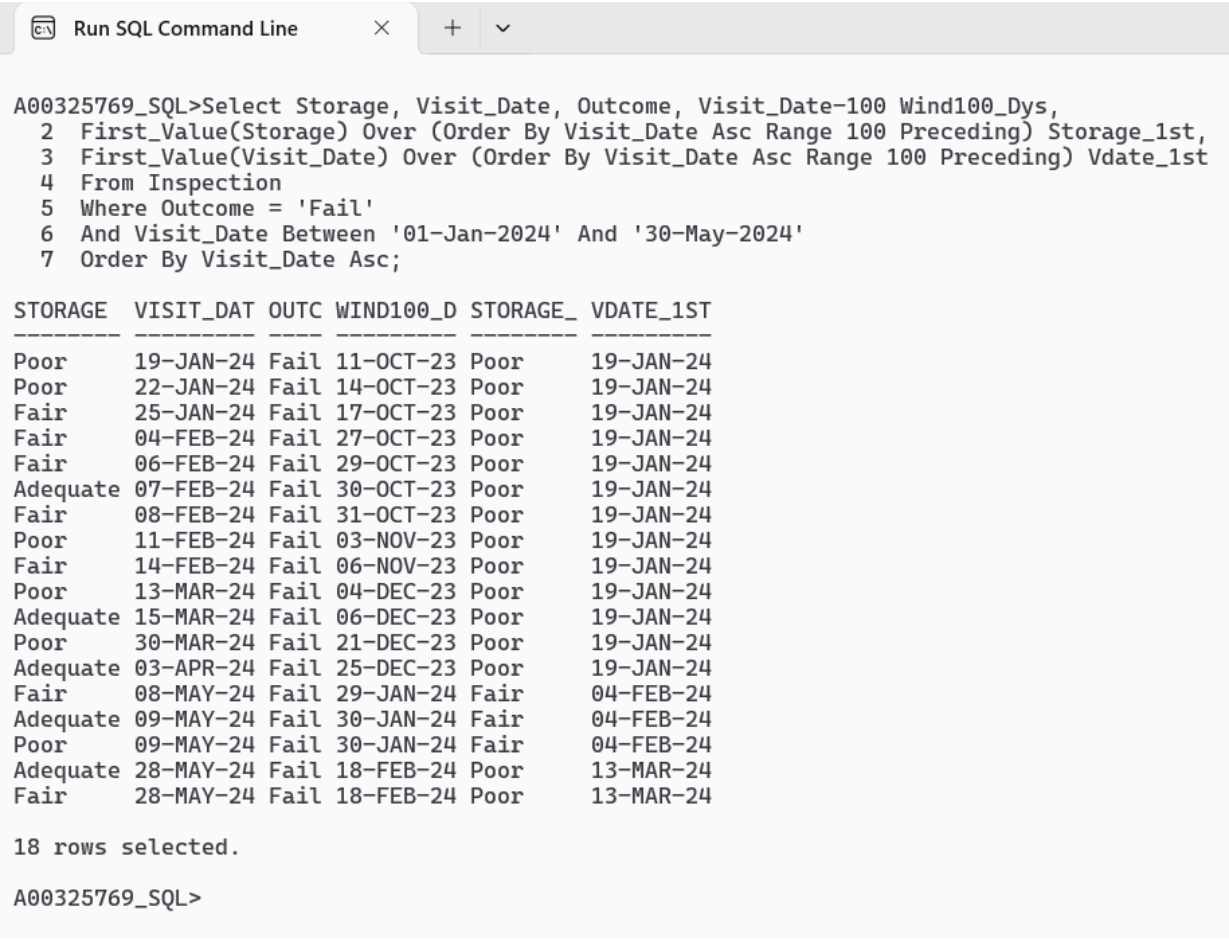
First_Value(Visit_Date) Over (Order By Visit_Date Asc Range 100 Preceding) Vdate_1st

From Inspection

Where Outcome = 'Fail'

And Visit_Date Between '01-Jan-2024' And '30-May-2024'

Order By Visit_Date Asc;



17.List the Storage, visit date,outcome, and fines imposed 30 days before and 30 days after each failed inspection between February 1, 2024, and March 30, 2024, and outcomes is fail, arrange the results by visit date.

