



# **Sri Lanka Institute of Information Technology**

**Data Warehousing and Business Intelligence  
IT3021**

**Assignment 2  
2025**

## **Assignment 2 Report**

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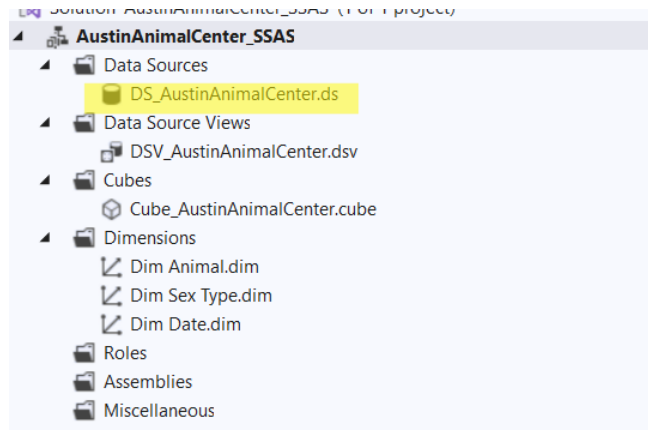
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# 1 Data source for the assignment 2

## 1.1 Data Source Introduction

This project is based on the **AustinAnimalCenter\_DW** warehouse, created using the processed data from the assignment's staging and transformation steps..

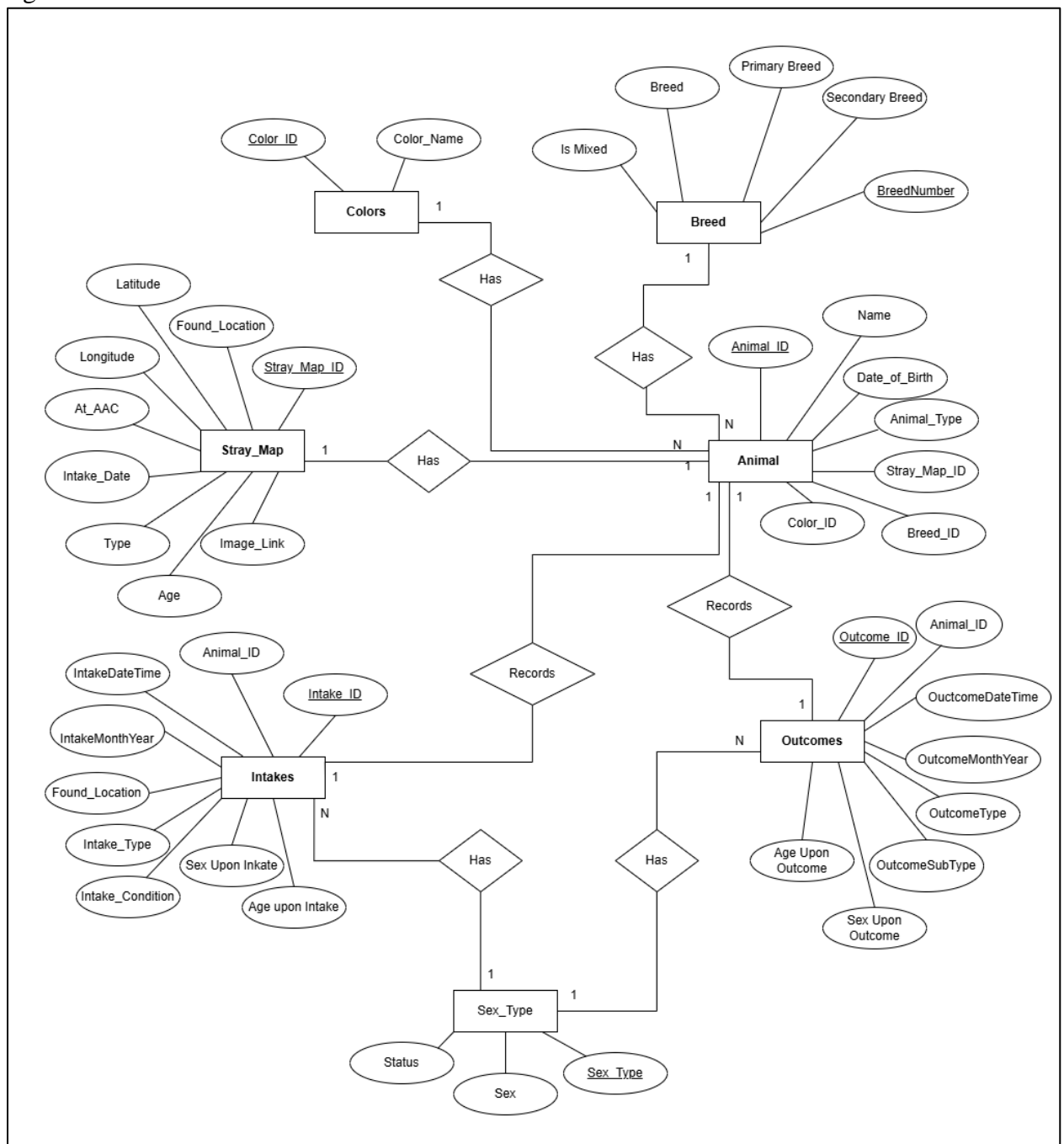


The data warehouse was created using the Austin Animal Center dataset which cover data from October 1, 2013 to March 3, 2021, spanning around eight years.

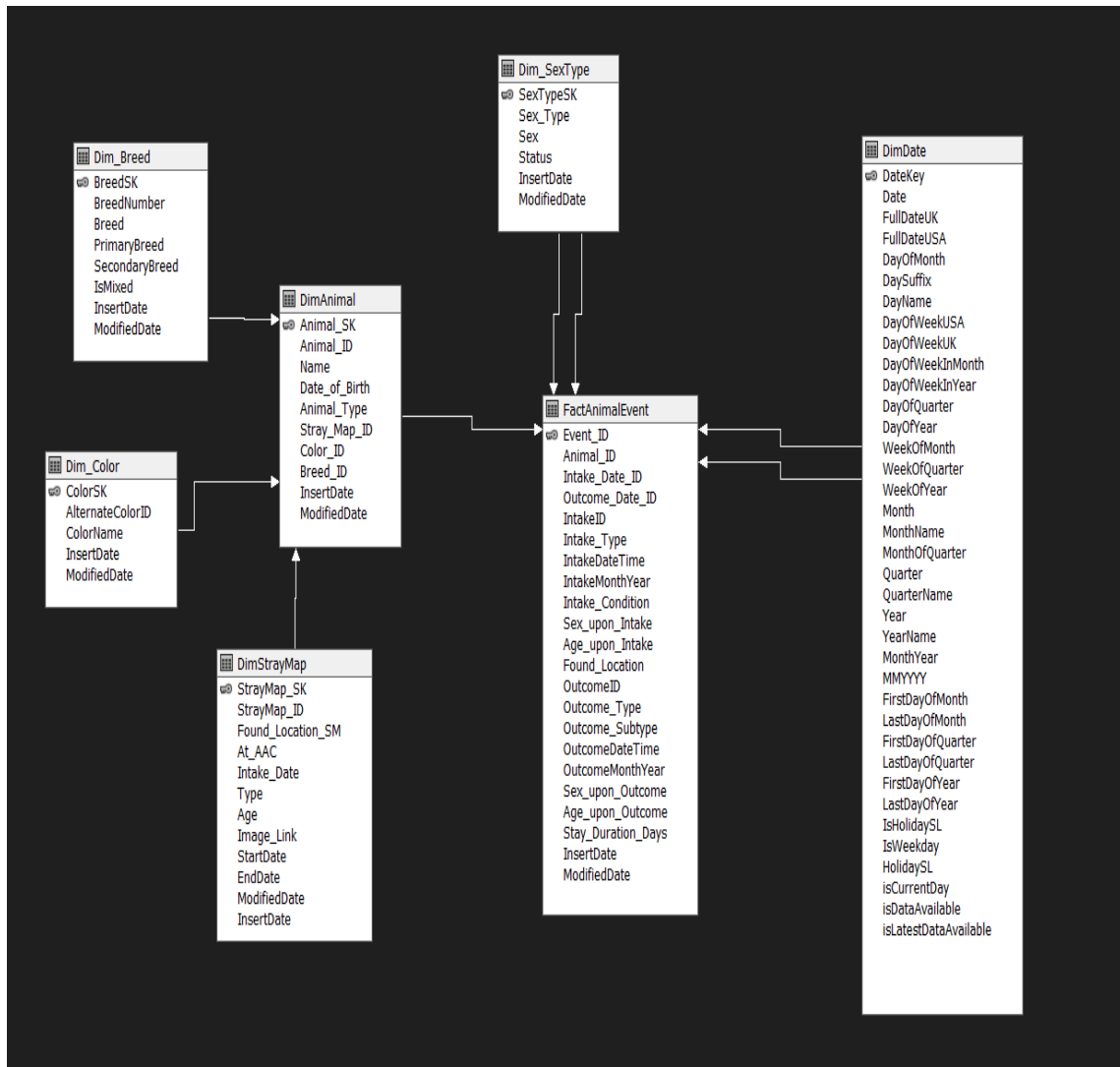
**Snowflake** schema was used, and the data warehouse contains six dimensional tables and one fact table.

