

Sri Lanka Institute of Information Technology



Data Warehousing & Business Intelligence

Assignment 02

Submitted by:

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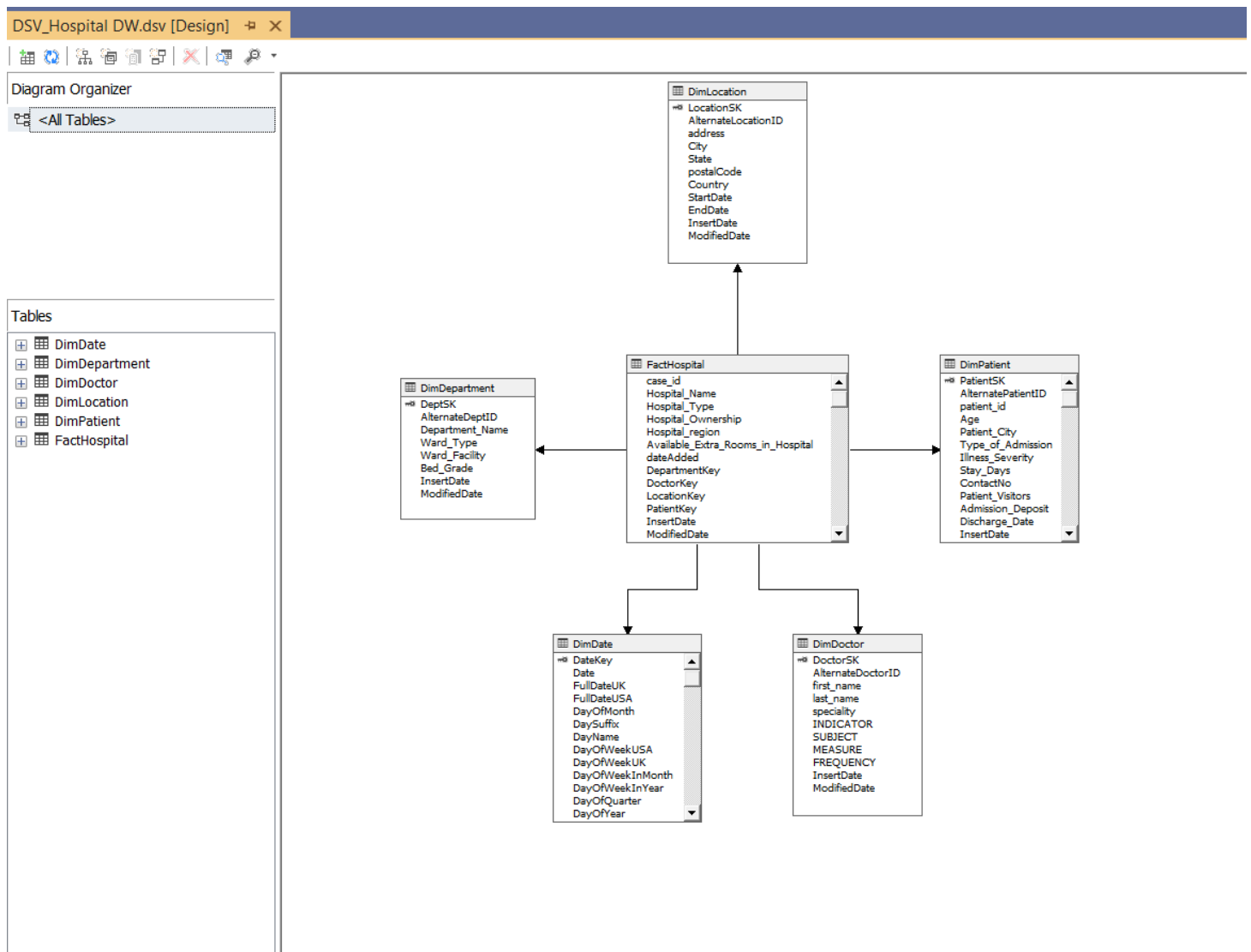
- 1. Data set selection**
- 2. Cube Implementation**
- 3. Demonstration of OLAP Operations**
- 4. SSRS Report**

01. Data Source

For this purpose, use Hospital_DW as Data warehouse which implemented in last Assignment.

