DAX Functions Documentation - Daegu Real Estate Analysis

Dashboard 1: Property Investment Analysis

1. KPI Metrics

DAX - Code

```
// Average Property Price
Avg_Property_Price =
CALCULATE(
    AVERAGE('Daegu_Real_Estate_data'[SalePrice])
)

// Price per Square Foot
Price_Per_SqFt =
DIVIDE(
    SUM('Daegu_Real_Estate_data'[SalePrice]),
    SUM('Daegu_Real_Estate_data'[Size(sqf)]),
    0
)

// YoY Price Growth
YoY_Price_Growth =
VAR CurrentYear = MAX('Daegu_Real_Estate_data'[YrSold])
VAR CurrentAvg = CALCULATE(
    AVERAGE('Daegu_Real_Estate_data'[SalePrice]),
    'Daegu_Real_Estate_data'[YrSold] = CurrentYear
)
VAR PrevAvg = CALCULATE(
    AVERAGE('Daegu_Real_Estate_data'[SalePrice]),
```

```
    'Daegu_Real_Estate_data'[YrSold] = CurrentYear - 1
)
RETURN
IF(
    NOT ISBLANK(PrevAvg),
    DIVIDE(CurrentAvg - PrevAvg, PrevAvg, 0)
)
```

2. Price Analysis Measures

DAX - Code

```
// Price Range Categories
Price_Range =
VAR PriceInThousands = 'Daegu_Real_Estate_data'[SalePrice]/1000
RETURN
SWITCH(
    TRUE(),
    PriceInThousands <= 100, "< ₩100K",
    PriceInThousands <= 200, "₩100K - ₩200K",
    PriceInThousands <= 300, "₩200K - ₩300K",
    PriceInThousands <= 400, "₩300K - ₩400K",
    PriceInThousands <= 500, "₩400K - ₩500K",
    "Above ₩500K"
)

// Size Categories
Size_Category =
SWITCH(
```

```
    TRUE(),
    'Daegu_Real_Estate_data'[Size(sqf)] <= 500, "Small (≤500 sqf)",
    'Daegu_Real_Estate_data'[Size(sqf)] <= 1000, "Medium (501-1000 sqf)",
    'Daegu_Real_Estate_data'[Size(sqf)] <= 1500, "Large (1001-1500 sqf)",
    "Extra Large (>1500 sqf)"
)
```

3. Station Analysis

Measures DAX - Code

```
// Average Price by Station
Avg_Price_By_Station =
CALCULATE(
    AVERAGE('Daegu_Real_Estate_data'[SalePrice]),
    VALUES('Daegu_Real_Estate_data'[SubwayStation])
)

// Property Count by Station
Count_By_Station =
CALCULATE(
    COUNTROWS('Daegu_Real_Estate_data'),
    VALUES('Daegu_Real_Estate_data'[SubwayStation])
)

// Station Facilities Score
Avg_Facilities_Score =
CALCULATE(
    AVERAGE('Daegu_Real_Estate_data'[N_FacilitiesNearBy(Total)])
```

)

Dashboard 2: Location & Accessibility Analysis

1. Transit Accessibility Measures

DAX - Code

```
// Properties by Subway Time
Properties_By_SubwayTime = CALCULATE(

    COUNTROWS('Daegu_Real_Estate_data'),
    VALUES('Daegu_Real_Estate_data'[TimeToSubway])
)

// Properties by Bus Time
Properties_By_BusTime =
CALCULATE(
    COUNTROWS('Daegu_Real_Estate_data'),
    VALUES('Daegu_Real_Estate_data'[TimeToBusStop])
)

// Average Transit Time Score
Avg_Transit_Time =
CALCULATE(
    COUNT('Daegu_Real_Estate_data'[TimeToSubway]),
    'Daegu_Real_Estate_data'[TimeToSubway] = "0-5min"
  ) / COUNT('Daegu_Real_Estate_data'[TimeToSubway])
```

2. School Analysis Measures

DAX - Code

```
// Elementary Schools Average
Elementary_Schools =
CALCULATE(
    AVERAGE('Daegu_Real_Estate_data'[N_SchoolNearBy(Elementary)])
)

// Middle Schools Average
Middle_Schools =
CALCULATE(
    AVERAGE('Daegu_Real_Estate_data'[N_SchoolNearBy(Middle)])
)

// High Schools Average
High_Schools =
CALCULATE(
    AVERAGE('Daegu_Real_Estate_data'[N_SchoolNearBy(High)])
)
```

3. Facilities Analysis Measures

DAX - Code

```
// Average Hospital Distance
Avg_Hospital_Distance =
CALCULATE(
    AVERAGE('Daegu_Real_Estate_data'[N_FacilitiesNearBy(Hospital)])
)
```

```
// Average Mall Distance
Avg_Mall_Distance =
CALCULATE(
    AVERAGE('Daegu_Real_Estate_data'[N_FacilitiesNearBy(Mall)])
)

// Average Public Office Distance
Avg_PublicOffice_Distance =
CALCULATE(
    AVERAGE('Daegu_Real_Estate_data'[N_FacilitiesNearBy(PublicOffice)])
)

// Total Facilities Score
Total_Facilities_Score =
CALCULATE(
    AVERAGE('Daegu_Real_Estate_data'[N_FacilitiesNearBy(Total)])
)
```

4. Parking Analysis Measures

DAX - Code

```
// Total Parking Spots
Total_Parking_Spots =
CALCULATE(
    SUM('Daegu_Real_Estate_data'[N_Parkinglot(Ground)]) +
    SUM('Daegu_Real_Estate_data'[N_Parkinglot(Basement)])
)
```

```
// Ground Parking Ratio
Ground_Parking_Ratio =
DIVIDE(
    SUM('Daegu_Real_Estate_data'[N_Parkinglot(Ground)]),
    SUM('Daegu_Real_Estate_data'[N_Parkinglot(Ground)]) +
    SUM('Daegu_Real_Estate_data'[N_Parkinglot(Basement)]),
    0
)
```

Common DAX Functions Used:

1. **Aggregation Functions:**

- AVERAGE
- SUM
- COUNT
- COUNTROWS

2. **Filter Functions:**

- CALCULATE
- VALUES
- FILTER

3. **Logical Functions:**

- IF
- SWITCH
- NOT
- ISBLANK

4. **Mathematical Functions:**

- DIVIDE

- MAX
- MIN

5. **Time Intelligence:**

- PREVIOUSMONTH
- DATESINPERIOD
- DATESYTD