- Dimensions –
  1. DimStrayMap - The stray map dimension table contains stray map details, with StrayMapSK as the surrogate key.
  2. DimColor - Contains the color details of the animals, with ColorSK as the surrogate key.
  3. DimBreed - Contains breed details of the animals, with BreedSK as the surrogate key.
  4. DimAnimal – The animal dimension table contains animal details, with AnimalSK as the surrogate key. DimStrayMap, DimColor, DimBreed linked using foreign keys.
  5. DimSexType - A categorical value describing the sex of the animal. SexTypeSK (Surrogate Key)
  6. DimDate - This is a common dimension. DateKey is the surrogate key. An SQL script was used to generate the date dimension based on the IntakeDateTime and OutcomeDateTime fields
- Fact table –
  1. FactAnimalEvent – Contains all the transactional data related to animal intake and outcome events.

## ER- Diagram-DW



## Implemented DW



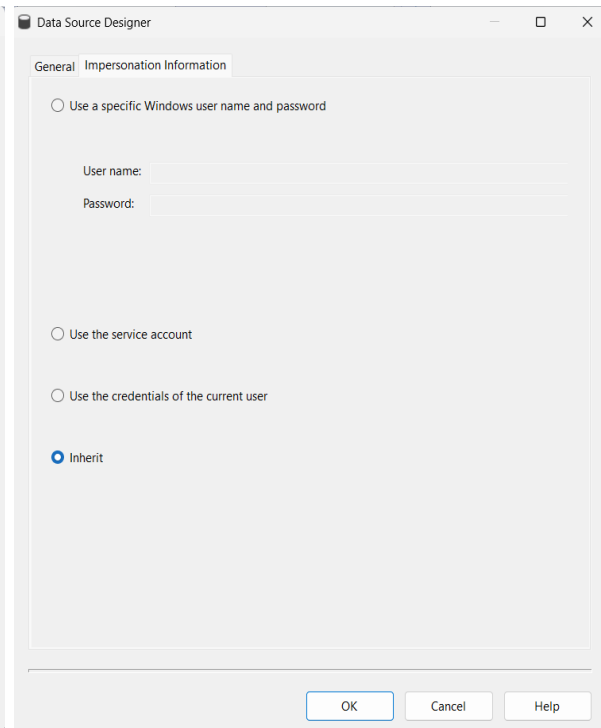
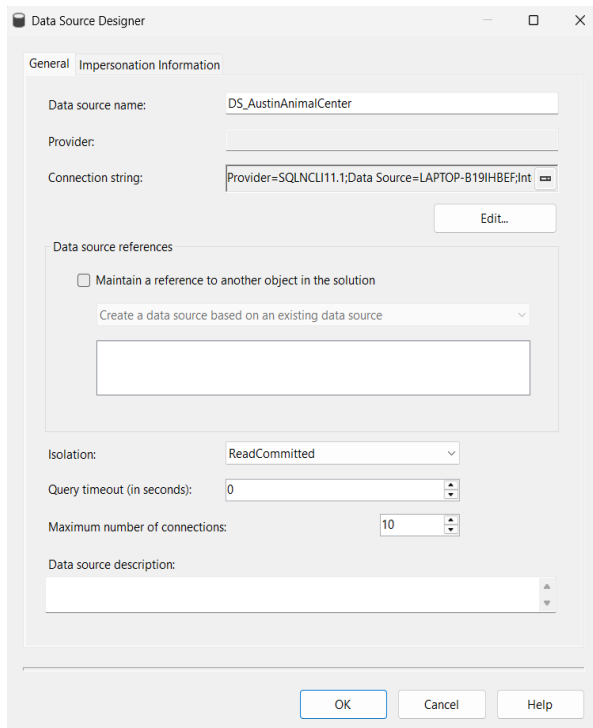
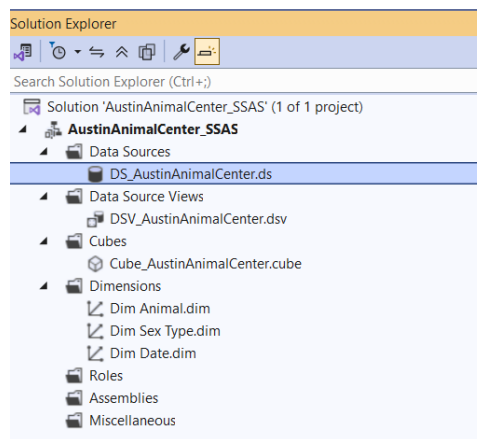
## 2 SSAS Cube implementation

In this project, an OLAP cube was created to support fast, multidimensional analysis of the animal center data. The cube includes **dimensions** (like date, animal type, and location) and a **measure group** that holds key facts for analysis. The cube was built using SQL Server Data Tools, under **Analysis Services Multidimensional Project**.

### 2.1 Cube Implementation

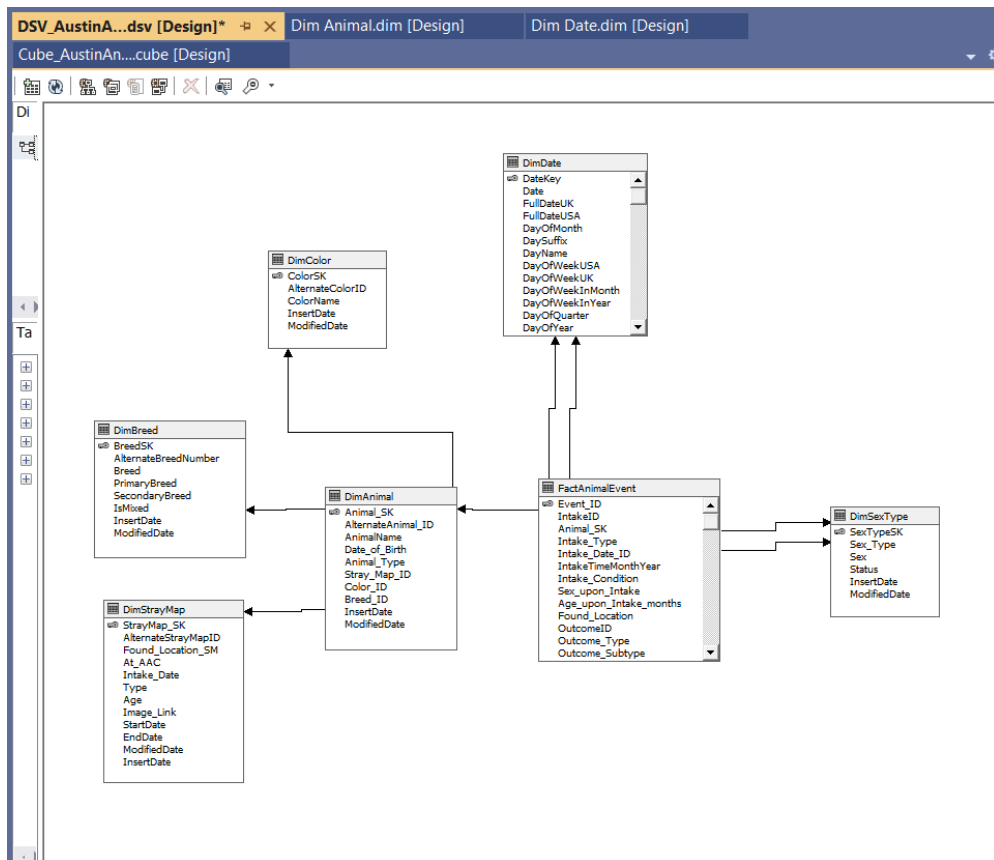
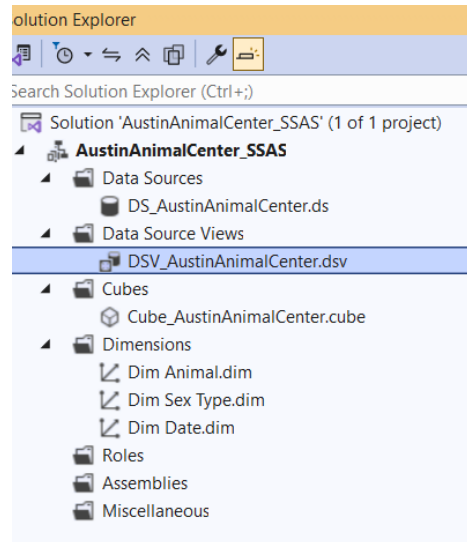
#### 2.1.1 Creating the Data Source

The AustinAnimalCenter\_DW data warehouse was connected as the data source using SQL Server Management Studio, with access managed through Windows authentication (inherit mode).