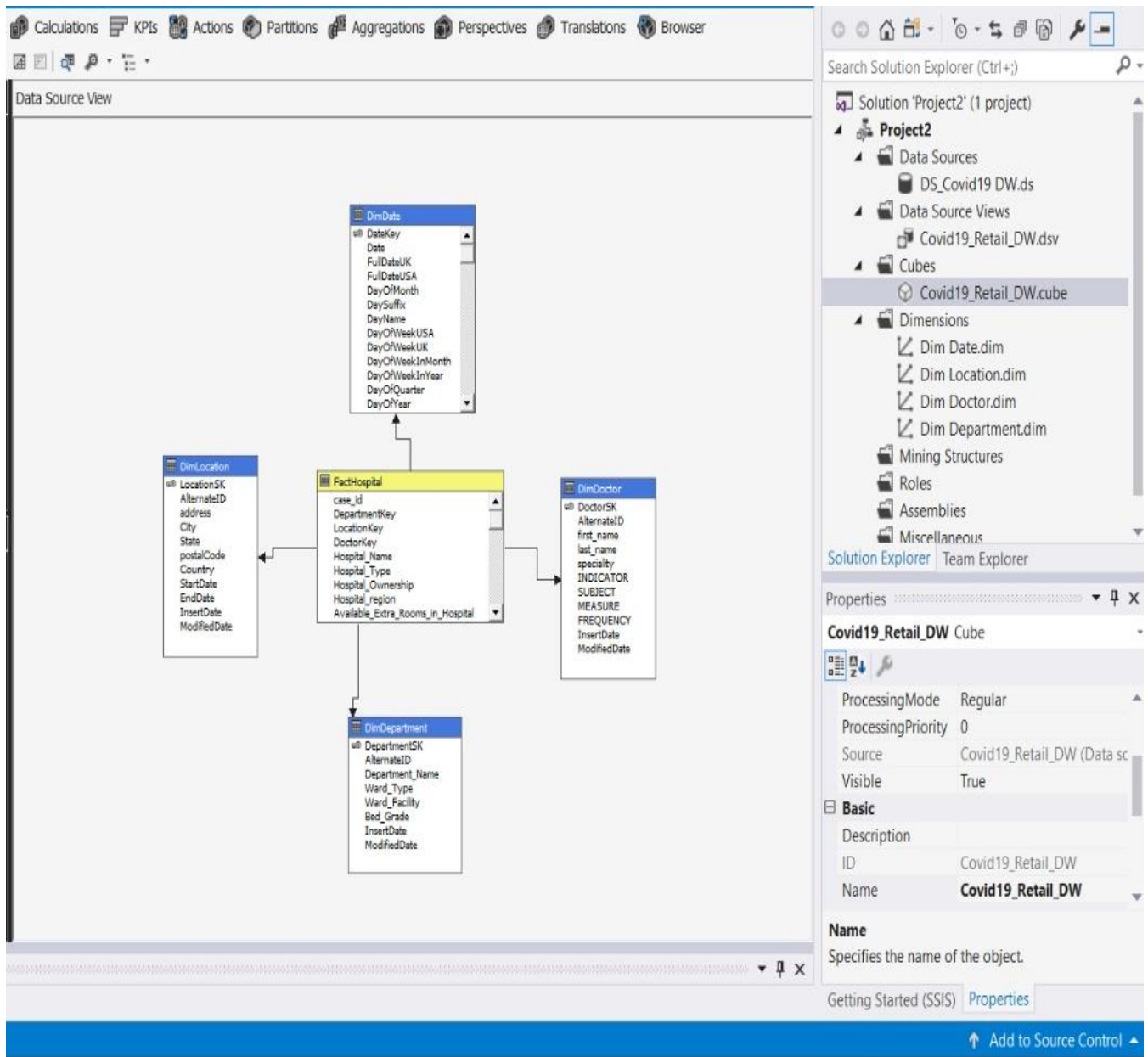
02. Cube Implementation

In here first create data source view using previous implemented data dimensions and fact table.



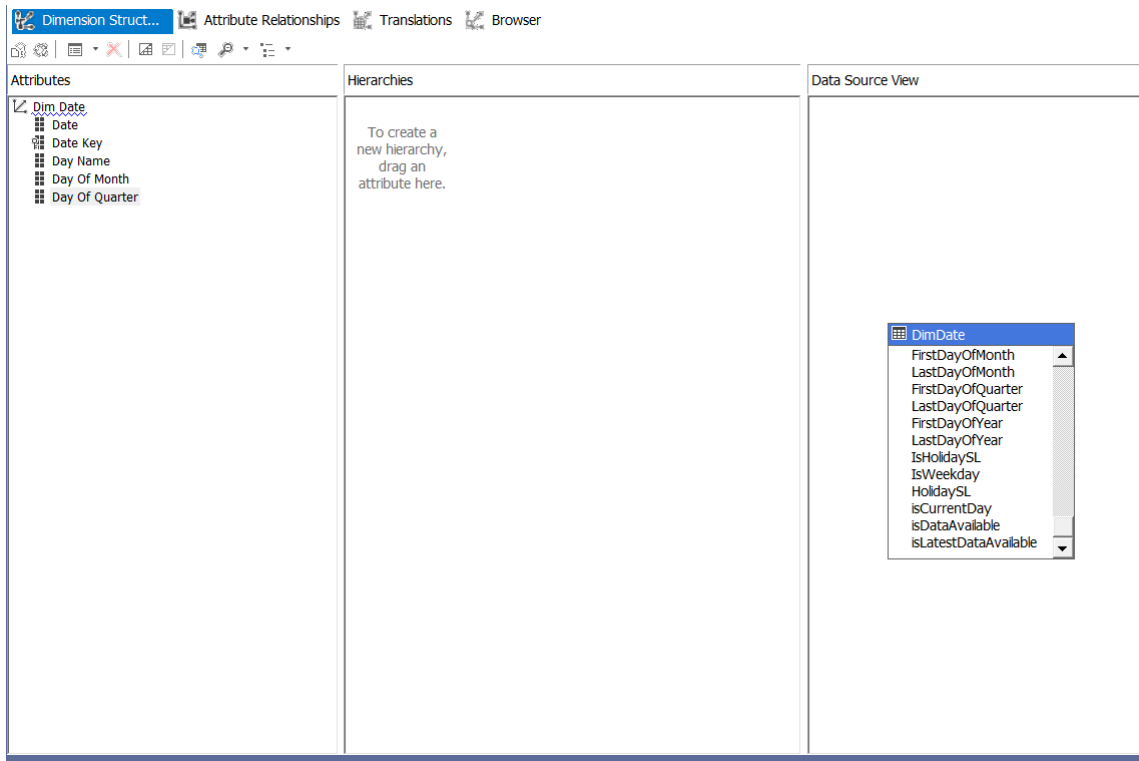
02.1 Create Data Cube

In here I choose Fact Hospital as measure group DimDepartment, DimLocation, DimDate and DimDoctor as dimensions.

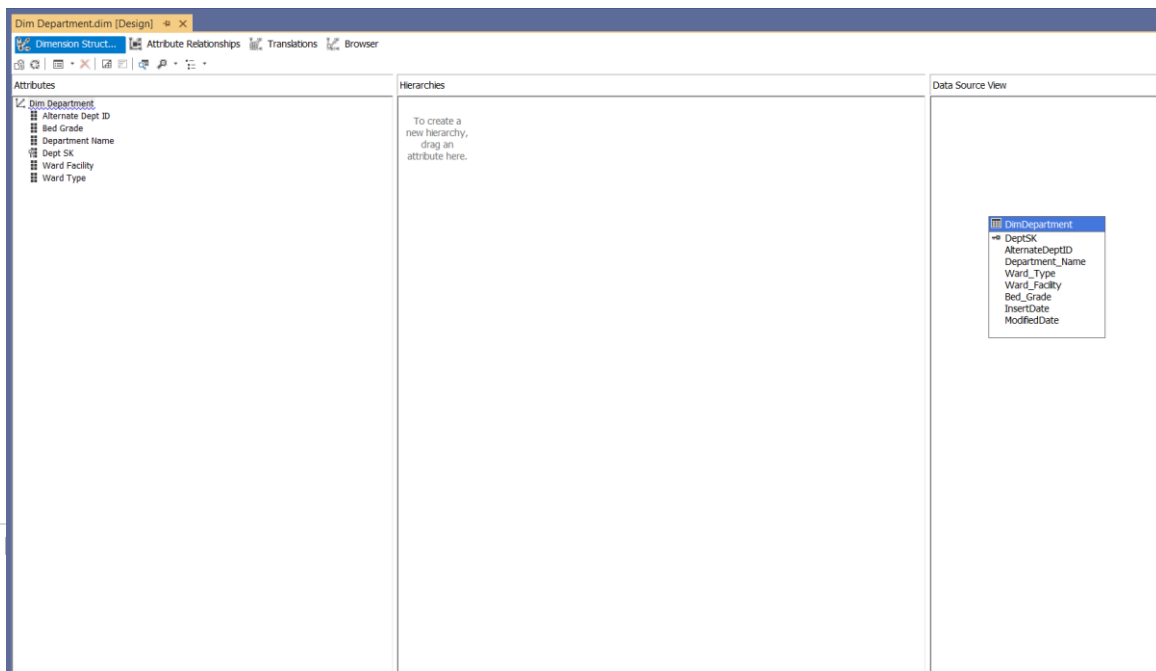


After that configure all the dimension with proper way.