Cl scr

Select Storage, Visit_Date, Outcome, Visit_Date-30 "30DyEar", Visit_Date + 30 "30DyLst",

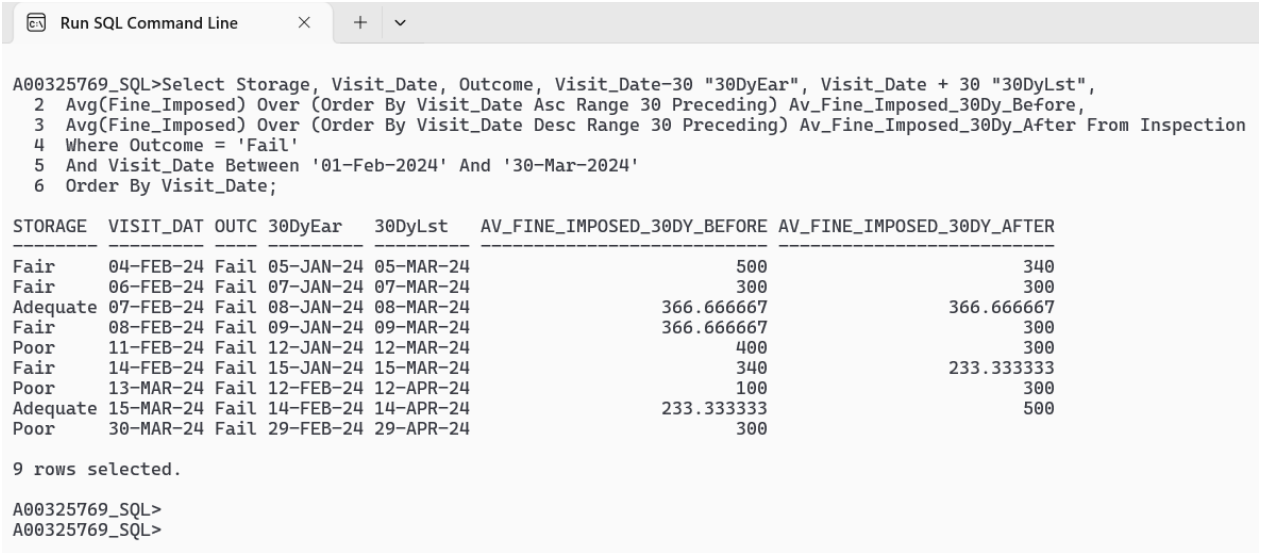
Avg(Fine_Imposed) Over (Order By Visit_Date Asc Range 30 Preceding)
Avg_Fine_Imposed_30Dy_Before,

Avg(Fine_Imposed) Over (Order By Visit_Date Desc Range 30 Preceding)
Avg_Fine_Imposed_30Dy_After From Inspection

Where Outcome = 'Fail'

And Visit_Date Between '01-Feb-2024' And '30-Mar-2024'

Order By Visit_Date;



18. List the name, town, hotel id, county and cost from hotel and the total and average costs for hotels specializing in weddings, grouped by hotel, town, and county, arrange the results in hotel id.

Cl scr

Select Name, Town, Hotel_Id, County, Cost,

Sum (Cost) Over (Partition By Hotel_Id) Hotel_Id_Total,

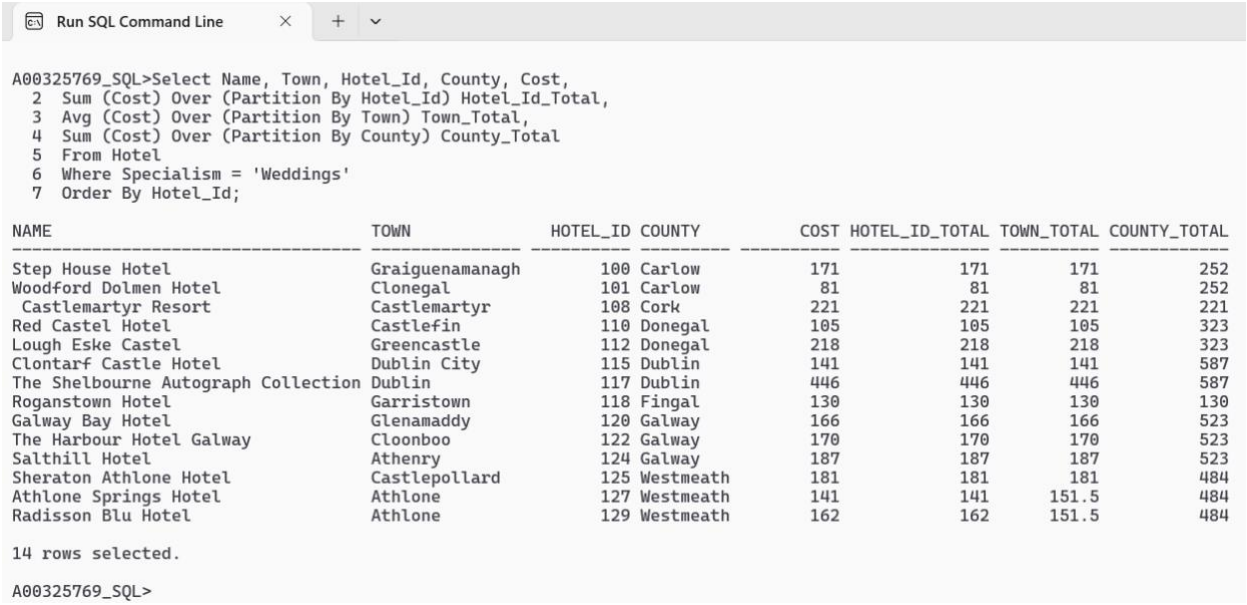
Avg (Cost) Over (Partition By Town) Town_Total,