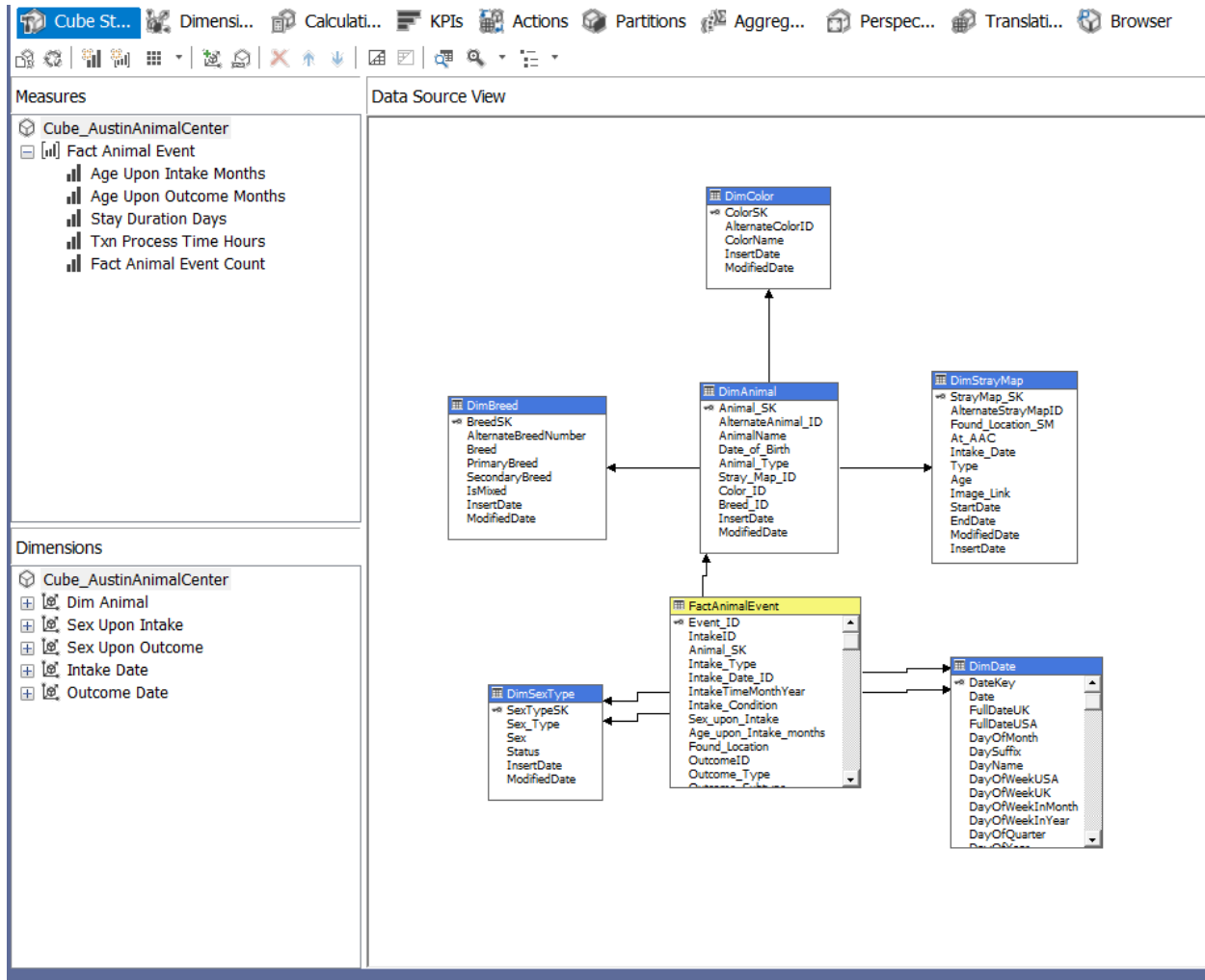
## 2.1.2 Creating the Data Source View

After creating DS\_AustinAnimalCenter.ds as the data source, a Data Source View (DSV) was created to access the tables. The DSV was based on the existing data source, with the required tables and their relationships selected, and the view was saved as DSV\_AustinAnimalCenter.dsv.



### 2.1.3 Creating the Cube

The cube was created by selecting the DS\_Austin\_Animal\_Center.dsv in the Cube Wizard. The FactAnimalEvent table was chosen as the measure group, followed by selecting the required measures and dimensions (Dim Animal, DimDate and DimSexType). Finally, the cube was named Cube\_AustinAnimalCenter.cube.



### 2.1.4 Creating Hierarchies and Dimension Structures

After creating the cube, the dimensions appear in the Dimensions directory of the Solution Explorer. The next step is to select the dimension attributes by dragging them from the Data Source View into the Attributes column. Similarly, hierarchy attributes are dragged into the Hierarchy column to set up the hierarchies. This process is repeated for each dimension. This process is repeated for all the dimensions.



## DimDate with Date Hierarchy

The screenshot displays the SQL Server Enterprise Developer interface for the 'DimDate' dimension. The 'Dimension Structure' pane on the left lists various date attributes. The 'Hierarchies' pane in the center shows a 'Date Hierarchy' with levels: Year, Quarter Name, Month Name, and Day Of Month. The 'Data Source View' pane on the right lists the corresponding attributes for the 'DimDate' dimension.

**Attributes**

- Dim Date
  - Date
  - Date Key
  - Day Name
  - Day Of Month
  - Day Of Quarter
  - Day Of Week In Month
  - Day Of Week In Year
  - Day Of Week UK
  - Day Of Week USA
  - Day Of Year
  - Day Suffix
  - First Day Of Month
  - First Day Of Quarter
  - First Day Of Year
  - Full Date UK
  - Full Date USA
  - Is Current Day
  - Is Data Available
  - Is Latest Data Available
  - Is Weekday
  - Last Day Of Month
  - Last Day Of Quarter
  - Last Day Of Year
  - MMYYYY
  - Month
  - Month Name
  - Month Of Quarter
  - Month Year
  - Quarter
  - Quarter Name
  - Week Of Month
  - Week Of Quarter
  - Week Of Year
  - Year
  - Year Name

**Hierarchies**

- Date Hierarchy
  - Year
  - Quarter Name
  - Month Name
  - Day Of Month
  - <new level>

**Data Source View**

- DimDate
  - DateKey
  - Date
  - FullDateUK
  - FullDateUSA
  - DayOfMonth
  - DaySuffix
  - DayName
  - DayOfWeekUSA
  - DayOfWeekUK
  - DayOfWeekInMonth
  - DayOfWeekInYear
  - DayOfQuarter
  - DayOfYear
  - WeekOfMonth
  - WeekOfQuarter
  - WeekOfYear
  - Month
  - MonthName
  - MonthOfQuarter
  - Quarter
  - QuarterName
  - Year
  - YearName
  - MonthYear
  - MMYYYY
  - FirstDayOfMonth
  - LastDayOfMonth
  - FirstDayOfQuarter
  - LastDayOfQuarter
  - FirstDayOfYear
  - LastDayOfYear
  - IsHolidaySL
  - IsWeekday
  - HolidaySL
  - IsCurrentDay
  - IsDataAvailable
  - IsLatestDataAvailable

## DimAnimal with Breed Hierarchy

The screenshot displays the SQL Server Enterprise Developer interface for the 'DimAnimal' dimension. The 'Attributes' pane on the left lists various animal attributes. The 'Hierarchies' pane in the center shows a 'Breed Hierarchy' with levels: Breed, Primary Breed, Secondary Breed, and Is Mixed. The 'Data Source View' pane on the right lists the corresponding attributes for the 'DimAnimal' dimension.

