

Bullet

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Use **Bullet** to return the cash flow schedule for a loan with a single payment of principal and interest at maturity. Only 2 rows are returned: one for the commencement of the loan and one for the maturity date of the loan.

The interest payment is calculated as:

$$I = P \times \left[\left(\left(1 + \frac{R \times F}{12} \right)^{12/F} \right)^T - 1 \right]$$

Where:

- I = **InterestPayment**
- P = *OutstandingAmount*
- R = *InterestRate*
- F = *Frequency*
- T = Time in years

Syntax

```
Public Shared Function Bullet(  
    ByVal OutstandingAmount As Double,  
    ByVal InterestBasis As String,  
    ByVal InterestRate As Double,  
    ByVal Frequency As Integer,  
    ByVal MaturityDate As Date,  
    ByVal ReferenceDate As Date,)
```

Arguments

OutstandingAmount

the principal amount of the loan. *OutstandingAmount* is an expression that returns a **Double**, or of a type that can be implicitly converted to **Double**.

InterestBasis

the day count convention used to calculate the interest amount. *InterestBasis* can be 30/360, Actual/360, Actual/365, or Actual/Actual. *InterestBasis* is an expression that returns a **String**, or of a type that can be implicitly converted to **String**.

InterestRate

the annual rate of interest for the loan. *InterestRate* is an expression that returns a **Double**, or of a type that can be implicitly converted to **Double**.

Frequency

the number of months in a regular interest payment. *Frequency* is an expression that returns a **Integer**, or of a type that can be implicitly converted to **Integer**.

MaturityDate

the maturity date of the loan. *MaturityDate* is an expression that returns a **Date**, or of a type that can be implicitly converted to **Date**.

ReferenceDate

the start date of the loan. *ReferenceDate* is an expression that returns a **Date**, or of a type that can be implicitly converted to **Date**.

Return Type

FinancialTypes.Bullet_table

```
Class Bullet_table
  Inherits Data.DataTable
  Property Item(RowIndex As Integer) As FinancialTypes.OutputRow_Bullet
```

```
Class OutputRow_Bullet
  Public Period As Integer
  Public PrincipalPayment As Double
  Public InterestPayment As Double
  Public CashFlow As Double
  Public OutstandingExposure As Double
  Public CapitalAmountInDebt As Double
  Public TotalExposure As Double
  Public NumberOfMonth As Integer
  Public PaymentDate As Date
  Public GraceInterest As Double
  Public InterestRate As Double
End Class
```

| Column | Description |
|----------------------------|--|
| Period | A reference number uniquely identifying a row in the resultant table. |
| PrincipalPayment | The amount of the principal payment. |
| InterestPayment | The amount of the interest payment. |
| CashFlow | The amount of the cash flow. |
| OutstandingExposure | When Period = 0, <i>OutstandingAmount</i> . When Period = 1, <i>OutstandingAmount</i> + InterestPayment . |
| CapitalAmountInDebt | When Period = 0, <i>OutstandingAmount</i> . When Period = 1, 0 |
| TotalExposure | See below. |
| NumberOfMonth | The number of months between the <i>ReferenceDate</i> and the PaymentDate . |
| PaymentDate | The end-of-month date when the payment occurs. |
| GraceInterest | 0 |
| InterestRate | The interest rate from the <i>ReferenceDate</i> to the <i>MaturityDate</i> . See formula above. |

Remarks

- The **PaymentDate** for all rows is generated as the last day of the month.
- For **Period** = 0, **PrincipalPayment**, **InterestPayment**, **CashFlow**, **NumberOfMonth**, **GraceInterest**, and **InterestRate** are set to 0.
- The time value (see formula above) is calculated using the day-count convention specified by *InterestBasis*:
 - For Actual/360 it is the number of days between the 2 **PaymentDate** values divided by 360.
 - For Actual/365 it is the number of days between the 2 **PaymentDate** values divided by 365.
 - For Actual/Actual it is the number of days between the 2 **PaymentDate** values divided by the number of days in the year of the later **PaymentDate**.
 - For 30/360 is the number of months between the 2 **PaymentDate** values divided by 12.
- If *InterestBasis* is NULL then *InterestBasis* = 30/360
- If *InterestBasis* is not 30/360, ACTUAL/360, ACTUAL/365, or ACTUAL/ACTUAL then an error message will be generated.
- If *Frequency* is NULL then *Frequency* = 1
- If *InterestRate* is NULL then *InterestRate* = 0
- If *ReferenceDate* is NULL then *ReferenceDate* equals the current system date.
- If *MaturityDate* is NULL then *MaturityDate* equals the current system date.
- **TotalExposure** is calculated as:

$$OutstandingAmount \times \left(1 + \frac{InterestRate}{Frequency} \right)^{NumberOfMonth}$$

See Also

- AMORTRATE - Constant daily effective rate for bond/loan amortization
- AMORTSCHED - Generate amortization schedule of a loan
- Balloon - Schedule with periodic interest payments and principal repaid at maturity
- ConstantCashFlow - Schedule with equal periodic cash flows
- ConstantCashFlowFR - Schedule for a loan with a fixed maturity date and annuity-style payments
- ConstantPaymentAmount - Schedule with no maturity with fixed periodic payment amount
- ConstantPrincipal - Schedule with fixed maturity date where the periodic principal payment is calculated on a straight-line basis
- ConstantPrincipalAmount - Schedule with no fixed maturity with a fixed periodic principal payment
- ConstantPrincipalRate - schedule with no fixed maturity where a fixed percentage principal payment
- CONSTPRINAMORT - Schedule of a loan with a fixed principal repayment

- NPD - Next payment date of a loan
- NPNO - Next payment number of a loan
- PAYMENTPERIODS - Number of months until first payment date, start of grace period, end of grace period, and total number payments for a loan
- PERIODRATE - Adjust the nominal rate of a loan
- PPD - Previous payment date of a loan
- PPNO - Previous payment number of a loan
- UNEQUALLOANPAYMENTS - Schedule for a loan where interest and principal payment frequencies differ