Package ‘capitalR’

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Title Capital Budgeting Analysis, Annuity Loan Calculations and Amortization Schedules
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Description Provides Capital Budgeting Analysis functionality and the essential Annuity loan functions. Also computes Loan Amortization Schedules including schedules with irregular payments.
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annuity  

Annuity Loan Calculation

Description

Calculates the payment, present value, future value, rate, or the number of periods

Usage

annuity(type = c("pv", "fv", "pmt", "nper", "rate"), pv, fv = 0, pmt, n, r, end = TRUE)

Arguments

type  Loan parameter to return. ("pv", "fv", "pmt", "nper", "rate")
pv  Present Value
fv  Future Value
pmt  Periodic Payment
n  Number of Periods
r  Rate
end  Logical, set to TRUE. If FALSE, payments are made at the beginning the period.

Value

Returns the selected Annuity Loan Parameter

Examples

annuity(type = "pmt", pv = -2000, fv = 0, n = 4 * 12, r = 0.06/12, end = TRUE)

ear

Effective Annual Rate

Description

Effective Annual Rate

Usage

ear(apr, n, p = 5)
fv

Arguments

<table>
<thead>
<tr>
<th>apr</th>
<th>Annual Rate (Nominal Interest Rate)</th>
</tr>
</thead>
<tbody>
<tr>
<td>n</td>
<td>Number of compounds in a year</td>
</tr>
<tr>
<td>p</td>
<td>Calculates the EAR to the (1/10^p) decimal place</td>
</tr>
</tbody>
</table>

Value

Effective Annual Rate

Examples

\(\text{ear}(\text{apr} = 0.05, n = 12)\)

fv

Future Value

Description

Calculates the Future Value given a Present Value

Usage

\(\text{fv}(pv, r, n)\)

Arguments

<table>
<thead>
<tr>
<th>pv</th>
<th>Present Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>r</td>
<td>Discount Rate</td>
</tr>
<tr>
<td>n</td>
<td>Number of Compounding Periods</td>
</tr>
</tbody>
</table>

Value

Returns the Future Value

Examples

\(\text{fv}(5000, 0.08/12, 5\times12)\)
Geometric Mean Return

Description
Geometric Mean Return

Usage
geometric(c)

Arguments
c Periodic returns in decimal form

Value
Returns the Geometric Mean Return

Examples
geometric(c(0.05, 0.02, -0.03, 0.09, -0.02))

Interest Payment

Description
Calculates the interest portion of the payment in period "x"

Usage
ipmt(pv, fv = 0, n, r, x, end = TRUE)

Arguments
pv Present Value
fv Future Value
n Number of Periods
r Rate
x Period in which to calculate the interest portion of the payment
end If FALSE, payments are made at the beginning of the period
irregular

**Value**

Returns the Interest Portion of the Payment in Period "x"

**Examples**

`ipmt(pv = 20000, fv = 0, n = 5 * 12, r = 0.05/12, x = 12, end = TRUE)`

---

**irregular**  
**Amortization Schedule With Irregular Payments**

**Description**

Creates an amortization schedule of a loan with irregular payments and withdrawals

**Usage**

`irregular(payments, dates, apr, pv, info = TRUE)`

**Arguments**

- `payments` Vector of payments, the first payment must be 0
- `dates` Vector of dates, the first date is the date of origination
- `apr` Annual rate
- `pv` Present Value
- `info` Logical, if set to 'TRUE' information about the dataframe arrangement will be printed

**Value**

Returns the irregular Amortization Schedule in a Dataframe

**Examples**

`irregular(payments = c(0, 200, -100), dates = c("2019-01-01", "2019-02-08", "2019-03-20"), apr = 0.05, pv = 2000, info = FALSE)`
**ppmt**

*Principal Payment*

**Description**

Calculates the principal of the payment in period "x"

**Usage**

\[
\text{ppmt}(pv, \ fv = 0, \ n, \ r, \ x, \ \text{end} = \text{TRUE})
\]

**Arguments**

- **pv**: Present Value
- **fv**: Future Value
- **n**: Number of Periods
- **r**: Rate
- **x**: Period in which to calculate the principal portion of the payment
- **end**: If FALSE, payments are made at the beginning of the period

**Value**

Returns the Principal Portion of the Payment in Period "x"

**Examples**

\[
\text{ppmt}(pv = 5000, \ fv = 0, \ n = 4 \times 12, \ r = 0.06/12, \ x = 12, \ \text{end} = \text{TRUE})
\]

---

**pv**

*Present Value*

**Description**

Calculates the present value of a given future value

**Usage**

\[
\text{pv}(fv, \ r, \ n)
\]

**Arguments**

- **fv**: Future Value
- **r**: Discount Rate
- **n**: Number of Compounding Periods
**Value**

Returns the Present Value

**Examples**

\[
pv(5000, 0.08/12, 5*12)
\]

---

**r.calc**  
*Return Calculation*

**Description**

Return Calculation

**Usage**

\[
r\.calc\(vector)\]

**Arguments**

vector  
Vector from which to calculate the periodic return

**Value**

Returns the Periodic Percent Return

**Examples**

\[
r\.calc\(c(100, 75, 50, 80, 125)\)
\]

---

**schedule**  
*Amortization Schedule*

**Description**

Creates an amortization schedule of a loan

**Usage**

\[
schedule\(r, n, pv, fv = 0, \text{end} = \text{TRUE}\)
\]
Arguments

- **r**: Rate
- **n**: Number of Periods
- **pv**: Present Value
- **fV**: Future Value, set = 0
- **end**: If FALSE, payments are made at the beginning of the period

Value

Returns the Amortization Schedule in a dataframe

Examples

```
schedule(r = 0.06/12, n = 10 * 12, pv = -5000, fV = 0, end = TRUE)
```
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