**Attributes**

- Dim Animal
  - Age
  - Alternate Animal ID
  - Alternate Breed Number
  - Alternate Color ID
  - Alternate Stray Map ID
  - Animal Name
  - Animal SK
  - Animal Type
  - At AAC
  - Breed
  - Breed ID
  - Breed SK
  - Color ID
  - Color Name
  - Color SK
  - Date Of Birth
  - Found Location SM
  - Image Link
  - Intake Date
  - Is Mixed
  - Primary Breed
  - Secondary Breed
  - Stray Map ID
  - Stray Map SK
  - Type

**Hierarchies**

- Breed Hierarchy
  - Breed
  - Primary Breed
  - Secondary Breed
  - Is Mixed
  - <new level>

**Data Source View**

- DimStrayMap
  - StrayMap\_SK
  - AlternateStrayMapID
  - Found\_Location\_SM
  - At AAC
  - Intake\_Date
  - Type
  - Age
  - Image\_Link
  - StrayDate
  - EndDate
  - ModifiedDate
  - InsertDate
- DimAnimal
  - Animal\_SK
  - AlternateAnimal\_ID
  - AnimalName
  - Date\_of\_Birth
  - Animal\_Type
  - Stray\_Map\_ID
  - Color\_ID
  - Breed\_ID
  - InsertDate
  - ModifiedDate
- DimBreed
  - BreedSK
  - AlternateBreedNumber
  - Breed
  - PrimaryBreed
  - SecondaryBreed
  - IsMixed
  - InsertDate
  - ModifiedDate
- DimColor
  - ColorSK
  - AlternateColorID
  - ColorName
  - InsertDate
  - ModifiedDate

## Dim Sextype

The screenshot displays the SQL Server Enterprise Developer interface for the 'DimSexType' dimension. The 'Attributes' pane on the left lists various sex type attributes. The 'Hierarchies' pane in the center shows a 'Sex Type Hierarchy' with levels: Sex Type, Sex, and Status. The 'Data Source View' pane on the right lists the corresponding attributes for the 'DimSexType' dimension.

**Attributes**

- Dim Sex Type
  - Sex
  - Sex Type
  - Sex Type SK
  - Status

**Hierarchies**

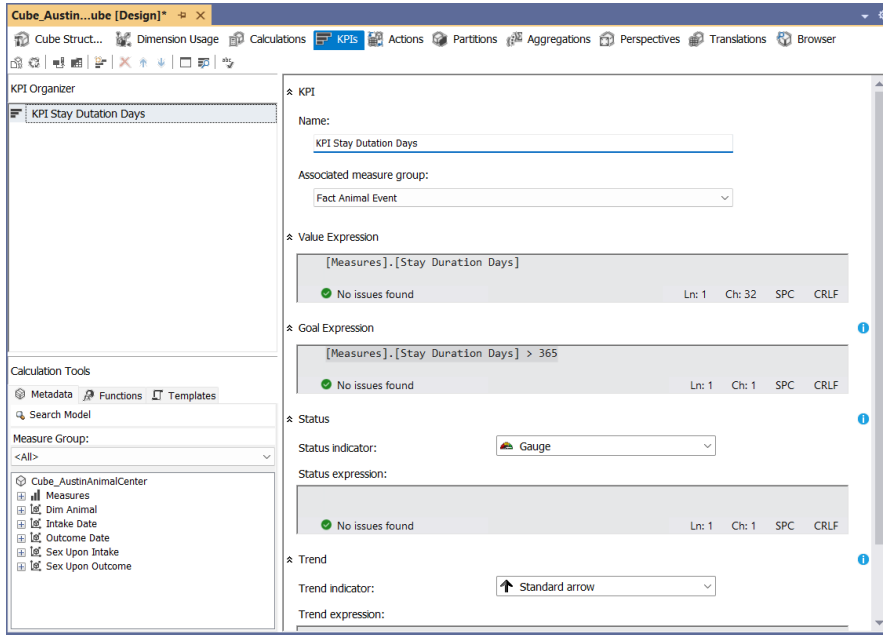
- Sex Type Hierarchy
  - Sex Type
  - Sex
  - Status
  - <new level>

**Data Source View**

- DimSexType
  - SexTypeSK
  - Sex\_Type
  - Sex
  - Status
  - InsertDate
  - ModifiedDate

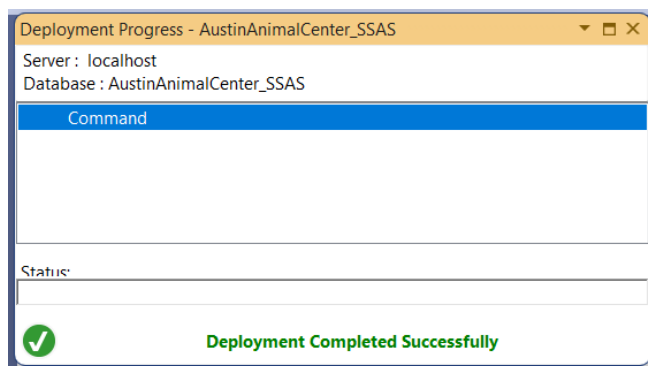
## 2.1.5 Creating KPIs

KPIs (Key Performance Indicators) are measurable values used to evaluate performance toward specific goals. They help track progress, set clear targets, and guide better decision-making. In this project, a KPI was created to monitor Stay Duration. The goal expression is, `[Measures].[Stay Duration Days] > 365` which flags cases where the stay lasts longer than a year



## 2.1.6 Deploying the Cube

Finally, after all the above was done, the finalized cube was deployed.



## 3 Demonstration of OLAP Operations

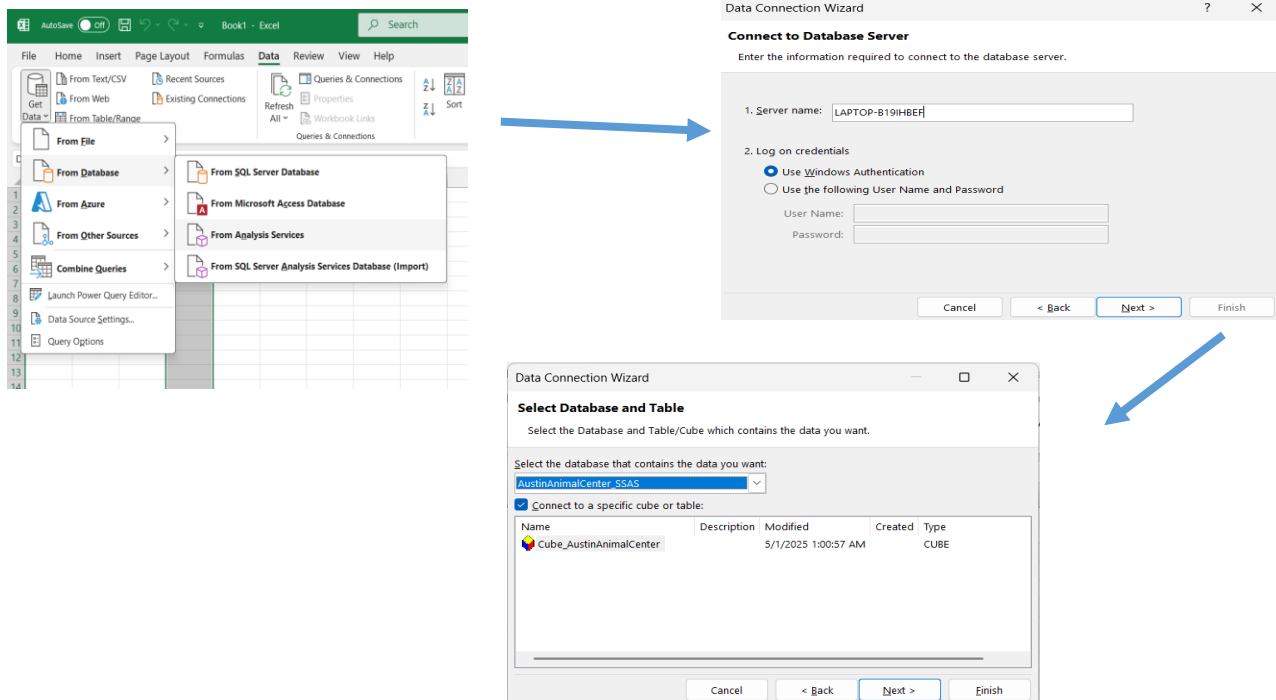
OLAP (Online Analytical Processing) helps to easily understand and analyze data for better business decisions. It plays a major role in Business Intelligence by helping to identify trends and analyze data from different views.

Main OLAP operations are:

1. Drill Down – Shows more detailed data by moving down the hierarchy.
2. Roll Up – Shows summarized data by moving up the hierarchy.
3. Slice – Selects one dimension to create a sub-cube.
4. Dice – Creates a sub-cube by selecting two or more dimensions.
5. Pivot – Rotates the cube to view data from a different angle

### 3.1 Connecting to the SSAS Cube

To connect with the SSAS cube, Excel was used. From the Data tab, the cube was connected by selecting Get Data from Analysis Services, entering the server name, and selecting the cube (Cube\_AustinAnimalCenter). The data was loaded as a PivotTable.