Sum (Cost) Over (Partition By County) County_Total

From Hotel

Where Specialism = 'Weddings'

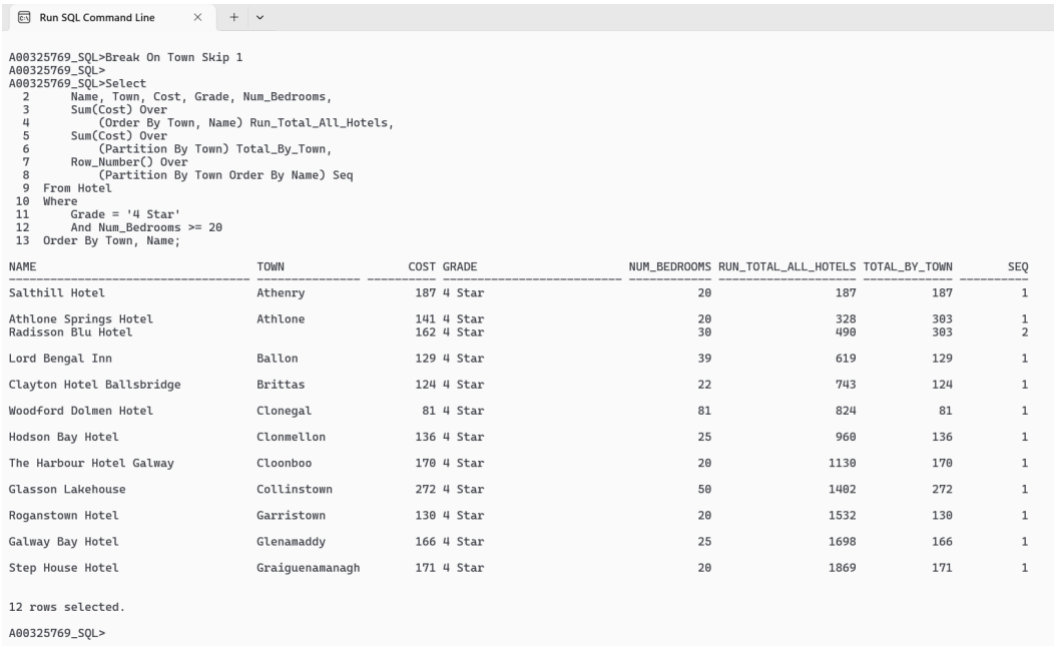
Order By Hotel_Id;



```
Run SQL Command Line

A00325769_SQL>Select Name, Town, Hotel_Id, County, Cost,
  2  Sum (Cost) Over (Partition By Hotel_Id) Hotel_Id_Total,
  3  Avg (Cost) Over (Partition By Town) Town_Total,
  4  Sum (Cost) Over (Partition By County) County_Total
  5  From Hotel
  6  Where Specialism = 'Weddings'
  7  Order By Hotel_Id;

NAME                                TOWN             HOTEL_ID COUNTY          COST HOTEL_ID_TOTAL TOWN_TOTAL COUNTY_TOTAL
----------------------------------- --------------- ---------- --------- ---------- --------------- ---------- ------------
Step House Hotel                    Graiguenamanagh        100 Carlow           171             171        171          252
Woodford Dolmen Hotel               Clonegal               101 Carlow            81              81         81          252
 Castlemartyr Resort                Castlemartyr           108 Cork             221             221        221          221
Red Castel Hotel                    Castlefin              110 Donegal          105             105        105          323
Lough Eske Castel                   Greencastle            112 Donegal          218             218        218          323
Clontarf Castle Hotel               Dublin City            115 Dublin           141             141        141          587
The Shelbourne Autograph Collection Dublin                 117 Dublin           446             446        446          587
Roganstown Hotel                    Garristown             118 Fingal           130             130        130          130
Galway Bay Hotel                    Glenamaddy             120 Galway           166             166        166          523
The Harbour Hotel Galway            Cloonboo               122 Galway           170             170        170          523
Salthill Hotel                      Athenry                124 Galway           187             187        187          523
Sheraton Athlone Hotel              Castlepollard          125 Westmeath        181             181        181          484
Athlone Springs Hotel               Athlone                127 Westmeath        141             141      151.5          484
Radisson Blu Hotel                  Athlone                129 Westmeath        162             162      151.5          484

14 rows selected.

A00325769_SQL>
```

