





SalesSubcycleParameters

NumberOfCustomers (default: random between 1,000 AND 2,000 OR input (validation ≥ 1 AND $\leq ?$))

NumberOfInvoices (default: random between NumberOfCustomers AND NumberOfCustomers X 12) OR input (validation ≥ 1 AND $\leq ?$))

NumberOfInvoiceDetail (default: random between 1 and NumberOfProducts)

NumberOfProducts (default: random between 5 and 20 OR input (validation ≥ 1 AND ≤ 20))

Anomalies in fields

Input number/percentage

For Customer and Invoice PK:

Missing PK

Repeated PK

For other fields with potential anomalies:

Missing

(1) Invoice.InvoiceNumber

(6) InvoiceDetail.Quantity

Default: Complies with Benford's law

Benford's law (number of digits 1-3?)

(2) Invoice.InvoiceDate

Out of project range

Invalid working days

(3) Invoice.TotalBTax,

(4) Invoice.SalesTax,

(5) Invoice.Total,

(7) InvoiceDetail.SubtotalProduct

Negative number

Incorrect calculation

Anomalies in relationships

A

Default: Normal distribution of number of invoices (Total?)

Skewed

Invoice

InvoiceNumber (PK) (1) Anomalies: Missing, repeated, Benford, 5 digits (with zeros on the left)

InvoiceDate (2) Out of project range (from Project.DateRange), invalid working days (from Project.WorkingDays) Default: random (seasonality?)

PaymentType: random "cash" or "credit"

CreditTerms: if cash then blank, else DiscountPercentage/DaysDiscount, net DaysCredit. Example: "2/10, net 30". DiscountPercentage: random integer number between 2 and 5, DaysDiscount: 10 or 15, DaysCredit (30 or 60).

DueDate (calculated: InvoiceDate + DaysCredit)

ShippingMethod (random "Standard", "Expedited")

ShippingTerms (random "FOB destination", "FOB shipping")

TotalBTax (calculated: InvoiceDetail.Quantity X Product.ProdPrice) (3) Negative number, incorrect calculation

SalesTax (calculated: Invoice.Total X Project.SalesTaxRate) (4) Negative number, incorrect calculation

Total (Calculated: Invoice.TotalBTax + Invoice.SalesTax) (5) Negative number, incorrect calculation

CustomerId (FK)

InvoiceDetail
InvDetailNumber (PK) Quantity Default: Benform (6) Anomalies: Benford, SubtotalProduct (calculated: InvoiceDetail.Quantity X Product.ProductPrice) (7) Negative number, incorrect calculation InvoiceNumber (FK) ProductId (FK)