## 3.2 OLAP Operations Demonstration Excel Report

### 3.2.1 Roll Up

In this case, the roll up operation was applied to group animal events and stay duration and they were summarized by gender, allowing users to analyze overall trends and compare how these measures change over time.

Yearly Analysis of Animal Events with and Stay Duration						
Row Labels	Column Labels		Fact Animal Event Count		Total Stay Duration Days	Total Fact Animal Event Count
	Stay Duration Days		Female	Male		
	Female	Male				
2013	183611	232282	2247	2430	415893	4677
2014	780904	1015069	10163	11255	1795973	21418
2015	902456	1093343	10456	11653	1995799	22109
2016	890195	1211085	10152	11776	2101280	21928
2017	907767	1220884	10422	11949	2128651	22371
2018	880967	1316701	10008	12112	2197668	22120
2019	815533	1347827	10889	13111	2163360	24000
2020	421351	534327	4913	5728	955678	10641
2021	42642	62377	378	537	105019	915
Grand Total	5825426	8033895	69628	80551	13859321	150179

### 3.2.2 Drill Down

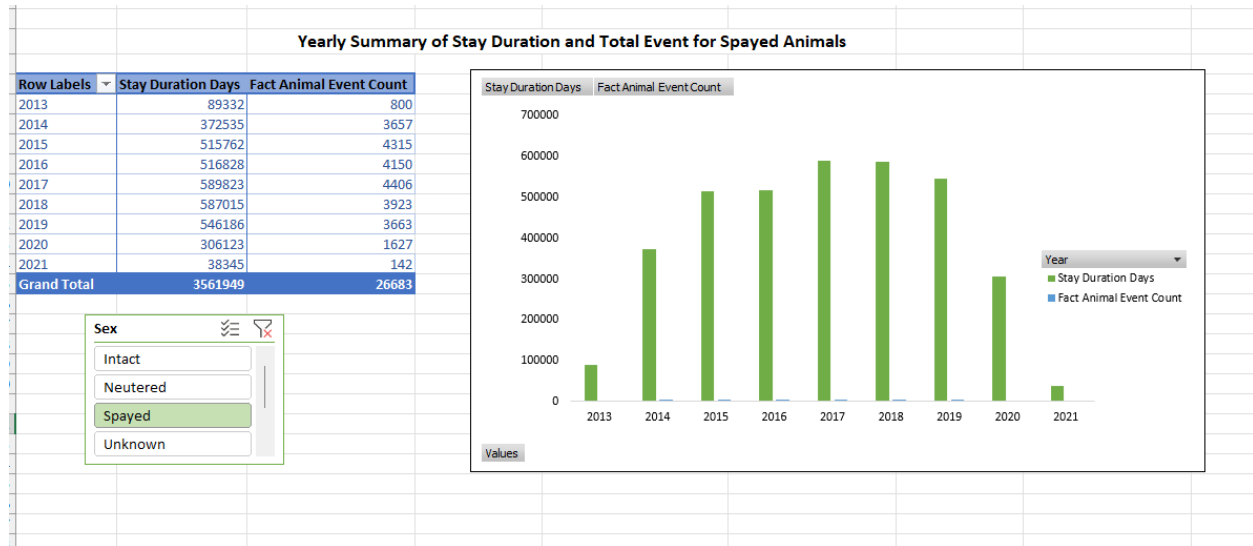
Here the drill down has been done for animal events based on the time hierarchy. The analysis was done by drilling down from year to quarter, then to month, and finally to the day of the month. This helps to view detailed trends in total events and stay durations over time according to gender.

Yearly Analysis of Animal Events with and Stay Duration			
Row Labels	Stay Duration Days	Fact Animal Event Count	
2013	416204	4935	
Fourth	416204	4935	
December	106033	1505	
Female	43145	653	
Male	62713	754	
Unknown	175	98	
November	160672	1599	
Female	73156	745	
Male	87439	784	
Unknown	77	70	
October	149499	1831	
Female	67310	849	
Male	82130	892	
Unknown	59	90	
2014	1798125	22803	
Female	780904	10163	
Male	1015069	11255	
Unknown	2152	1385	
2015	1999220	23981	
Female	902456	10456	
Male	1093343	11653	
Unknown	3421	1872	
2016	2104280	23565	
Female	890195	10152	
Male	1211085	11776	
Unknown	3000	1637	

### 3.2.3 Slice

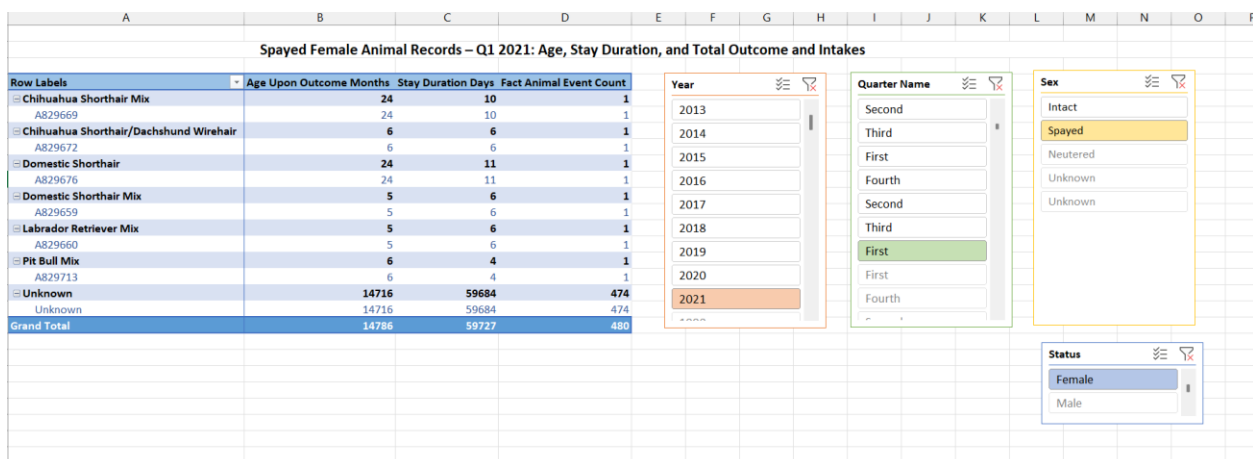
Summary of Stay Duration and Total Event for Spayed Animals slice.

In this slice operation, the Animal Type dimension was filtered to include only spayed animals. This allows analysis of stay duration and total events happen for spayed animals across all available years.



### 3.2.4 Dice

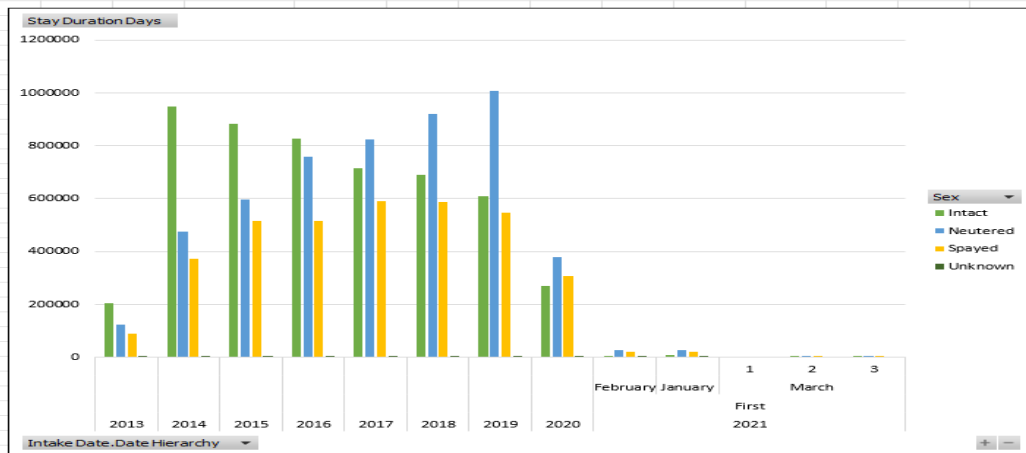
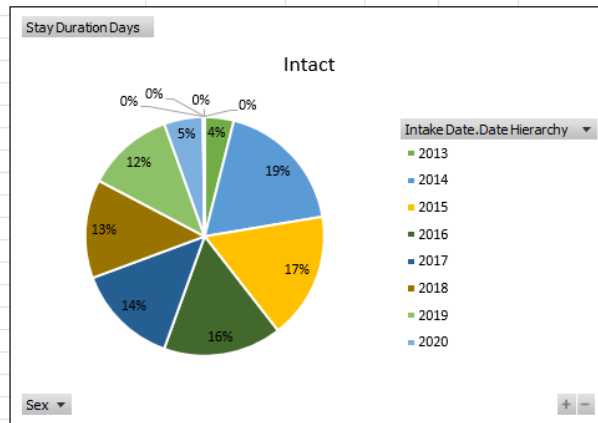
A dice operation was performed to focus on spayed female animals during the first quarter of 2021. By selecting the Animal Type, Gender, and Date dimensions, a sub-cube was created where each animal breed appears in a row. This allows the analysis of stay duration, intake age, total intakes, and outcomes for each breed of spayed female animals in that specific time frame.



