Package 'inventorize'

January 17, 2019

Title Inventory Analytics and Cost Calculations

Version 1.0.0

Description Facilitate inventory analysis calculations. The package heavily relies on my studies, the package includes calculations of inventory metrics, profit calculations and ABC analysis calculations.
The first version has only normal and Poisson distributions but I am hoping that other distributions will follow in later versions.
The functions are referenced from :
1-Harris, Ford W. (1913). ``How many parts to make at once". Factory, The Magazine of Management. <isbn10: 135–136, 152>.
2- Nahmias, S. Production and Operations Analysis. McGraw-
Hill International Edition. <isbn: 0-07- 2231265-3. Chapter 4>.
3-Silver, E.A., Pyke, D.F., Peterson, R. Inventory Management and Production Planning and Scheduling. <isbn: 978-0471119470>.
4-Ballou, R.H. Business Logistics Management. <isbn: 978-0130661845>. Chapter 9.
5-MIT Micromasters Program.

Depends R (>= 3.4.0)

License GPL-2

RoxygenNote 6.1.1

Encoding UTF-8

LazyData true

Imports dplyr, ggplot2, stats, magrittr

Suggests knitr, rmarkdown

NeedsCompilation no

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Repository CRAN

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R topics documented:

ABC *ABC*

Description

Identyfing ABC category based on the pareto rule. Identyfing ABC category based on the pareto rule.A category is up to 80

Usage

```
ABC(data, na.rm = TRUE)
```

Arguments

`data,`	Data frame of tuo columns,first column is the item name, second column is the item value/flow/demand.
`na.rm,`	logical and by default is TRUE

Value

a dataframe that contains ABC categories with a bar plot of the count of items in each category.

Note

this is the first version of the inventorize package, all the fucntions are common knowlege for supply chain without any academic contribution from my side, the aim is to facilitate and ease much of the bookkeeping that is endured during stock analysis.

Author(s)

"haytham omar email: <h.omar5942@gmail.com>"

Examples

```
data<- data.frame(SKU= seq(1:1000),demand=runif(1000,1,1000))
ABC(data)
```

`CriticalRatio` *Criticalratio*

Description

Calculating critical ratio of a news vendor model under any distribution.this critical ratio maxmizes profit.

Usage

```
CriticalRatio(sellingprice, cost, salvage, penality, na.rm = TRUE)
```

Arguments

`sellingprice`	numeric,selling price of the SKU
`cost`	numeric,cost of the SKU
`salvage`	numeric,,salvage or discounted value if sold after season,if there is no salvage , zero is placed in the argument.
`penality`	numeric, peanlity cost of not satisfying demand if any, if not, zero is placed in the argument.
`na.rm`	A logical indicating whether missing values should be removed

Value

the critical ratio.

Note

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Author(s)

"haytham omar email: <h.omar5942@gmail.com>"

Examples

```
CriticalRatio(sellingprice=80,cost=60,salvage=45,penality=25,na.rm=TRUE)
```

CSOE *CSOE*

Description

CSOE<- function(quantity,demand,standerddeviation,leadtimeinweeks,cost,costSoe,holdingrate,na.rm=TRUE)

Usage

```
CSOE(quantity, demand, standerddeviation, leadtimeinweeks, cost, costSoe,
  holdingrate, na.rm = TRUE)
```

Arguments

quantity,	numeric,quantity replinished every cycle.
demand	numeric,annual Expected demand of the SKU .
standerddeviation	numeric, standard deviation of the SKU during season.
leadtimeinweeks	numeric,leadtime in weeks of order.
cost	numeric,cost of item.
costSoe	numeric, estimated cost per stockout event.
holdingrate	numeric, holding rate per item per year,percentage.
na.rm	removes na values if TRUE, TRUE by default

Details

Calculating K value that corresponds to the desired item fill rate.

Value

a dataframe that contains calculations of K the item fill rate metric.cycle service level and expected unit short.

Note

this is the first version of the inventorize package, all the fucntions are common knowlege for supply chain without any contribution from my side, the aim is to facilitate and ease much of the bookkeeping that is endured during stock analysis.

Author(s)

"haytham omar email: <h.omar5942@gmail.com>"

Examples

```
CSOE(quantity=1000,demand=4000,standerddeviation=200,leadtimeinweeks=3,
cost=500,costSoe=85,holdingrate=0.2,na.rm=TRUE)
```

---

dl.sigmadl *dl.sigmadl*

Description

claculating demand lead time with leadtime variability.

