# Package 'capitalR'

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**Type** Package

**Title** Capital Budgeting Analysis, Annuity Loan Calculations and
Amortization Schedules

**Version** 1.3.0

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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.

**License** GPL-3

**Encoding** UTF-8

**LazyData** true

**RoxygenNote** 6.1.1

**Suggests** knitr, rmarkdown

**VignetteBuilder** knitr

**NeedsCompilation** no

**Repository** CRAN

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## R topics documented:

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annuity                          *Annuity Loan Calculation*

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**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)
```

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ear                          *Effective Annual Rate*

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**Description**

Effective Annual Rate

**Usage**

```
ear(apr, n, p = 5)
```

## Arguments

| | |
|---|---|
| apr | Annual Rate (Nominal Interest Rate) |
| n | Number of compounds in a year |
| p | Calculates the EAR to the (1/10^p) decimal place |

## Value

Effective Annual Rate

## Examples

```
ear(apr= 0.05, n = 12)
```

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| fv | *Future Value* |
|---|---|

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## Description

Calculates the Future Value given a Present Value

## Usage

```
fv(pv, r, n)
```

## Arguments

| | |
|---|---|
| pv | Present Value |
| r | Discount Rate |
| n | Number of Compounding Periods |

## Value

Returns the Future Value

## Examples

```
fv(5000, 0.08/12, 5*12)
```

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| geometric | *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))
```

---

| ipmt | *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 |

## 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*

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## 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)
```

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ppmt                            *Principal Payment*

---

### Description

Calculates the principal of the payment in period "x"

### Usage

```
ppmt(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 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

```
ppmt(pv  = 5000, fv = 0, n = 4 * 12, r = 0.06/12, x = 12, end = TRUE)
```

---

pv                              *Present Value*

---

### Description

Calculates the present value of a given future value

### Usage

```
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*

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## 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))
```

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schedule                  *Amortization Schedule*

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## Description

Creates an amortization schedule of a loan

## Usage

```
schedule(r, n, pv, fv = 0, end = 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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