### 3.2.5 Pivot

The sub-cube has been pivoted across the Year, Quarter, Month, and Day hierarchical dimensions to view the stay duration measure from different perspectives. This enables a more detailed analysis of stay duration by sterilization status (spayed, neutered, intact, unknown) across various time periods.

Stay Duration Days	Column Labels				
Row Labels	Intact	Neutered	Spayed	Unknown	Grand Total
2013	203905	122656	89332	311	416204
2014	949632	473806	372535	2152	1798125
2015	883117	596920	515762	3421	1999220
2016	827218	757234	516828	3000	2104280
2017	714135	824693	589823	3338	2131989
2018	689202	921451	587015	2785	2200453
2019	609262	1007912	546186	5051	2168411
2020	270385	379170	306123	1451	957129
2021	12162	54512	38345	171	105190
First	12162	54512	38345	171	105190
February	2961	26103	19113	35	48212
January	8643	27424	18583	136	54786
March	558	985	649	0	2192
1			0		0
2		1	984	129	1114
3		557	1	520	1078
Grand Total	5159018	5138354	3561949	21680	13881001



## 4 Power BI Reports

Power BI is a business intelligence and analytics tool developed by Microsoft that allows users to analyze, visualize, and share data through interactive reports and dashboards. It connects to a wide range of data sources and helps transform raw data into meaningful insights that support better decision-making.

Power BI mainly includes Power BI Desktop, Power BI Service and Power BI Mobile. Power BI Desktop is a free application used to build reports and dashboards on a local machine. Power BI Service is the cloud-based platform ([app.powerbi.com](https://app.powerbi.com)) where reports created in Power BI Desktop can be published, viewed, and shared online, Power BI Mobile is used for interacting with reports on smartphones and tablets.

Before building reports in Power BI Desktop, users must first connect to the required data source and then prepare the data model, including tables, relationships, and any necessary calculations. Once the model is ready, visuals such as charts, tables, slicers, and cards can be created using the drag-and-drop interface.

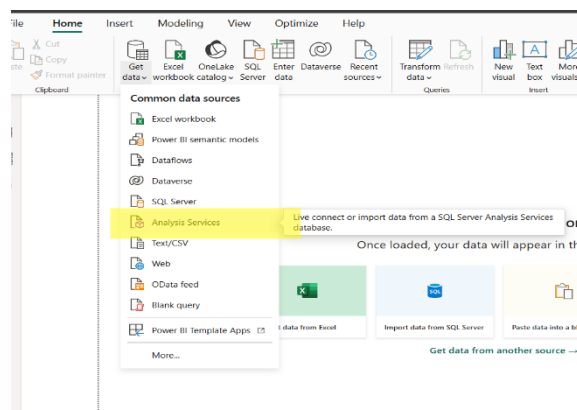
Reports developed in Power BI Desktop can be published to the Power BI Service. In the service, users can view reports, share them with others, refresh data on a schedule, manage dashboards, and collaborate in shared workspaces.

### 4.1 Connecting to the Data Source

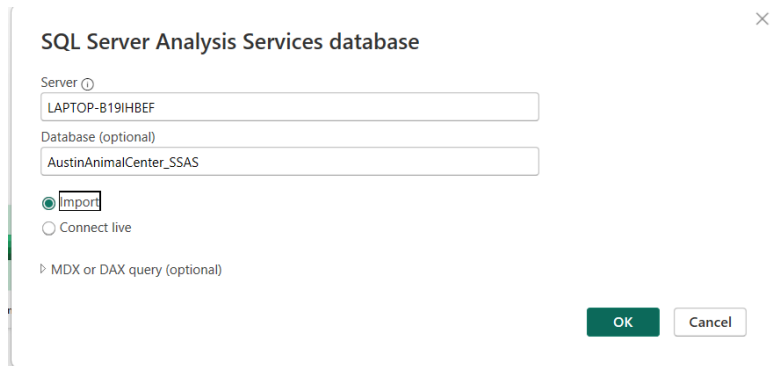
In Power BI Desktop, a data source is created by selecting “Get Data” from the Home tab. To connect with a OLAP cube from SQL Server Analysis Services option is selected, and then the server and the appropriate cube is chosen (Cube\_AustinAnimalCenter). The dimensions and measures from the cube can then be used directly for visualizations.

#### 4.1.1 Getting Data from Analysis Services

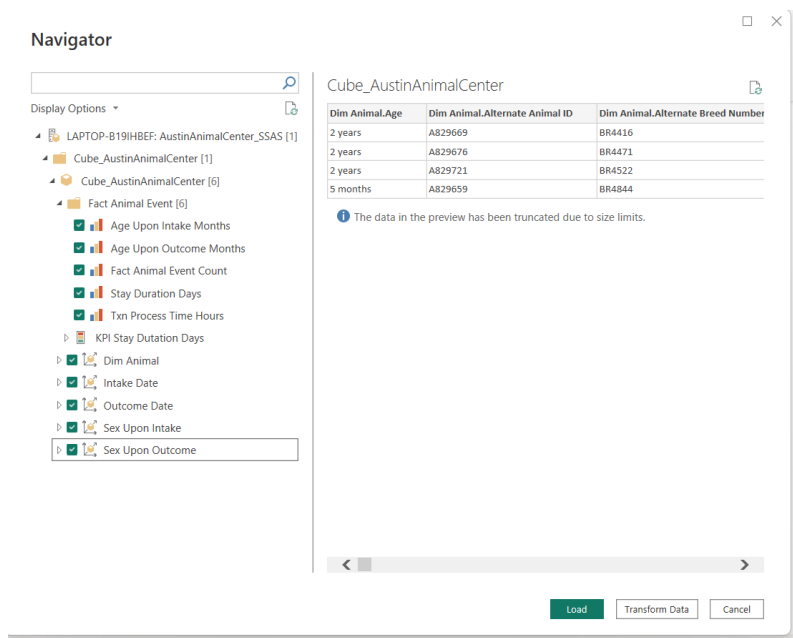
Select Analysis Services from the “Get Data” option from Home tab



The server name was entered in the connection dialog, and Import was selected as the data connectivity mode, as the report was intended to be published to the Power BI Service. From the available options, the appropriate database AustinAnimalCenter\_SSAS was entered to access the cube.



Once connected, the necessary dimensions and measures were chosen from the Cube\_AustinAnimalCenter and imported into the Power BI model to be used in report creation.



## 4.2 Report Demonstrations

The following reports have been created and deployed to the Power BI Service:

- [Report 1: Report with a matrix.](#)
- [Report 2: Report with cascading slicers and multiple visuals.](#)
- [Report 3: Drill-down report.](#)
- [Report 4: Drill-through report.](#)

(Click on the above titles to navigate to the relevant reports in this Document.)



## 4.2.1 Report 1: Report with a matrix.

The matrix report displays the total outcome and intake of animals according to the intake quarter, and year. A matrix visual is used to organize the data in a tabular format with row and column groupings, allowing for detailed analysis of data across different time periods. A card visual is included to show the average stay duration of animals. Additionally, a metric table calculates the sum of Animal Event % per year, using a DAX query for the calculation.