Usage

```
dl.sigmadl(expected_demand, sd_demand, expected_leadtime, sd_leadtime)
```

Arguments

expected_demand,	numeric,expected daily demand .
sd_demand	numeric,standard deviation of daily demand .
expected_leadtime	numeric, expected leadtime in days.
sd_leadtime	numeric,standard deviation of leadtime

Details

calculating leadtime with leadtime variablility as delivery time diffires to long distances and reliability of mode of transport. thus demand leadtime and standard deviation during lead time takes into consideration the lead time variability.

Value

a dataframe that contains calculations of the expected demand lead time and the expected standard deviation during leadtime.

Note

this is the first version of the inventorize package, all the fucntions are common knowlege for supply chain without any academic contribution from my side, the aim is to facilitate and ease much of the bookkeeping that is endured during stock analysis. the package relies heavily on the studies that I had in the MIT micromasters program for supply chain.

Author(s)

"haytham omar email: <h.omar5942@gmail.com>"

Examples

```
dl.sigmadl(expected_demand=100,sd_demand=22,expected_leadtime=12,sd_leadtime=3)
```

---

eoq *eoq*

Description

economic order quantity.

Usage

```
eoq(annualdemand, orderingcost, purchasecost, holdingrate, na.rm = TRUE)
```

Arguments

annualdemand	numeric,annual demand of the SKU.
orderingcost,	numeric ordeing cost of the SKU
purchasecost	,numeric, purchase cost per item
holdingrate	numeric holding rate per item per year.
na.rm	A logical indicating whether missing values should be removed

Value

the eoq.cycle stock time in years and cycle stock time in weeks.

Note

this is the first version of the inventorize package, all the functions are common knowlege for supply chain without any contribution from my side, the aim is to facilitate and ease much of the bookkeeping that is endured during analysis of stock.

Author(s)

"haytham omar email: <h.omar5942@gmail.com>"

Examples

```
eoq(annualdemand=5000,orderingcost=400,purchasecost=140,holdingrate=0.2,na.rm=TRUE)
```

eoqsenstivity *eoqsenstivity*

Description

the rate of increase of total relevant cost compared to the EOQ.

Usage

```
eoqsenstivity(quantity, quantityoptimal, na.rm = TRUE)
```

Arguments

quantity	numeric,quantity ordered every order cycle.
quantityoptimal	, numeric optimal quantity based on EOQ.
na.rm	A logical indicating whether missing values should be removed

Details

.

Value

the rate of increase of total relevant cost compared to the EOQ.

Note

this is the first version of the inventorize package, all the fucntions are basic knowlege for supply chain without any contribution from my side, the aim is to facilitate and ease much of the book-keeping that is endured during analysis of stock.

Author(s)

"haytham omar email: <h.omar5942@gmail.com>"

Examples

```
eoqsenstivity(quantity=5400,quantityoptimal=6000,na.rm=TRUE)
```

EPN_singleperiod *EPN_singleperiod*

Description

calculating expected profit for a newsvendor model.

Usage

```
EPN_singleperiod(quantity, mean, standerddeviation, p, c, g, b,
  na.rm = TRUE)
```

Arguments

quantity,	numeric,quantity replinished every cycle.
mean	numeric,Expected demand of the SKU during season.
standerddeviation	numeric, standard deviation of the SKU during season.
p	numeric,selling price of the SKU
c	numeric,cost of the SKU
g	numeric,,salvage or discounted value if sold after season,if there is no salvage , zero is placed in the argument.
b	numeric, peanlity cost of not satisfying demand if any, if not, zero is placed in the argument.
na.rm	A logical indicating whether missing values should be removed

Details

calculating expected profit for a newsvendor model. based on assumed normal distribution demand.

Value

a dataframe that contains calculations of the expected profit from a newsvendor model based on normal distribution.

Note

this is the first version of the inventorize package, all the fucntions are basic knowlege for supply chain without any contribution from my side, the aim is to facilitate and ease much of the book-keeping that is endured during stock analysis.

Author(s)

"haytham omar email: <h.omar5942@gmail.com>"

Examples

```
EPN_singleperiod(quantity=40149,mean= 32000,standerddeviation= 11000,p=24,c=10.9,g=7,b=0,na.rm=TRUE)
```

`EPP_singleperiod` *EPP_singleperiod*

Description

Expected profit from a newsvendor model based on a poisson distribution.