19. list the hotel name, town, cost, grade and number of for all the hotels with a Grade of 4 Star and at least 20 bedrooms, along with a running total of cost across all hotels, the total cost by town, and a sequential number for each hotel within the same town, sorted by town and name.

```
Cl scr

Break On Town Skip 1

Select Name, Town, Cost, Grade, Num_Bedrooms,

        Sum(Cost) Over

                (Order By Town, Name) Run_Total_All_Hotels,

        Sum(Cost) Over

                (Partition By Town) Total_By_Town,

        Row_Number() Over

                (Partition By Town Order By Name) Seq

From Hotel

Where  Grade = '4 Star'

 And Num_Bedrooms >= 20

Order By Town, Name;
```



Run SQL Command Line

```
A00325769_SQL>Break On Town Skip 1
A00325769_SQL>
A00325769_SQL>Select
  2      Name, Town, Cost, Grade, Num_Bedrooms,
  3      Sum(Cost) Over
  4          (Order By Town, Name) Run_Total_All_Hotels,
  5      Sum(Cost) Over
  6          (Partition By Town) Total_By_Town,
  7      Row_Number() Over
  8          (Partition By Town Order By Name) Seq
  9  From Hotel
 10  Where
 11      Grade = '4 Star'
 12      And Num_Bedrooms >= 20
 13  Order By Town, Name;
```