**Total Outcome And Intake According to Intake Month, Quarter and Year**

Intake Date.Month / Name Intake Date.Year	June			March		May		November		October		September		Total	
	n of mal nt %	Sum of Animal Event	Sum of Animal Event %	Sum of Animal Event	Sum of Animal Event %	Sum of Animal Event	Sum of Animal Event %	Sum of Animal Event	Sum of Animal Event %	Sum of Animal Event	Sum of Animal Event %	Sum of Animal Event	Sum of Animal Event %	Sum of Animal Event	Sum of Animal Event %
2013								1599	27.21%	1831	35.33%			4935	30.38%
2014	45.40%	2128	42.91%	1753	40.80%	2292	44.70%	1762	28.71%	1913	33.68%	2100	40.00%	22803	36.90%
First				1753	40.80%									4814	30.99%
Fourth								1762	28.71%	1913	33.68%			5371	31.97%
Second		2128	42.91%			2292	44.70%							6250	41.18%
Third	45.40%											2100	40.00%	6368	41.98%
2015	32.67%	2701	45.61%	1713	31.97%	2636	40.06%	1899	22.99%	2181	33.23%	1998	35.27%	23981	33.32%
2016	26.45%	2044	31.70%	1958	30.62%	2569	38.42%	1874	27.05%	1852	27.81%	2086	29.81%	23565	29.50%
2017	30.14%	2349	36.81%	1876	33.71%	2455	37.30%	1681	22.79%	1939	29.96%	2229	30.66%	23741	30.80%
2018	29.95%	2239	30.33%	1957	27.91%	2258	35.05%	1752	17.43%	2080	26.52%	2242	28.19%	23409	26.43%
Total	33.29%	15014	36.95%	12401	32.07%	15428	37.68%	13213	24.64%	14980	30.37%	13984	32.47%	160427	30.77%

Note :Sum of Animal Event % calculate for per year

**113.15**

Average of Stay Duration Days

Sum of Animal Event % per year, using a DAX query for the calculation.

```

1 Sum of Fact Animal Event Count % difference from Count of Intake Date.Year =
2 VAR __BASELINE_VALUE = COUNTA('Cube_AustinAnimalCenter'[Intake Date.Year])
3 VAR __VALUE_TO_COMPARE = SUM('Cube_AustinAnimalCenter'[Fact Animal Event Count])
4 RETURN
5 IF(
6     NOT ISBLANK(__VALUE_TO_COMPARE),
7     DIVIDE(__VALUE_TO_COMPARE - __BASELINE_VALUE, __BASELINE_VALUE)
8 )

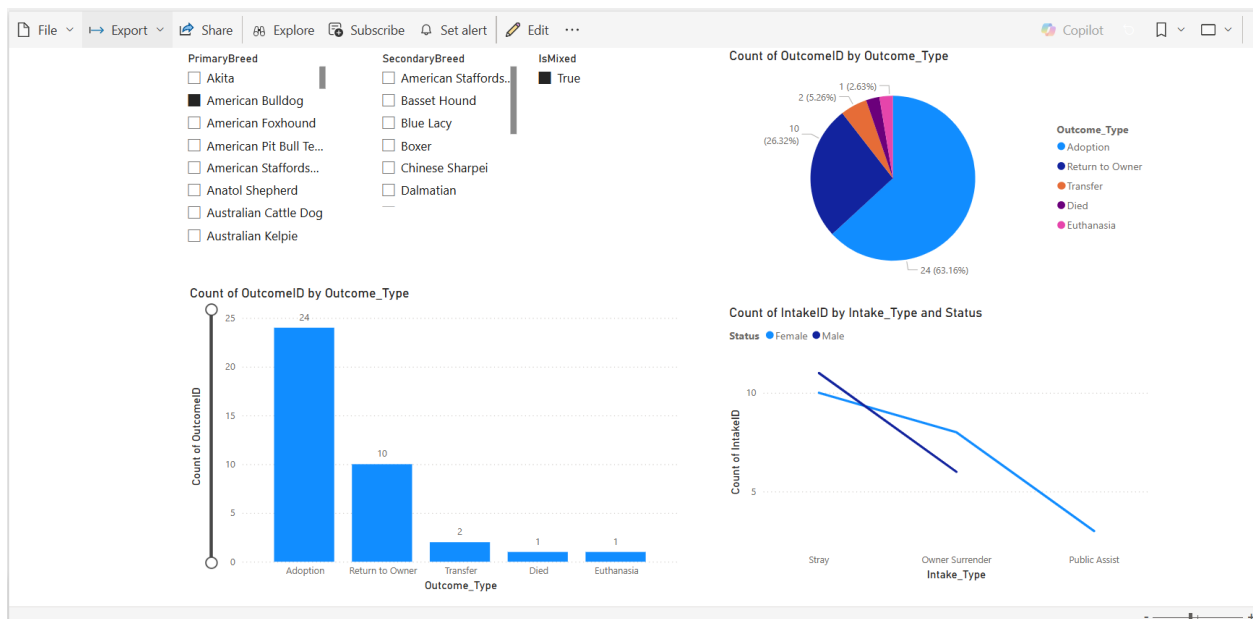
```

## 4.2.2 Report 2: Report with cascading slicers and multiple visuals

This report uses cascading slicers based on PrimaryBreed, SecondaryBreed, and IsMixed, where selecting a PrimaryBreed dynamically filters the options in SecondaryBreed and Is Mixed. The visuals included in the report are,

- A Pie chart showing the Count of Outcome by Outcome\_Type
- A clustered column chart displaying the Count of Outcome by Outcome\_Type
- A line chart showing the Count of Intake by Intake\_Type and Gender (Male, Female)

These visuals work together to provide insights into outcome categories and intake patterns, with slicers enabling interactive and filtered exploration of the data.



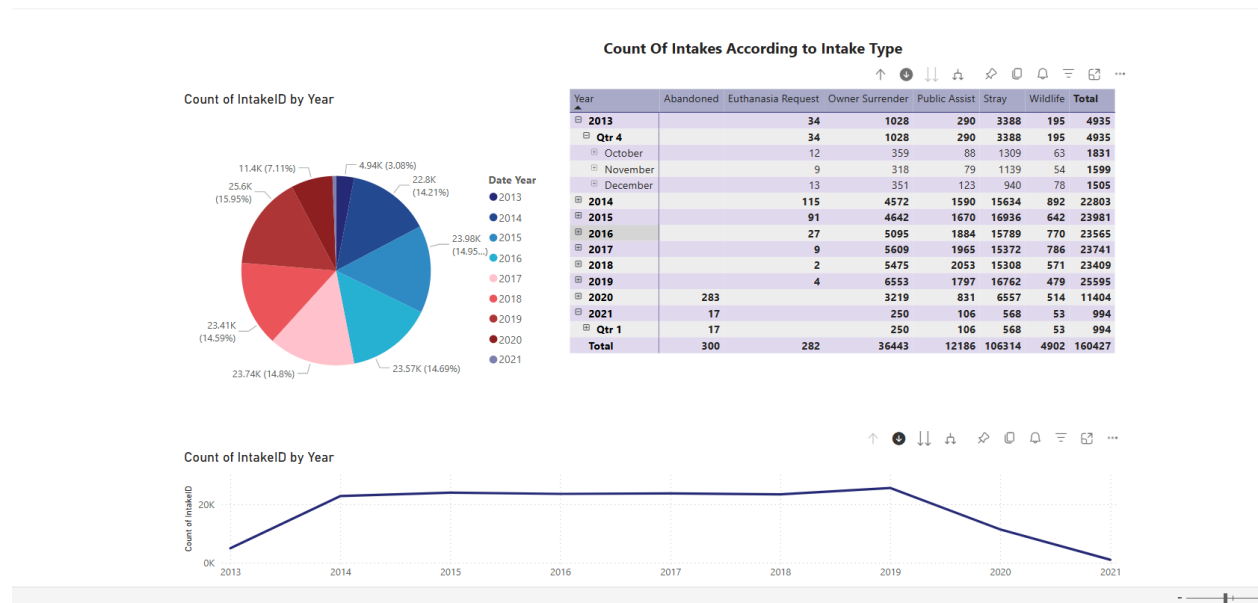
### 4.2.3 Report 3: Drill-down report

This report enables hierarchical exploration of intake data over time. Drill-down functionality is implemented from Year > Quarter > Month > Day of Month, allowing users to analyze trends at different time levels.

Supporting visuals include:

- A matrix visual showing the Count of Intakes according to Intake Type
- A pie chart displaying Count of Intake by Year
- A line chart showing Count of Intake by Year

These visuals work together to provide both detailed and summarized views of intake patterns, with interactive drill-down improving the depth of analysis.