2.1.1 Dim Date



2.1.2 Dim Department



2.1.4 Dim Doctor

The screenshot shows the 'Dim Doctor' design tool interface. The title bar reads 'Dim Doctor.dim [Design]'. Below the title bar is a menu bar with 'Dimension Struct...', 'Attribute Relationships', 'Translations', and 'Browser'. A toolbar with various icons is located below the menu bar. The interface is divided into three main panels: 'Attributes', 'Hierarchies', and 'Data Source View'. The 'Attributes' panel on the left lists the following attributes for 'Dim Doctor': Alternate Doctor ID, Doctor SK, First Name, FREQUENCY, INDICATOR, Last Name, MEASURE, Speciality, and SUBJECT. The 'Hierarchies' panel in the center contains the text: 'To create a new hierarchy, drag an attribute here.' The 'Data Source View' panel on the right displays a tree structure for 'DimDoctor' with the following fields: DoctorSK, AlternateDoctorID, first_name, last_name, speciality, INDICATOR, SUBJECT, MEASURE, FREQUENCY, InsertDate, and ModifiedDate.

2.1.5 Dim Location(Hierarchy using)

The screenshot shows the 'Dim Location' design tool interface. The title bar reads 'Dim Location.dim [Design]'. Below the title bar is a menu bar with 'Dimension Struct...', 'Attribute Relationships', 'Translations', and 'Browser'. A toolbar with various icons is located below the menu bar. The interface is divided into three main panels: 'Attributes', 'Hierarchies', and 'Data Source View'. The 'Attributes' panel on the left lists the following attributes for 'Dim Location': Address, Alternate Location ID, City, Country, End Date, Location SK, Postal Code, Start Date, and State. The 'Hierarchies' panel in the center contains the text: 'To create a new hierarchy, drag an attribute here.' The 'Data Source View' panel on the right displays a tree structure for 'DimLocation' with the following fields: LocationSK, AlternateLocationID, address, City, State, postalCode, Country, StartDate, EndDate, InsertDate, and ModifiedDate.

2.1.6 KPI Creation

KPI Organizer

KPI remaining patient

Calculation Tools

Metadata Functions Templates

Search Model

Measure Group:

Error loading metadata: Connection is not open.

KPI

Name: KPI remaining patient

Associated measure group: Fact Hospital

Value Expression

[Measures].[Patient Visitors]

No issues found Ln: 1 Ch: 30 SPC CRLF

Goal Expression

[Measures].[Patient Visitors]>2

No issues found Ln: 1 Ch: 32 SPC CRLF

Status

Status indicator: Gauge

Status expression:

No issues found Ln: 1 Ch: 1 SPC CRLF

Trend

Unable to query the 'Covid19_Retail_DW' cube: 'A connection cannot be made. Ensure that the server is running.'. The cube must be queried for you to browse data or meta data. Click here to retry the connection.

Output

Show output from:

2.1.7 KPI Details

Language: Default

Edit as Text Import... MDX

DSV_Hospital DW

Metadata

Search Model

Measure Group:

<All>

Measures

Fact Hospital

KPIs

Dim Date

Dim Department

Dim Doctor

Dim Location

Dim Patient

Admission Deposit

Age

Alternate Patient ID

Contact No

Discharge Date

Illness Severity

Patient City

Patient SK

Patient Visitors

Stay Days

Type Of Admission

Calculated Members

Dimension

Hierarchy

Operator

Filter Expression

Parameters

<Select dimension>

JECT	Address	Postal Code	Patient City	City	Country	Age	Contact No	Type Of Admission	Stay Days	Case Id	Fact Hospital Count	Hospital Region
5921 V...	92067		DOTHAN	Go...	Papua ...	51...	1 (11) 500...	Emergency	0-10	1	1	2
5921 V...	92067		FLORENCE	Mo...	Papua ...	51...	1 (11) 500...	Trauma	31-40	3	1	0
7520 T...	21076		BIRMINGH...	We...	Papua ...	51...	931-555-0...	Trauma	20-Nov	6	1	0
5921 V...	92067		BOAZ	Ma...	Papua ...	51...	966-555-0...	Trauma	41-50	2	1	2
7520 T...	21076		OPP	Na...	Papua ...	51...	1 (11) 500...	Trauma	41-50	4	1	1
7520 T...	21076		LUVIERNE	Por...	Papua ...	51...	1 (11) 500...	Trauma	41-50	5	1	1
7520 T...	21076		BIRMINGH...	So...	Greenla...	51...	1 (11) 500...	Trauma	51-60	9	1	1
315 SE...	98684		SHEFFIELD	Thule	Greenla...	51...	1 (11) 500...	Trauma	31-40	10	1	0
315 SE...	98684		OPELIKA	Isaf...	Iceland	71...	722-555-0...	Emergency	0-10	15	1	0
7520 T...	21076		FORT PAYNE	Nar...	Greenla...	51...	144-555-0...	Emergency	0-10	7	1	1
7520 T...	21076		ALABASTER	Go...	Greenla...	51...	1 (11) 500...	Trauma	41-50	8	1	0
315 SE...	98684		OZARK	Ak...	Iceland	51...	698-555-0...	Urgent	21-30	11	1	1
315 SE...	98684		CENTRE	Egl...	Iceland	51...	1 (11) 500...	Urgent	20-Nov	12	1	1
315 SE...	98684		MONTGOM...	Hofn	Iceland	51...	715-555-0...	Emergency	0-10	13	1	2
315 SE...	98684		MONTGOM...	Hu...	Iceland	51...	1 (11) 500...	Urgent	21-30	14	1	2
106 W...	64105		TALLASSEE	Re...	Iceland	71...	491-555-0...	Emergency	20-Nov	18	1	0
106 W...	64105		WEDDOWEE	Kefl...	Iceland	71...	188-555-0...	Emergency	0-10	16	1	0
106 W...	64105		BIRMINGH...	Pat...	Iceland	71...	1 (11) 500...	Urgent	0-10	17	1	0
10611 ...	16652		ANNISTON	Sa...	Canada	71...	561-555-0...	Trauma	31-40	21	1	2
102 Val...	31069		HUNTSVILLE	Wl...	Canada	71...	805-555-0...	Trauma	21-30	22	1	2
12 4th ...	94103		GADSDEN	Hall...	Canada	71...	1 (11) 500...	Trauma	20-Nov	23	1	2
106 W...	64105		CULLMAN	Sigl...	Iceland	71...	387-555-0...	Trauma	21-30	19	1	1
106 W...	64105		ANDALUSIA	Ves...	Iceland	71...	1 (11) 500...	Trauma	31-40	20	1	1