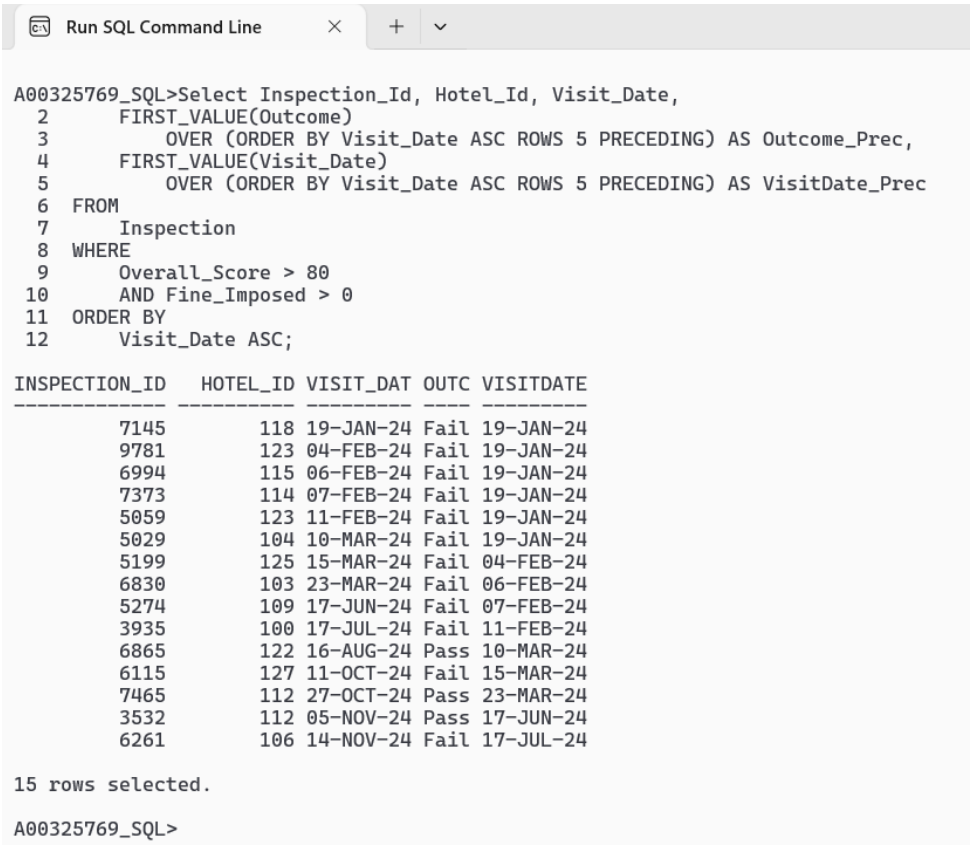
| NAME | TOWN | COST | GRADE | NUM_BEDROOMS | RUN_TOTAL_ALL_HOTELS | TOTAL_BY_TOWN | SEQ |
|---|---|---|---|---|---|---|---|
| Salthill Hotel | Athenry | 187 | 4 Star | 20 | 187 | 187 | 1 |
| Athlone Springs Hotel | Athlone | 141 | 4 Star | 20 | 328 | 303 | 1 |
| Radisson Blu Hotel | | 162 | 4 Star | 30 | 490 | 303 | 2 |
| Lord Bengal Inn | Ballon | 129 | 4 Star | 39 | 619 | 129 | 1 |
| Clayton Hotel Ballsbridge | Brittas | 124 | 4 Star | 22 | 743 | 124 | 1 |
| Woodford Dolmen Hotel | Clonegal | 81 | 4 Star | 81 | 824 | 81 | 1 |
| Hodson Bay Hotel | Clonmellon | 136 | 4 Star | 25 | 960 | 136 | 1 |
| The Harbour Hotel Galway | Cloonboo | 170 | 4 Star | 20 | 1130 | 170 | 1 |
| Glasson Lakehouse | Collinstown | 272 | 4 Star | 50 | 1402 | 272 | 1 |
| Roganstown Hotel | Garristown | 130 | 4 Star | 20 | 1532 | 130 | 1 |
| Galway Bay Hotel | Glenamaddy | 166 | 4 Star | 25 | 1698 | 166 | 1 |
| Step House Hotel | Graiguenamanagh | 171 | 4 Star | 20 | 1869 | 171 | 1 |

```
12 rows selected.

A00325769_SQL>
```

20. list the Inspection id, hotel id and visit date for the inspections where the Overall Score is greater than 80 and imposed a Fine Imposed. Additionally, display the first Outcome and Visit Date from the previous 5 rows ordered by Visit Date, and sort the results by Visit Date in ascending order.

Cl scr

```
Select Inspection_Id, Hotel_Id, Visit_Date,
   FIRST_VALUE(Outcome)
      OVER (ORDER BY Visit_Date ASC ROWS 5 PRECEDING) AS Outcome_Prec,
   FIRST_VALUE(Visit_Date)
      OVER (ORDER BY Visit_Date ASC ROWS 5 PRECEDING) AS VisitDate_Prec
FROM
   Inspection
WHERE
   Overall_Score > 80
   AND Fine_Imposed > 0
ORDER BY
   Visit_Date ASC;
```



21. List the name, county and the year open of the hotels. Calculate the cumulative total of year opened for all hotels in the location of cork, sort the results by county and name.

Cl scr

Select Name, County, Year_Opened,

Sum(Year_Opened) Over

(Partition By County

Order By Name)County_Total

From Hotel

Where County = 'Cork'

Order By County, Name;

```
A00325769_SQL>Select Name, County, Year_Opened,
  2                Sum(Year_Opened) Over
  3                      (Partition By County
  4                       Order By Name)County_Total
  5  From Hotel
  6  Where County = 'Cork'
  7  Order By County, Name;

NAME                               COUNTY    YEAR_OPENED COUNTY_TOTAL
---------------------------------- --------- ----------- ------------
 Castlemartyr Resort               Cork             2008         2008
Midleton Park Hotel                Cork             2023         4031
River Island Hotel                 Cork             1995         6026
The Waterfront Hotel               Cork             1960         7986
The West Cork Hotel                Cork             1902         9888

5 rows selected.

A00325769_SQL>
```