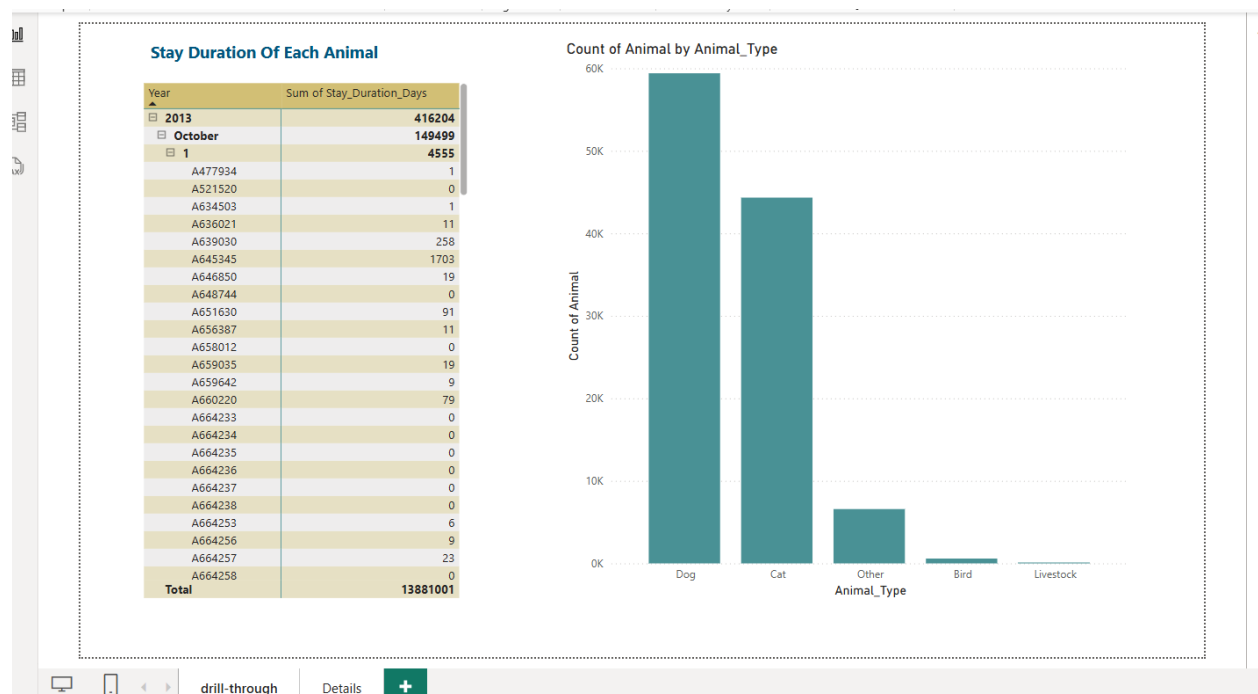


## 4.2.4 Report 4: Drill-through Report.

A report with drill-through functionality was created to allow navigation from summary data to individual records. The main page includes a matrix visual displaying the Sum of Stay\_Duration\_Days organized by Year > Month > Day with Animal ID, and a clustered column chart showing the Count of Animals by Animal\_Type.

Drill-through was enabled using fields like Alternative Animal ID, Stay Duration, and Animal Type. When a user drills through on a data point, they are taken to a detailed page that displays a table with columns such as Animal SK, Breed, Animal Type, Color, Gender, and the Sum of Stay Duration for each animal. A Back button is added for easy navigation back to the main summary report.

### Main Drill-through page



## Details Page

Animal_SK	Animal_Type	Breed	ColorName	Status	Sum of Stay_Duration_Days
26879	Other	Affenpinscher Mix	Brown/White	Female	1114
37849	Other	Airedale Terrier Mix	Tricolor	Female	4
46345	Other	Akita Mix	Black/Brown	Female	31
90178	Other	Alaskan Husky	Brown/White	Female	0
110420	Other	Alaskan Husky	Brown/White	Male	4
97529	Other	Alaskan Husky	Tan	Female	8
54115	Other	Alaskan Husky Mix	Black/White	Male	6
72612	Other	Alaskan Husky Mix	Brown/White	Male	4
103170	Other	Alaskan Husky Mix	Brown/White	Male	1
108287	Other	Alaskan Husky Mix	Brown/White	Female	14
77875	Other	Alaskan Husky Mix	Chocolate/Cream	Female	55
87576	Other	Alaskan Husky Mix	Tricolor	Female	5
88136	Other	Alaskan Husky Mix	White	Female	105
89564	Other	Alaskan Husky Mix	White	Male	53
31915	Other	Alaskan Husky/Border Collie	Black/White	Unknown	0
73631	Other	Alaskan Husky/Border Collie	Black/White	Unknown	0
73563	Other	Alaskan Malamute	Black/Cream	Male	3
107779	Other	Alaskan Malamute	Black/White	Female	89
8370	Other	Alaskan Malamute Mix	Black/White	Female	7
25315	Other	American Bulldog Mix	Black/White	Male	8
14755	Other	American Bulldog Mix	Blue Cream/White	Male	79
64854	Other	American Bulldog Mix	Brown Brindle/White	Male	3
6024	Other	American Bulldog Mix	Brown/White	Female	23
19195	Other	American Bulldog Mix	Brown/White	Female	5
72126	Other	American Bulldog Mix	Brown/White	Female	11
105811	Other	American Bulldog Mix	Chocolate/White	Male	23
74712	Other	American Bulldog Mix	Fawn/Brown	Male	1
14862	Other	American Bulldog Mix	Tricolor	Male	19
47948	Other	American Bulldog Mix	White	Male	7
8628	Other	American Bulldog Mix	White/Black	Male	26
42317	Other	American Bulldog Mix	White/Black	Female	6
<b>Total</b>					<b>618365</b>

## Drill-through Columns

**Drill through**

**Cross-report** ☐ Off

**Keep all filters** ☐ On

AlternateAnimal\_ID [v] x [lock]

is (All)

Animal\_Type [v] x [lock]

is Other

Stay\_Duration\_Day: [v] x [lock]

is (All)

## Details page after Drill-through the Animal Id

Animal_SK	Animal_Type	Breed	ColorName	Status	Sum of Stay_Duration_Days
3593	Cat	Bullmastiff/Boxer	Brown/White	Female	258
<b>Total</b>					<b>258</b>

## Details page after Drill-through the Animal Type

Animal_SK	Animal_Type	Breed	ColorName	Status	Sum of Stay_Duration_Days
91859	Bird	Akita Mix	Brown/White	Male	9
79109	Bird	Alaskan Husky Mix	Chocolate/Cream	Male	14
82065	Bird	American Bulldog Mix	Blue/White	Male	6
67378	Bird	American Bulldog Mix	White/Brown Brindle	Unknown	13
81046	Bird	American Pit Bull Terrier Mix	Brown	Female	74
43142	Bird	American Pit Bull Terrier Mix	Tan/White	Male	19
82058	Bird	American Shorthair Mix	Blue	Female	6
100513	Bird	American Staffordshire Terrier/American Bulldog	Red	Male	7
74662	Bird	Anatol Shepherd Mix	Black/White	Female	4
14071	Bird	Anatol Shepherd Mix	Buff/Black	Unknown	0
76921	Bird	Anatol Shepherd Mix	Tan	Female	2
69915	Bird	Anatol Shepherd Mix	Tan/Black	Female	13
91668	Bird	Anatol Shepherd Mix	White	Female	3
96628	Bird	Australian Cattle Dog	Gray/Black	Male	4
101962	Bird	Australian Cattle Dog	Red Tick	Unknown	11
101372	Bird	Australian Cattle Dog	Red/White	Unknown	5
43473	Bird	Australian Cattle Dog Mix	Black/White	Female	6
28515	Bird	Australian Cattle Dog Mix	Blue Merle/Brown Brindle	Female	5
109659	Bird	Australian Cattle Dog Mix	Brown/White	Male	43
87411	Bird	Australian Cattle Dog Mix	Red/White	Female	6
4934	Bird	Australian Cattle Dog Mix	Tan/White	Female	0
49690	Bird	Australian Cattle Dog Mix	White	Male	35
39910	Bird	Australian Kelpie	Black/Brown	Female	5
103286	Bird	Australian Kelpie	Tricolor	Unknown	12
41902	Bird	Australian Kelpie Mix	Black/Tan	Male	5
73965	Bird	Australian Kelpie Mix	Tricolor	Unknown	0
57162	Bird	Australian Shepherd	Black/White	Male	6
102636	Bird	Australian Shepherd	Blue Merle/White	Female	6
85701	Bird	Australian Shepherd	White/Brown Brindle	Male	6
90770	Bird	Australian Shepherd Mix	Blue Merle/White	Male	41
44447	Bird	Australian Shepherd Mix	Brown/White	Male	7
<b>Total</b>					<b>54070</b>

## 4.3 Publishing Reports to Power BI Service

Reports developed in Power BI Desktop were published to Power BI Service using the Publish option from the Home tab. Once uploaded, the reports became accessible in the assigned workspace. Each report was opened in Power BI Service to ensure visuals loaded correctly and interactions such as slicers, drill-downs, and drill-throughs functioned as intended.

The reports can be accessed from the following Power BI Service link

1. [Report 1: Report with a matrix visual.](#)
2. [Report 2: Report with cascading slicers and multiple visuals.](#)
3. [Report 3: Drill-down report.](#)
4. [Report 4: Drill-through report](#)