Dimension													Hierarchy	Operator	Filter Expression	Parameters
<Select dimension>																
SUBJECT	Address	Postal Code	Patient City	City	Country	Age	Contact No	Type Of Admission	Stay Days	Case Id	Fact Hospital Count	Hospital Regio				
OT	5921 V...	92067	DOTHAN	Go...	Papua ...	51...	1 (11) 500...	Emergency	0-10	1	1	2				
OT	5921 V...	92067	FLORENCE	Mo...	Papua ...	51...	1 (11) 500...	Trauma	31-40	3	1	0				
OT	7520 T...	21076	BIRMINGH...	We...	Papua ...	51...	931-555-0...	Trauma	20-Nov	6	1	0				
OT	5921 V...	92067	BOAZ	Ma...	Papua ...	51...	966-555-0...	Trauma	41-50	2	1	2				
OT	7520 T...	21076	OPP	Na...	Papua ...	51...	1 (11) 500...	Trauma	41-50	4	1	1				
OT	7520 T...	21076	LUVERNE	Por...	Papua ...	51...	1 (11) 500...	Trauma	41-50	5	1	1				
OT	7520 T...	21076	BIRMINGH...	So...	Greenla...	51...	1 (11) 500...	Trauma	51-60	9	1	1				
OT	315 SE...	98684	SHEFFIELD	Thule	Greenla...	51...	1 (11) 500...	Trauma	31-40	10	1	0				
OT	315 SE...	98684	OPELIKA	Isaf...	Iceland	71...	722-555-0...	Emergency	0-10	15	1	0				
OT	7520 T...	21076	FORT PAYNE	Nar...	Greenla...	51...	144-555-0...	Emergency	0-10	7	1	1				
OT	7520 T...	21076	ALABASTER	Go...	Greenla...	51...	1 (11) 500...	Trauma	41-50	8	1	0				
OT	315 SE...	98684	OZARK	Ak...	Iceland	51...	698-555-0...	Urgent	21-30	11	1	1				
OT	315 SE...	98684	CENTRE	Egl...	Iceland	51...	1 (11) 500...	Urgent	20-Nov	12	1	1				
OT	315 SE...	98684	MONTGOM...	Hofn	Iceland	51...	715-555-0...	Emergency	0-10	13	1	2				
OT	315 SE...	98684	MONTGOM...	Hu...	Iceland	51...	1 (11) 500...	Urgent	21-30	14	1	2				
OT	106 W...	64105	TALLASSEE	Re...	Iceland	71...	491-555-0...	Emergency	20-Nov	18	1	0				
OT	106 W...	64105	WEDOWEE	Kef...	Iceland	71...	188-555-0...	Emergency	0-10	16	1	0				
OT	106 W...	64105	BIRMINGH...	Pat...	Iceland	71...	1 (11) 500...	Urgent	0-10	17	1	0				
OT	10611 ...	16652	ANNISTON	Sa...	Canada	71...	561-555-0...	Trauma	31-40	21	1	2				
OT	102 Val...	31069	HUNTSVILLE	Wi...	Canada	71...	805-555-0...	Trauma	21-30	22	1	2				
OT	12 4th ...	94103	GADSDEN	Hak...	Canada	71...	1 (11) 500...	Trauma	20-Nov	23	1	2				
OT	106 W...	64105	CULLMAN	Sig...	Iceland	71...	387-555-0...	Trauma	21-30	19	1	1				
OT	106 W...	64105	ANDALUSIA	Ves...	Iceland	71...	1 (11) 500...	Trauma	31-40	20	1	1				