Usage

```
EPP_singleperiod(quantity, lambda, p, c, g, b, na.rm = TRUE)
```

Arguments

`quantity`	numeric,quantity to be ordered during season.
`lambda`	numeric, mean of the demand based on poisson distribution.
`p`	numeric,selling price of the SKU
`c`	numeric,cost of the SKU
`g`	numeric,,salvage or discounted value if sold after season,if there is no salvage , zero is placed in the argument.
`b`	numeric, peanlity cost of not satisfying demand if any, if not, zero is placed in the argument.
`na.rm`	A logical indicating whether missing values should be removed

Details

calculating expected profit for a newsvendor model. based on assumed poisson distribution demand.

Value

a dataframe that contains calculations of the expected profit from a newsvendor model based on poisson distribution.

Note

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Author(s)

"haytham omar email: <h.omar5942@gmail.com>"

Examples

```
EPP_singleperiod(quantity=40149,lambda= 32000,p=24,c=10.9,g=7,b=0,na.rm=TRUE)
```

`EUSnorm_singleperiod` *EUSnorm_singleperiod*

Description

Calculating expected unit short based on an assumed normal distribution.

Usage

```
EUSnorm_singleperiod(quantity, demand, standerddeviation, na.rm = TRUE)
```

Arguments

`quantity,`	numeric,quantity replinished every cycle.
`demand`	numeric,annual Expected demand of the SKU .
`standerddeviation`	numeric, standard deviation of the SKU during season.
`na.rm`	logical,TRUE

Details

Calculating expected unit short based on an assumed normal distribution for a newsvendor model.

Value

a dataframe that contains Expected unit short,k and g(k).

Note

this is the first version of the inventorize package, all the functions are common knowlege for supply chain without any contribution from my side, the aim is to facilitate and ease much of the bookkeeping that is endured during stock analysis.

Author(s)

"haytham omar email: <h.omar5942@gmail.com>"

Examples

```
EUSnorm_singleperiod(quantity=35000,demand=32000,standerddeviation=12000,na.rm=TRUE)
```

`inventorize` *inventorize: Inventory Analytics And Cost Calculations.*

Description

inventory analytics and cost calculations for SKUs.

Author(s)

Maintainer: Haytham Omar <h.omar5942@gmail.com>

`inventorymetricsCIS` *inventorymetricsCIS*

Description

calculating inventory metrics based on cost per item short.

Usage

```
inventorymetricsCIS(CIS, demand, standerddeviation, quantity, leadtime,
  cost, holdingrate, na.rm = TRUE)
```

Arguments

`CIS`	numeric,cost per item short determined by management
`demand`	numeric,annual demand of the SKU.
`standerddeviation`	numeric, annual standard deviation
`quantity,`	numeric,quantity replinished every cycle.
`leadtime,`	numeric,leadtime in weeks
`cost,`	numeric cost of the SKU
`holdingrate`	,numeric, holding rate per item/year
`na.rm`	A logical indicating whether missing values should be removed

Details

after cost per item short is explicitly calculated, item fill rate, cost per stock out event and cycle service level are implicitly calculated.

Value

a dataframe that contains demand leadtime,sigmadl(standard deviation in leadtime),saftey factor k determined based on cost per itemshort,unit normal loss function,expected units to be short,cycle service level, fill rate,implied cost per stockout event, saftey stock and suggested reorder point.

Note

this is the first version of the inventorize package, all the functions are common knowlege for supply chain without any contribution from my side, the aim is to facilitate and ease much of the bookkeeping that is endured during analysis of stock.

Author(s)

"haytham omar email: <h.omar5942@gmail.com>"

Examples

```
inventorymetricsCIS(CIS= 90, demand= 35000,standerddeviation=9000,
quantity= 9000,leadtime=3 ,cost=90,holdingrate=0.15,na.rm =TRUE)
```

---

inventorymetricsCSL *inventorymetricsCSL*

Description

calculating inventory metrics based on CYCLE SERVICE LEVEL.

