

## Designer 5.1

### ▶ Creating Year-, Quarter-, and Month-to-Date Objects Using Database Functions

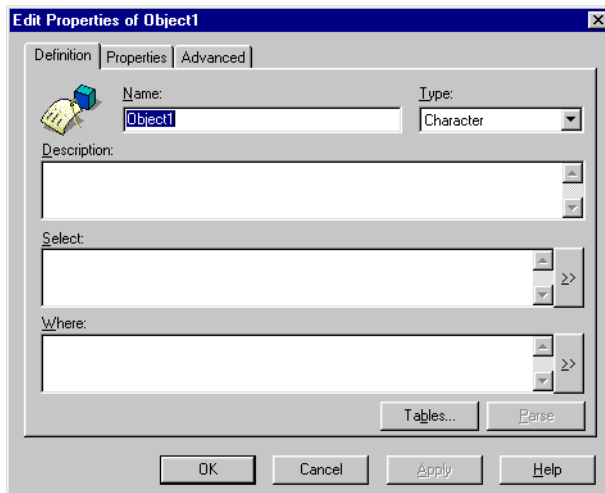
You can use the date functions of the DBMS on which your universe is based to create year-, quarter-, and month-to-date objects, thus simplifying these calculations for your end users. The following example uses Transact-SQL, the SQL dialect in Sybase and Microsoft SQL Server. Other DBMSs have equivalent date functions.

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### ▶ Creating a Sales Revenue Year-to-Date object in the Island Resorts Marketing Universe

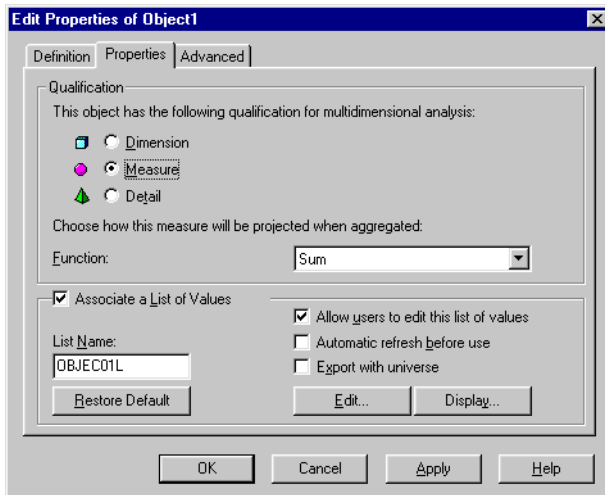
To create a Sales Revenue Year to Date object, do the following:

1. Right-click the Measures folder and choose Create Object from the pop-up menu. The Edit Properties of Object dialog box appears.



2. Type 'Sales Revenue YTD' in the Name and Description boxes.

3. Select the Properties tab and select Measure as the object type.



4. Select the Definition tab.

5. Type

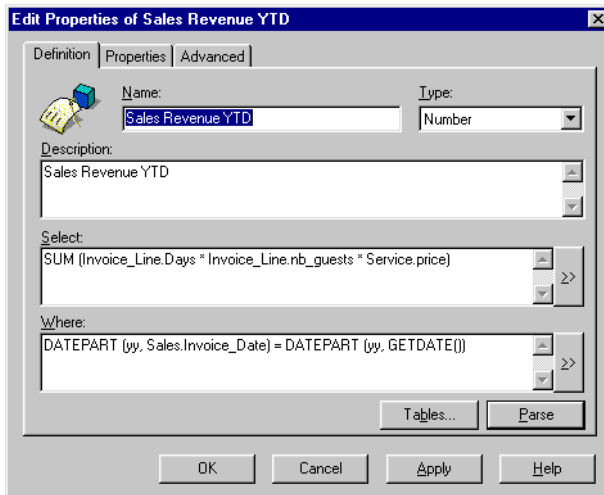
`SUM ( Invoice_Line.Days * Invoice_Line.nb_guests * Service.price)`  
in the Select Box.