03. Demonstration of OLAP Operations

3.1 Browser the Cube in SQL Server Management Studio and Get the MDX for the data

Dimension													Hierarchy	Operator	Filter Expression	Parameters
<Select dimension>																
SUBJECT	Address	Postal Code	Patient City	City	Country	Age	Contact No	Type Of Admission	Stay Days	Case Id	Fact Hospital Count	Hospital Regio				
OT	5921 V...	92067	DOTHAN	Go...	Papua ...	51...	1 (11) 500...	Emergency	0-10	1	1	2				
OT	5921 V...	92067	FLORENCE	Mo...	Papua ...	51...	1 (11) 500...	Trauma	31-40	3	1	0				
OT	7520 T...	21076	BIRMINGH...	We...	Papua ...	51...	931-555-0...	Trauma	20-Nov	6	1	0				
OT	5921 V...	92067	BOAZ	Ma...	Papua ...	51...	966-555-0...	Trauma	41-50	2	1	2				
OT	7520 T...	21076	OPP	Na...	Papua ...	51...	1 (11) 500...	Trauma	41-50	4	1	1				
OT	7520 T...	21076	LUVERNE	Por...	Papua ...	51...	1 (11) 500...	Trauma	41-50	5	1	1				
OT	7520 T...	21076	BIRMINGH...	So...	Greenla...	51...	1 (11) 500...	Trauma	51-60	9	1	1				
OT	315 SE...	98684	SHEFFIELD	Thule	Greenla...	51...	1 (11) 500...	Trauma	31-40	10	1	0				
OT	315 SE...	98684	OPELIKA	Isaf...	Iceland	71...	722-555-0...	Emergency	0-10	15	1	0				
OT	7520 T...	21076	FORT PAYNE	Nar...	Greenla...	51...	144-555-0...	Emergency	0-10	7	1	1				
OT	7520 T...	21076	ALABASTER	Go...	Greenla...	51...	1 (11) 500...	Trauma	41-50	8	1	0				
OT	315 SE...	98684	OZARK	Ak...	Iceland	51...	698-555-0...	Urgent	21-30	11	1	1				
OT	315 SE...	98684	CENTRE	Egl...	Iceland	51...	1 (11) 500...	Urgent	20-Nov	12	1	1				
OT	315 SE...	98684	MONTGOM...	Hofn	Iceland	51...	715-555-0...	Emergency	0-10	13	1	2				
OT	315 SE...	98684	MONTGOM...	Hu...	Iceland	51...	1 (11) 500...	Urgent	21-30	14	1	2				
OT	106 W...	64105	TALLASSEE	Re...	Iceland	71...	491-555-0...	Emergency	20-Nov	18	1	0				
OT	106 W...	64105	WEDOWEE	Kef...	Iceland	71...	188-555-0...	Emergency	0-10	16	1	0				
OT	106 W...	64105	BIRMINGH...	Pat...	Iceland	71...	1 (11) 500...	Urgent	0-10	17	1	0				
OT	10611 ...	16652	ANNISTON	Sa...	Canada	71...	561-555-0...	Trauma	31-40	21	1	2				
OT	102 Val...	31069	HUNTSVILLE	Wi...	Canada	71...	805-555-0...	Trauma	21-30	22	1	2				
OT	12 4th ...	94103	GADSDEN	Hak...	Canada	71...	1 (11) 500...	Trauma	20-Nov	23	1	2				
OT	106 W...	64105	CULLMAN	Sig...	Iceland	71...	387-555-0...	Trauma	21-30	19	1	1				
OT	106 W...	64105	ANDALUSIA	Ves...	Iceland	71...	1 (11) 500...	Trauma	31-40	20	1	1				

3.2 Roll -Up

[illegible]

3.3 Drill-Down

[illegible]

3.4 Slice

AutoSave Off new1 Search (Alt+Q)

File Home Insert Page Layout Formulas Data Review View Help Power Pivot Team PivotTable Analyze

Undo Paste Font Alignment Number

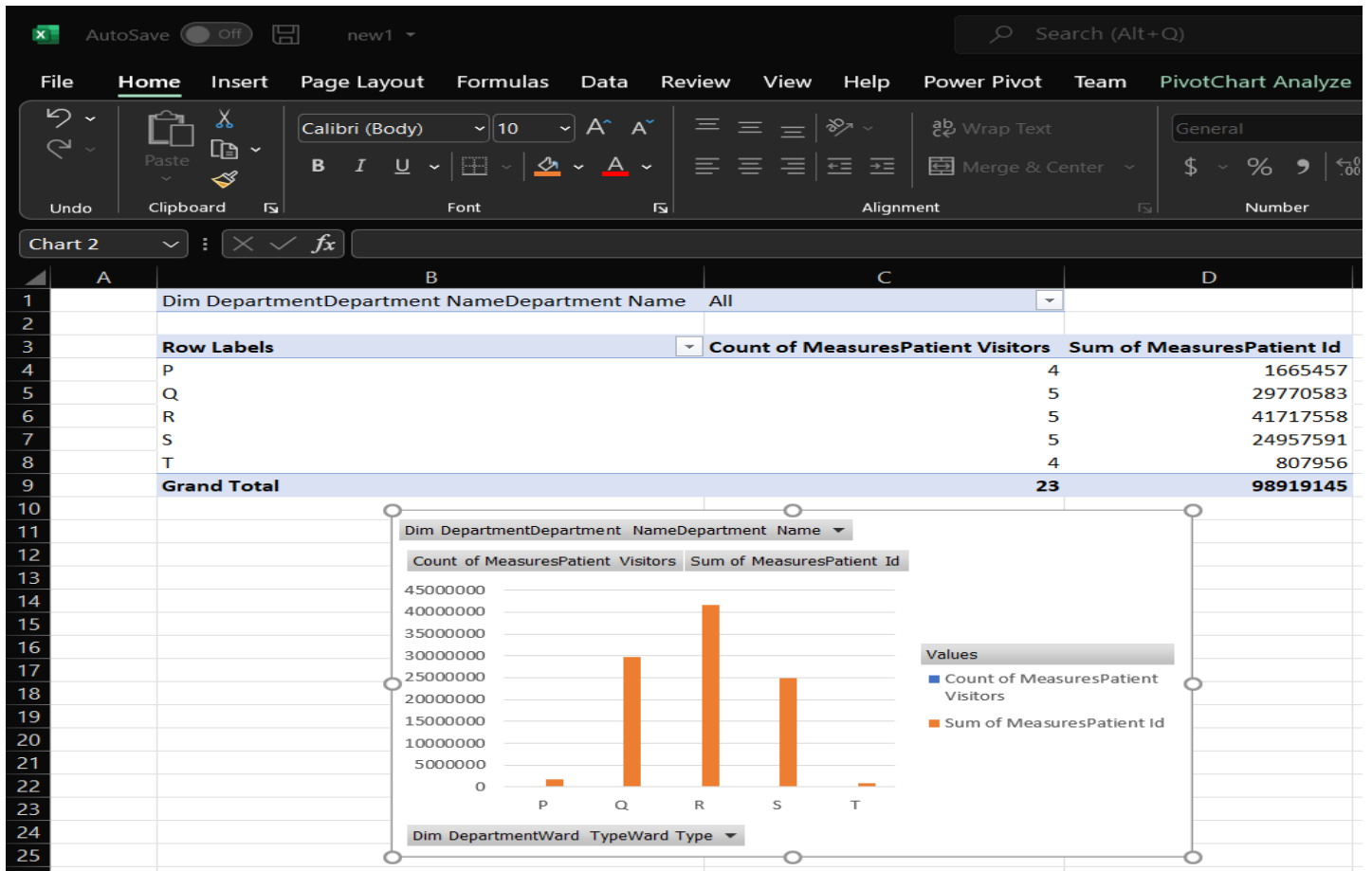
B4 Sum of MeasuresPatient Id

	B	C	D	E	F	G	H
1	MeasuresKPI remaining patient Goal	All					
2	MeasuresPatient Visitors	All					
3							
4	Sum of MeasuresPatient Id	Column Labels					
5	Row Labels	anesthesia	gynecology	radiotherapy	surgery	TB & Chest disease	Grand Total
6	P	166746	1163671	243396		91644	1665457
7	Q	3457824	22342498	2955669	132572	882020	29770583
8	R	4871319	31123378	4440875	111564	1170422	41717558
9	S	2989094	18187126	2796720	143335	841316	24957591
10	T	68390	595408	77543		66615	807956
11	Grand Total	11553373	73412081	10514203	387471	3052017	98919145
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							