Usage

```
inventorymetricsCSL(csl, demand, standerddeviation, quantity, leadtime,
  cost, holdingrate, na.rm = TRUE)
```

Arguments

csl	numeric,required times of demand that is fullfilled from cycle stock
demand	numeric,annual demand of the SKU.
standerddeviation	numeric, annual standard deviation
quantity,	numeric,quantity replinished every cycle.
leadtime,	numeric,leadtime in weeks
cost,	numeric,cost of the SKU.
holdingrate	numeric, holding rate per item per year.
na.rm	A logical indicating whether missing values should be removed

Details

cycle service level is the desired no of times demand is compleltey fulfiiled from cycle stock,after cycle service level is explicitly calculated, cost per item short, cost per stock out event and item fill rate are implicitly calculated.

Value

a dataframe that contains demand leadtime, sigmadl(standard deviation in leadtime), saftey factor k determined based on item fillrate provided, unit normal loss function, expected units to be short, cycle service level, fill rate,implied cost per stockout event, saftey stock and suggested reorder point.

Note

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Author(s)

"haytham omar email: <h.omar5942@gmail.com>"

Examples

```
inventorymetricsCSL(csl=0.95,demand=20000,standerddeviation=1200,
quantity=4500,leadtime=3,cost=100,holdingrate=0.15,na.rm=TRUE)
```

---

inventorymetricsIFR *inventorymetricsIFR*

Description

calculating inventory metrics based on item fillrate.

Usage

```
inventorymetricsIFR(fillrate, demand, standerddeviation, quantity,
  leadtime, cost, holdingrate, na.rm = TRUE)
```

Arguments

fillrate	numeric,required percentage of demand that is fullfilled from cycle stock
demand	numeric,annual demand of the SKU.
standerddeviation	numeric, annual standard deviation
quantity,	numeric,quantity replinished every cycle.
leadtime,	numeric,leadtime in weeks
cost,	numeric cost of the SKU
holdingrate	,numeric, holding rate per item/year
na.rm	A logical indicating whether missing values should be removed

Details

item fill rate is the percentage of demand that is fullfilled directly from the cycle stock,after item fill rate is explicitly calculated, cost per item short, cost per stock out event and cycle service level are implicitly calculated.

Value

a dataframe that contains demand leadtime, sigmadl(standard deviation in leadtime), saftey factor k determined based on item fillrate provided, unit normal loss function expected units to be short,cycle service level, fill rate,implied cost per stockout event, saftey stock and suggested reorder point.

Note

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Author(s)

"haytham omar email: <h.omar5942@gmail.com>"

Examples

```
inventorymetricsIFR(fillrate= 0.90, demand= 35000,standerddeviation=9000,
quantity= 5000,leadtime=3 ,cost=50,holdingrate=0.15,na.rm=TRUE)
```

MPN_singleperiod *MPN_singleperiod*

Description

calculating expected profit for a newsvendor model based on critical ratio.

Usage

```
MPN_singleperiod(mean, standerddeviation, p, c, g, b, na.rm = TRUE)
```

Arguments

mean	numeric,Expected demand of the SKU during season.
standerddeviation	numeric, standard deviation of the SKU during season.
p	numeric,selling price of the SKU
c	numeric,cost of the SKU
g	numeric,,salvage or discounted value if sold after season,if there is no salvage , zero is placed in the argument.

b	numeric, peanlity cost of not satisfying demand if any, if not, zero is placed in the argument.
na.rm	A logical indicating whether missing values should be removed

Details

calculating expected profit for a newsvendor model. based on assumed normal distribution demand.

Value

a dataframe that contains calculations of the maximum expected profit from a newsvendor model based on normal distribution.

Note

this is the first version of the inventorize package, all the functions are common knowlege for supply chain without any contribution from my side, the aim is to facilitate and ease much of the bookkeeping that is endured during stock analysis.

Author(s)

"haytham omar email: <h.omar5942@gmail.com>"

Examples

```
MPN_singleperiod(mean= 32000,standerddeviation= 11000,p=24,c=10.9,g=7,b=0,na.rm=TRUE)
```

MPP_singleperiod *MPP_singleperiod*

Description

Maximum profit from a newsvendor model based on a poisson distribution.

Usage

```
MPP_singleperiod(lambda, p, c, g, b, na.rm = TRUE)
```

Arguments

lambda	numeric, mean of the demand based on poisson distribution.
p	numeric,selling price of the SKU
c	numeric,cost of the SKU
g	numeric,,salvage or discounted value if sold after season,if there is no salvage , zero is placed in the argument.
b	numeric, peanlity cost of not satisfying demand if any, if not, zero is placed in the argument.
na.rm	A logical indicating whether missing values should be removed

Details

calculating expected profit for a newsvendor model. based on assumed poisson distribution demand based on the critical ration.