22. List the name, county, cost and the year open of each hotel. Insert the new column called running total that include cost of all hotels that located in the same or earlier county sort it by hotel name and county. And insert the new column called county hotel count where the hotels located in same county sort this by using hotel name, filter the hotels that located in the county called cork and Dublin sort the results with county and hotel name.

```
Cl scr

Select Name, County, Cost, Year_Opened,
   (Select Sum(Cost)
        From Hotel H2
        Where H2.County < Hotel.County
        Or(H2.County = Hotel.County AND H2.Name <= Hotel.Name))
  Running_Total,
  (Select Sum(Cost)
        From Hotel H3
        Where H3.County = Hotel.County
        And H3.Name <= Hotel.Name)
  County_Hotel_Count
From Hotel
Where County In ('Cork', 'Dublin')
ORDER BY County, Name;
```

Run SQL Command Line

```
A00325769_SQL>Select Name, County, Cost, Year_Opened,
  2      (Select Sum(Cost)
  3              From Hotel H2
  4              Where H2.County < Hotel.County
  5              Or(H2.County = Hotel.County AND H2.Name <= Hotel.Name))
  6     Running_Total,
  7     (Select Sum(Cost)
  8             From Hotel H3
  9             Where H3.County = Hotel.County
 10             And H3.Name <= Hotel.Name)
 11     County_Hotel_Count
 12  From Hotel
 13  Where County In ('Cork', 'Dublin')
 14  ORDER BY County, Name;

NAME                               COUNTY          COST YEAR_OPENED RUNNING_TOTAL COUNTY_HOTEL_COUNT
---------------------------------- --------- ---------- ----------- ------------- ------------------
 Castlemartyr Resort               Cork             221        2008           780                221
Midleton Park Hotel                Cork             116        2023           896                337
River Island Hotel                 Cork              69        1995           965                406
The Waterfront Hotel               Cork             124        1960          1089                530
The West Cork Hotel                Cork              35        1902          1124                565
Clayton Hotel Ballsbridge          Dublin           124        2004          2120                124
Clontarf Castle Hotel              Dublin           141        1998          2261                265
The Shelbourne Autograph Collection Dublin          446        1998          2707                711

8 rows selected.

A00325769_SQL>
```

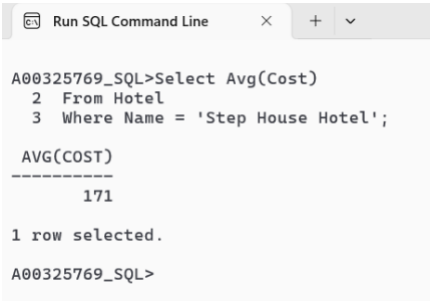
23. list the name and average cost of the hotels with multiple hotel names

Cl scr

Select Avg(Cost)

From Hotel

Where Name = 'Step House Hotel';

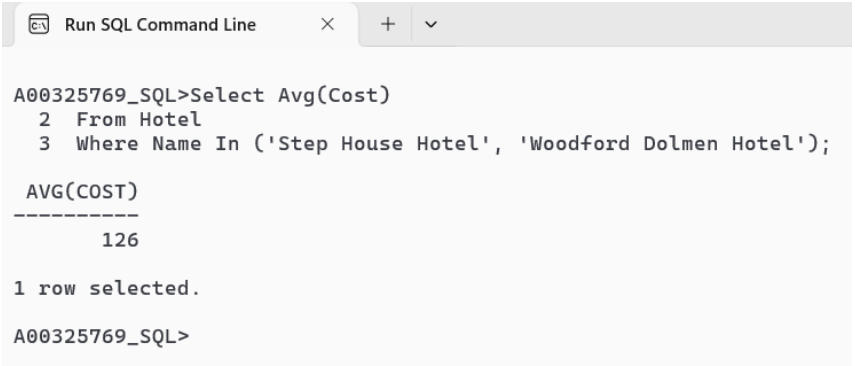



Cl scr

Select Avg(Cost)

From Hotel

Where Name In ('Step House Hotel', 'Woodford Dolmen Hotel');




Cl scr

Select Avg(Cost)

From Hotel

Where Name In ('Step House Hotel', 'Woodford Dolmen Hotel', 'Borrow View Bread and Breakfast', 'Talbot');

**You tube Links**

Video 1: https://youtu.be/O-3PR-J7ZMA?si=766Kgf26OYpwF7Lg

Video 2 : https://youtu.be/nfUlNh1_9mc?si=jkrtA_Y40TEs_4xC