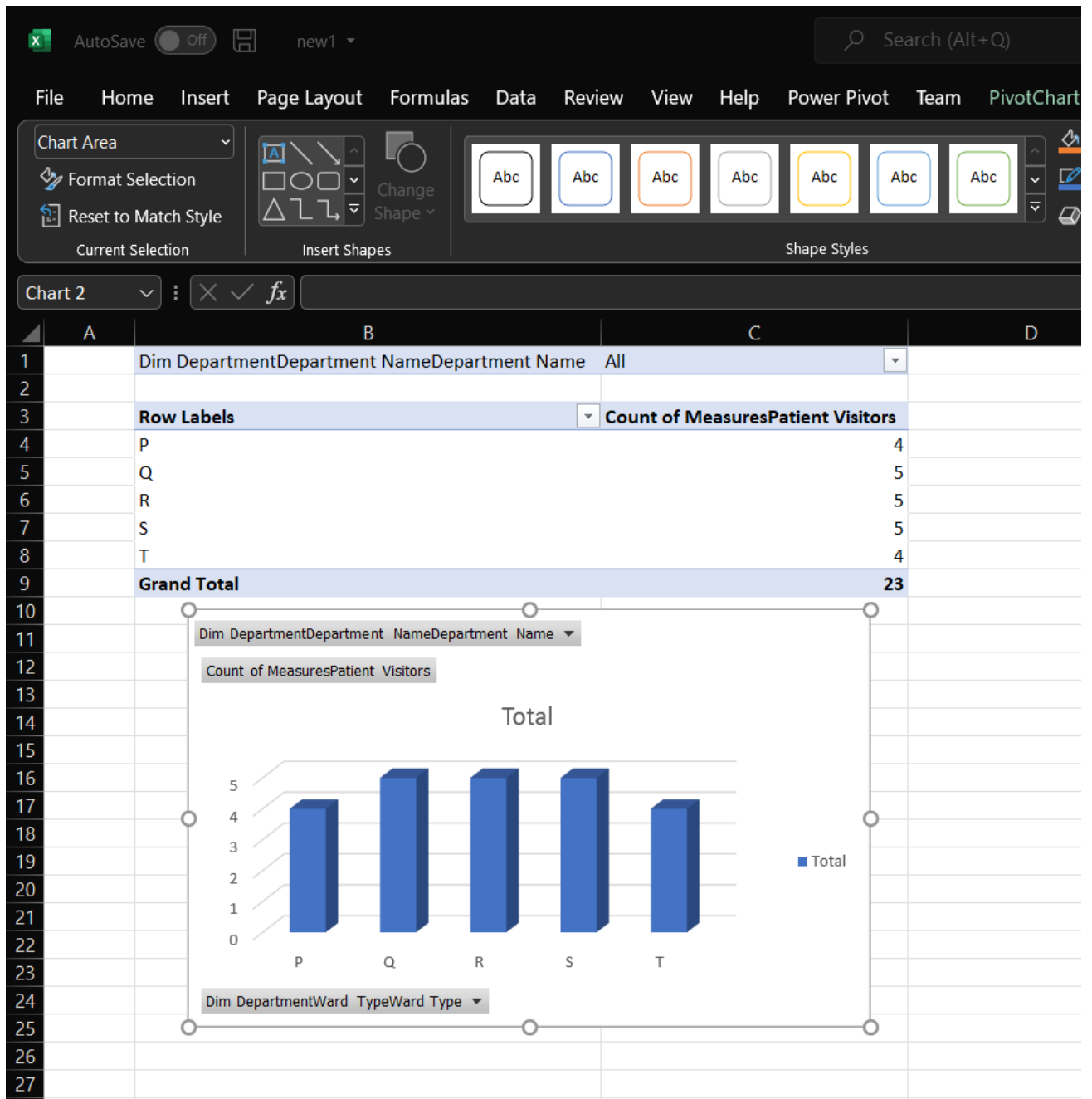
Dim Department... P Q R S T Unknown

Dim Department... anesthesia gynecology radiotherapy surgery TB & Chest disease Unknown