Value

a dataframe that contains calculations of the maximum expected profit from a newsvendor model based on poisson distribution.

Note

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Author(s)

"haytham omar email: <h.omar5942@gmail.com>"

Examples

```
MPP_singleperiod(lambda= 32000,p=24,
c=10.9,g=7,b=0,na.rm=TRUE)
```

`safteystock_CIS_normal` *safteystock_CIS_normal*

Description

Calculating K value that reduces cost per item short.

Usage

```
safteystock_CIS_normal(quantity, demand, standerddeviation,
  leadtimeinweeks, cost, Citemshort, holdingrate, na.rm = TRUE)
```

Arguments

`quantity,`	numeric,quantity replinished every cycle.
`demand`	numeric,annual Expected demand of the SKU .
`standerddeviation`	numeric, standard deviation of the SKU during season.
`leadtimeinweeks`	leadtime in weeks or order.
`cost`	numeric,cost of the SKU

Citemshort	numeric, peanlity cost of not satisfying demand if any, if not, zero is placed in the argument.
holdingrate	numeric,,holding charge per item per year.
na.rm	Logical, True to remove na.

Details

Calculating K value that reduces cost per item short inventory metric based on an assumed normal distribution.

Value

a dataframe that contains calculations of K the cost per item short metric noting that condition must me less than 1.

Note

this is the first version of the inventorize package, all the functions are common knowlege for supply chain without any contribution from my side, the aim is to facilitate and ease much of the bookkeeping that is endured during stock analysis.

Author(s)

"haytham omar email: <h.omar5942@gmail.com>"

Examples

```
safteystock_CIS_normal(quantity=3000,demand=50000,standerddeviation=4000,
leadtimeinweeks=4,cost=90,Citemshort=15,holdingrate=0.15,na.rm=TRUE)
```

---

safteystock_CSL_normal

safteystock_CSL_normal

Description

calculating saftey stock based on cycle service level rate.

Usage

```
safteystock_CSL_normal(rate, quantity, demand, standerddeviation, leadtime,
  na.rm = TRUE)
```

Arguments

rate,	cycle service level requested.
quantity	quantity ordered every cycle.
demand	numeric, expected weekly demand of the SKU.
standerddeviation	numeric weekly standard deviation of the demand.
leadtime	numeric,leadtime of order in weeks.
na.rm	logical with a default of TRUE

Details

calculating saftey stock and expected unit short based on the cycle service identified assuming a normal distribution.

Value

a dataframe that contains calculations of the expected profit from a newsvendor model based on normal distribution.

Note

this is the first version of the inventorize package, all the fucntions are common knowlege for supply chain without any academic contribution from my side, the aim is to facilitate and ease much of the bookkeeping that is endured during stock analysis. the package relies heavily on the studies that I had in the MIT micromasters program for supply chain.

Author(s)

"haytham omar email: <h.omar5942@gmail.com>"

Examples

```
safteystock_CSL_normal(0.95,30000,28000,5000,8,na.rm=TRUE)
```

---

safteystock_IFR_normal

safteystock_IFR_normal

Description

Calculating K value corresponding to item fill rate.

Usage

```
safteystock_IFR_normal(rate, quantity, demand, standerddeviation, leadtime,
  na.rm = TRUE)
```

Arguments

rate	numeric, item fill rate.
quantity,	numeric,quantity replinished every cycle.
demand	numeric,annual Expected demand of the SKU .
standerddeviation	numeric, standard deviation of the SKU during season.
leadtime	leadtime in weeks of order.
na.rm	Logical, TRUE to remove na.

Details

Calculating K value that corresponds to the desired item fill rate.

Value

a dataframe that contains calculations of K the item fill rate metric.cycle service level and expected unit short.

Note

this is the first version of the inventorize package, all the fucntions are basic knowlege for supply chain without any contribution from my side, the aim is to facilitate and ease much of the book-keeping that is endured during stock analysis.

Author(s)

"haytham omar email: <h.omar5942@gmail.com>"

Examples

```
safteystock_IFR_normal(rate=0.97,quantity=9000,demand=100000,
standerddeviation=5000,leadtime=4,na.rm=TRUE)
```

---

saftey_stock_normal *saftey_stock_normal*

Description

Calculating saftey stock based on the cycle service level.

