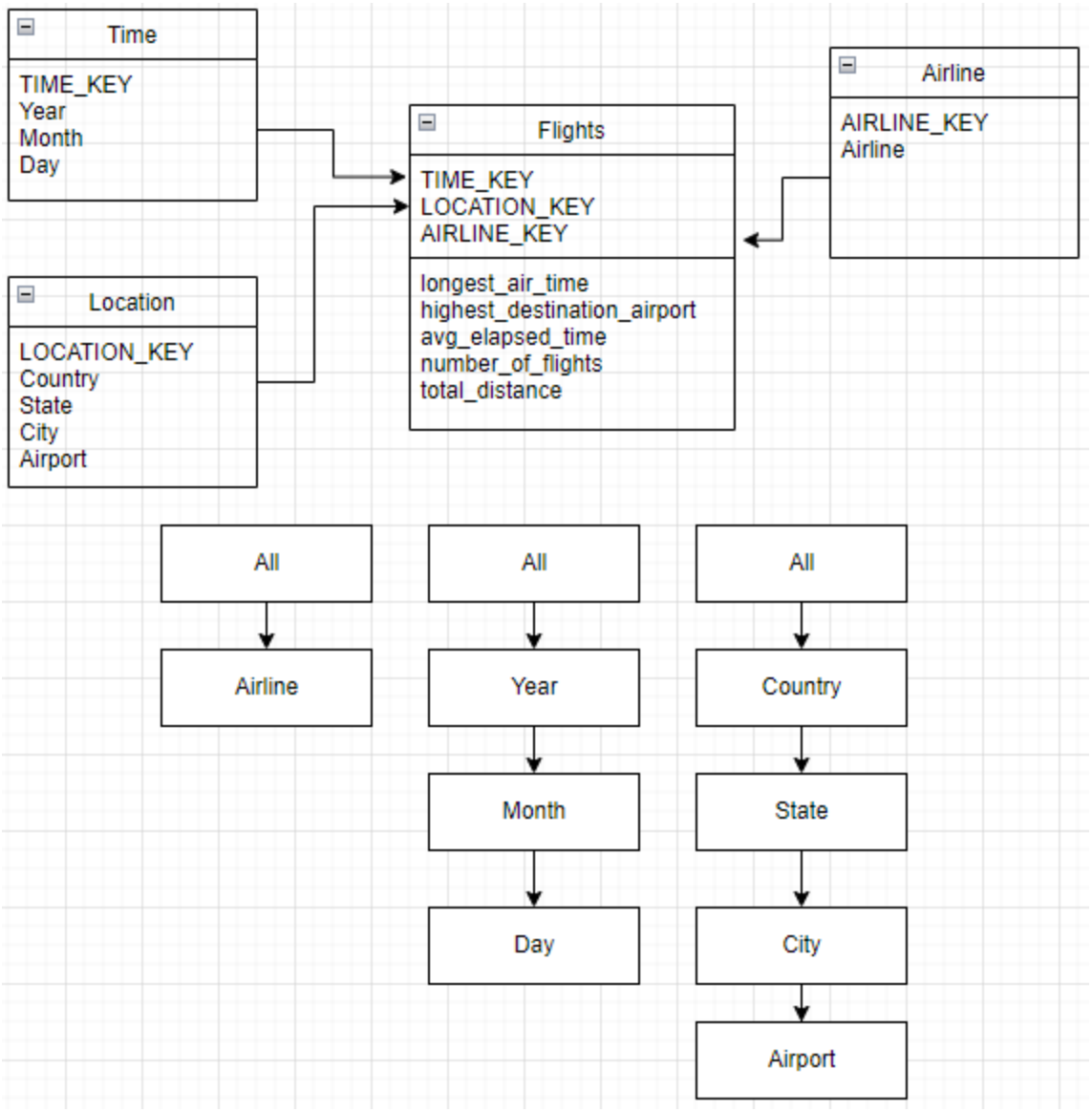
Assignment 1

1. Modeling



2. OLAP Operations
    1. Simple Max operation, no OLAP

2. Drill-Down where we in the Airline dimension go from All to Airline
3. Drill-Down for Time dimension to Month. Slice on Time Dimension for Month is “2” (februrary)

4. Multi-Dimensional Expressions (MDX)
    1. **Report 1** The longest duration of any flight in the air.

```
SELECT [Measures].[longest_air_time] ON COLUMNS FROM [ov1]
```

	All
longest_air_time	690

    2. **Report 2** Average elapsed time for each airline company.

```
SELECT [Measures].[avg_elapsed_time] ON COLUMNS,
[Airline].[AIRLINE_KEY].[Airline] ON ROWS FROM [ov1]
```

	avg_elapsed_time
UA	186.5798889
AA	165.0380066
US	146.1879651
F9	151.8720736
B6	162.6001962
OO	97.2145156
AS	177.6086671
NK	155.4456294
WN	118.1160485
DL	140.4733887
EV	93.91969161
HA	101.2408287
MQ	87.15993663

	avg_elapsed_time
VX	203.4099115

3. **Report 3** The total number of flights flown in February.

```
SELECT [Measures].[number_of_flights] ON COLUMNS FROM [ov1]
WHERE [Time].[Time].[Month].&[2015-02]
```

	2015 Feb
number_of_flights	429191

4. **Report 4** Each Month and the airport with the highest amount of arrival flights.

```
SELECT [Measures].[highest_destination_airport] ON COLUMNS,
([Time].[Time].[Month], TopCount(Order([Location].[LOCATION_KEY].[Airport].member
s, [Measures].[highest_destination_airport], BDESC), 1)) ON ROWS FROM [ov1]
```

		highest_destination_airport
2015 Jan	ATL	29512
2015 Feb	ATL	27366
2015 Mar	ATL	32754
2015 Apr	ATL	3236

5. **Report 5** Descending list of all months by the amount of total distance flown each month.

```
SELECT [Measures].[total_distance] ON COLUMNS,
NON EMPTY Order([Time].[Time].[Month], [Measures].[total_distance], BDESC)
ON ROWS FROM [ov1]
```

	total_distance
2015 Mar	411546494
2015 Jan	377507097
2015 Feb	343689908
2015 Apr	41744774