3.5 Dice

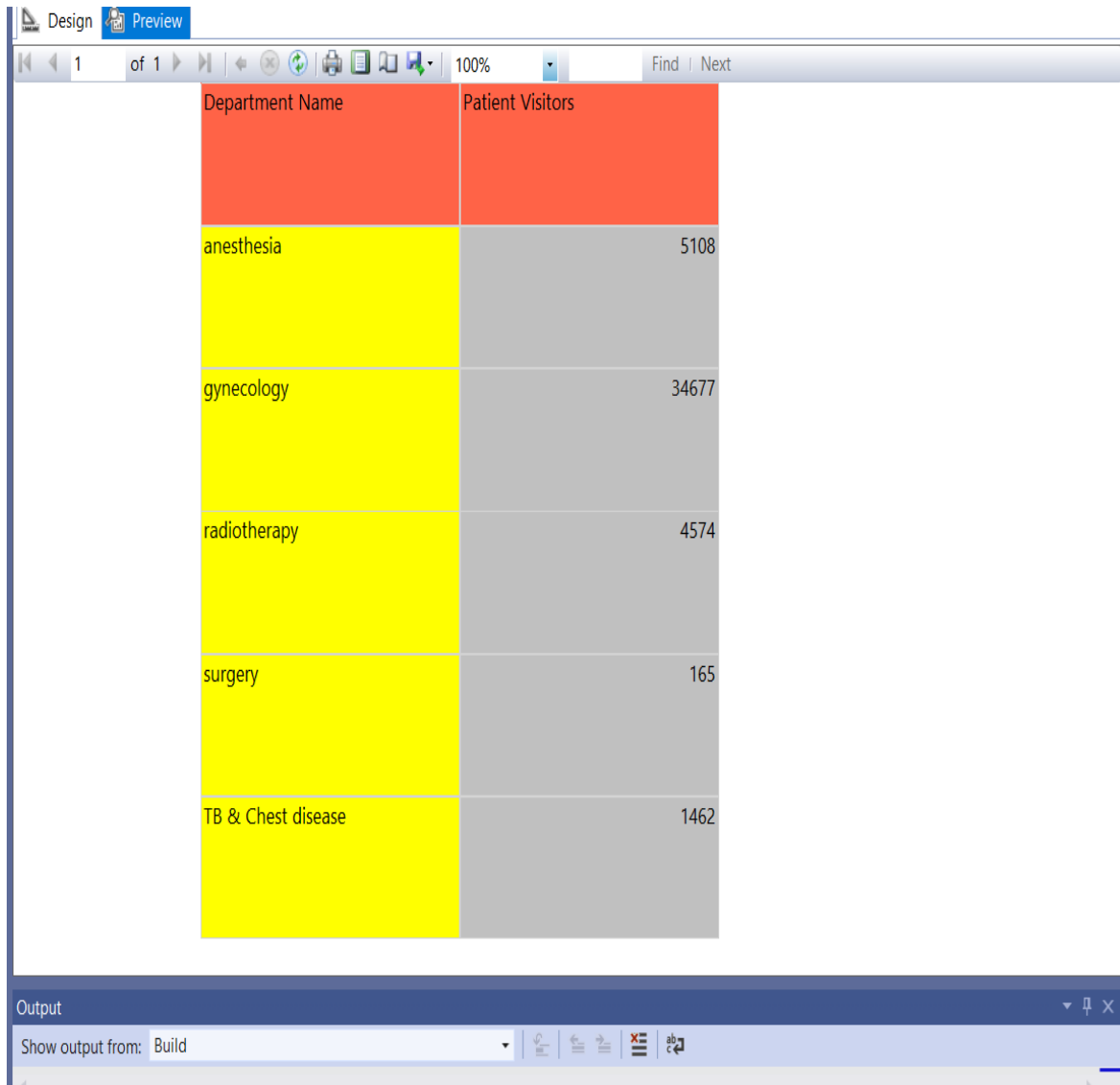


3.6 Pivot



04.SSRS Reports

04.1 Report with a matrix



Department Name	Patient Visitors
anesthesia	5108
gynecology	34677
radiotherapy	4574
surgery	165
TB & Chest disease	1462

Output

Show output from: Build

04.2 Report with Parameter

Department_Name

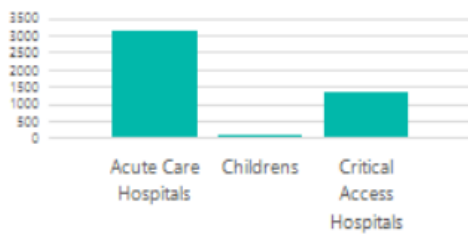
1 100% Find | Next

Department Name	Acute Care Hospitals	Childrens	Critical Access Hospitals
radiotherapy	3145	75	1354

04.2 Report With Chart

Patient Details

radiotherapy



Patient Details

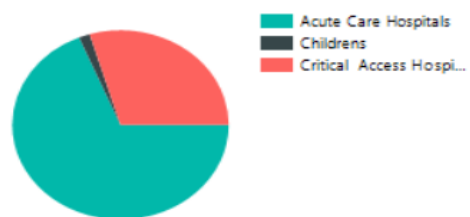
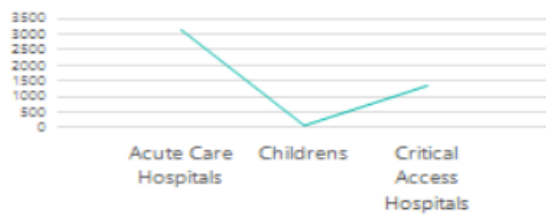
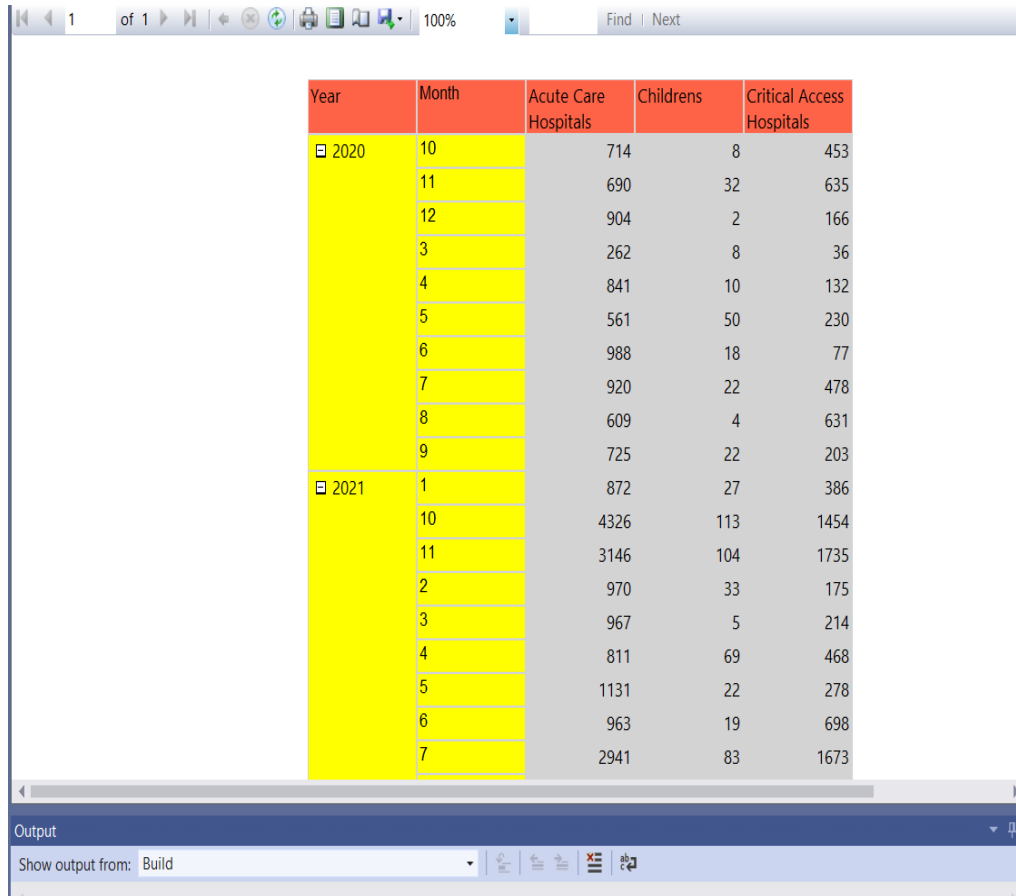