(In order to calculate revenue for an invoice you need to take account of both the number of days paid for and the number of guests who bought the service. You then multiply these numbers by the service price to give the total revenue represented by the invoice. For example, if two guests stay for two days in a hotel suite, you have sold four 'units' of the service 'Hotel Suite'. Summing all these revenues gives the total revenue.)

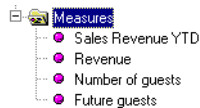
6. Type

`DATEPART (Year, Sales.invoice_date) = DATEPART (Year, GETDATE())`

7. in the Where box.



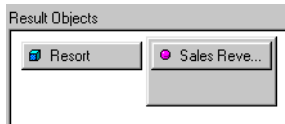
8. Click OK.  
The object appears beneath the Measures folder.



The key to this object lies in the WHERE clause that you added to its definition. This clause exploits the Transact-SQL DATEPART and GETDATE functions. DATEPART returns any part of a date (in this case the year) and GETDATE returns the current date. Thus, by comparing the year of the invoice to the current year you can sum all invoice amounts for the current year.

### ► Using the Year-to-Date Object in a Report

It is now simple to create a report showing Sales Revenue YTD. To create a report showing revenue YTD by resort, simply drag the Resort and Sales Revenue YTD objects to the Result Objects pane.



Running the report produces the following table:

Resort	Sales Revenue YTD
Bahamas Beach	307,400.00
French Riviera	280,310.00
Hawaiian Club	519,530.00

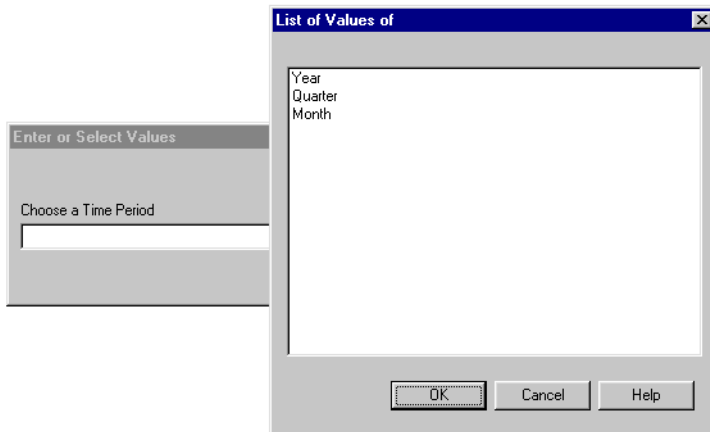
**Note:** The Island Resorts Marketing universe does not contain invoices for the current year. In order to generate this report the system year was set to 1994.

### ► Creating a Generic Revenue-to-Date Object

You can make revenue-to-date calculation more generic by allowing the user to choose the time period when they run the report. To do this, follow the instructions above to create an object called 'Revenue to Date' and type the following in the Where box in the Edit Properties of Object dialog box:

```
DATEPART (@Prompt('Choose a Time Period','N',{'Year','Quarter','Month'},'mono','constrain'), Sales.Invoice_Date) = DATEPART (@Variable('Choose a Time Period'), GetDate())
AND Datepart (Year, Sales.Invoice_Date) = DATEPART (Year, GetDate())
```

Now, when the user runs a report that contains the Revenue to Date object, they are prompted to choose the time period:



Assuming that the user selects 'Quarter' from the list, the generated WHERE clause contains the lines:

```
DATEPART (Quarter, Sales.Invoice_Date) = DATEPART (Quarter, GetDate())  
AND Datepart (Year, Sales.Invoice_Date) = DATEPART (Year, GetDate())
```

This generic object exploits Designer's @Prompt and @Variable functions. The @Prompt function prompts the user for the time period, and the @Variable function retrieves the user's choice. In this way, the user's choice is fed into the DATEPART function twice.