Chart Title

Patient Visitors



04.3 Report with Drill – Down



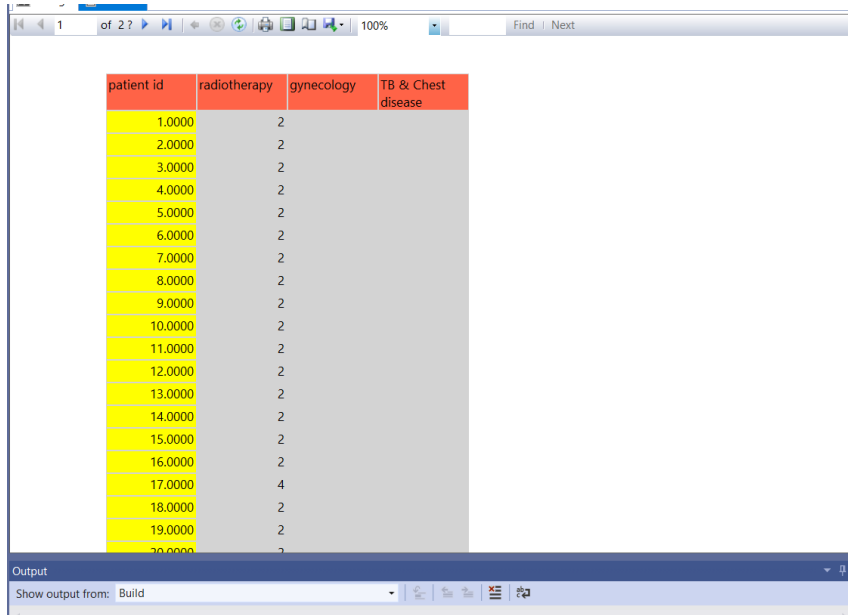
1 of 1 100% Find | Next

Year	Month	Acute Care Hospitals	Childrens	Critical Access Hospitals
2020	10	714	8	453
	11	690	32	635
	12	904	2	166
	3	262	8	36
	4	841	10	132
	5	561	50	230
	6	988	18	77
	7	920	22	478
	8	609	4	631
2021	9	725	22	203
	1	872	27	386
	10	4326	113	1454
	11	3146	104	1735
	2	970	33	175
	3	967	5	214
	4	811	69	468
	5	1131	22	278
	6	963	19	698
	7	2941	83	1673

Output

Show output from: Build

04.4 Report with Drill – Through

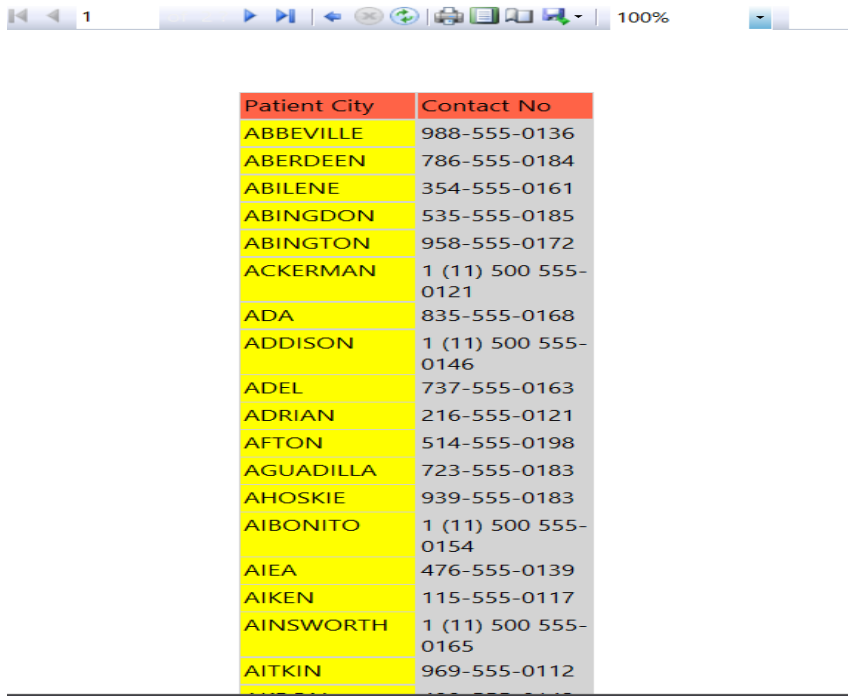


The screenshot shows a software window with a table and an output pane. The table has four columns: 'patient id', 'radiotherapy', 'gynecology', and 'TB & Chest disease'. The 'patient id' column contains values from 1.0000 to 20.0000. The 'radiotherapy' column contains values 2, 4, and 2. The 'gynecology' and 'TB & Chest disease' columns are empty. The output pane at the bottom shows 'Show output from: Build'.

patient id	radiotherapy	gynecology	TB & Chest disease
1.0000	2		
2.0000	2		
3.0000	2		
4.0000	2		
5.0000	2		
6.0000	2		
7.0000	2		
8.0000	2		
9.0000	2		
10.0000	2		
11.0000	2		
12.0000	2		
13.0000	2		
14.0000	2		
15.0000	2		
16.0000	2		
17.0000	4		
18.0000	2		
19.0000	2		
20.0000	2		

Output
Show output from: Build

04.5 Drill – Through Result



The screenshot shows a software window with a table. The table has two columns: 'Patient City' and 'Contact No'. The 'Patient City' column contains values from ABBEVILLE to AITKIN. The 'Contact No' column contains values from 988-555-0136 to 969-555-0112. The table is displayed in a yellow background.

Patient City	Contact No
ABBEVILLE	988-555-0136
ABERDEEN	786-555-0184
ABILENE	354-555-0161
ABINGDON	535-555-0185
ABINGTON	958-555-0172
ACKERMAN	1 (11) 500 555-0121
ADA	835-555-0168
ADDISON	1 (11) 500 555-0146
ADEL	737-555-0163
ADRIAN	216-555-0121
AFTON	514-555-0198
AGUADILLA	723-555-0183
AHOSKIE	939-555-0183
AIBONITO	1 (11) 500 555-0154
AIEA	476-555-0139
AIKEN	115-555-0117
AINSWORTH	1 (11) 500 555-0165
AITKIN	969-555-0112