Usage

```
saftey_stock_normal(annualdemand, annualstandarddeviation, leadtimeinweeks,
  csl, na.rm = TRUE)
```

Arguments

annualdemand	numeric,annual Expected demand of the SKU .
annualstandarddeviation	numeric, standard deviation of the SKU during season.
leadtimeinweeks	leadtime in weeks or order.
csl	cycle service level requested
na.rm	Logical, remove na if TRUE

Details

Calculating saftey stock based on the cycle service level in an assumed normal distribution.

Value

a dataframe that contains calculations of K the cost per item short metric noting that condition must me less than 1.

Note

this is the first version of the inventorize package, all the fucntions are basic knowlege for supply chain without any contribution from my side, the aim is to facilitate and ease much of the book-keeping that is endured during stock analysis.

Author(s)

"haytham omar email: <h.omar5942@gmail.com>"

Examples

```
saftey_stock_normal(annualdemand=8000,annualstandarddeviation=600,
leadtimeinweeks=4,csl=0.92,na.rm=TRUE)
```

---

total.logistics.cost *total.logistics.cost*

Description

calculating total logistics cost .

Usage

```
total.logistics.cost(quantity, expected_annual_demand, sd_annual_demand,
  expected_leadtimeindays, sd_leadtime, costperunit, transportcost,
  holdingrate, ordering_cost, csl)
```

Arguments

quantity	quantity ordered every cycle.
expected_annual_demand	numeric, expected annual demand of the SKU.
sd_annual_demand	annual standard deviation of the SKU.
expected_leadtimeindays	expected lead time in days.
sd_leadtime	standard deviation of leadtime
costperunit	purchase cost of the SKU
transportcost	transport cost of the SKU
holdingrate	holding rate of the SKU
ordering_cost	ordering cost per order placed
csl	cycle service level desired

Details

calculating total logistics cost based on a normal distribution.

Value

a dataframe that contains calculations of the total logistics cost in detail.

Note

this is the first version of the inventorize package, all the functions are common knowlege for supply chain without any academic contribution from my side, the aim is to facilitate and ease much of the bookkeeping that is endured during stock analysis.

Author(s)

"haytham omar email: <h.omar5942@gmail.com>"

Examples

```
total.logistics.cost(quantity=32,expected_annual_demand=1550,
sd_annual_demand=110,expected_leadtimeindays=64,sd_leadtime=8,
costperunit=107,transportcost=22,holdingrate=0.15,ordering_cost=500,csl=0.95)
```

TQpractical *TQpractical*

Description

Identyfing Practical ordering quantity based on the economic order quantity.it is assumed that practical order quantity will be always withing 6

Usage

```
TQpractical(annualdemand, orderingcost, purchasecost, holdingrate,
  na.rm = TRUE)
```

Arguments

annualdemand,	numeric annual demand of the SKU.
orderingcost,	numeric ordering cost of the SKU.
purchasecost	numeric purchase cost of the SKU.
holdingrate	numeric holding rate of the SKU.
na.rm	logical, TRUE.

Value

a dataframe that contains the economic order quantity and the practical order quantity, Tstar (optimum)and Tpractical which is always away from the optimum up to 6

Note

this is the first version of the inventorize package, all the functions are common knowlege for supply chain without any academic contribution from my side, the aim is to facilitate and ease much of the bookkeeping that is endured during stock analysis. the package heavily relies on the learnings from MIT micromasters in supply chain led by Prof. Chris Caplice.

Author(s)

"haytham omar email: <h.omar5942@gmail.com>"

Examples

```
TQpractical(annualdemand=1000,orderingcost=100,purchasecost=72,holdingrate=0.25,na.rm=TRUE)
```

TRC *TRC*

Description

Identyfing Total relevant cost.

Usage

```
TRC(annualdemand, orderingcost, purchasecost, holdingrate, na.rm = TRUE)
```

Arguments

annualdemand	numeric annual demand of the SKU.
orderingcost	numeric ordering cost of the SKU.
purchasecost	numeric purchase cost of the SKU.
holdingrate	numeric holding rate of the SKU.
na.rm	logical, TRUE to remove na.

Note

this is the first version of the inventorize package, all the fucntions are common knowlege for supply chain without any academic contribution from my side, the aim is to facilitate and ease much of the bookkeeping that is endured during stock analysis.

Author(s)

"haytham omar email: <h.omar5942@gmail.com>"

Examples

```
TRC(annualdemand=2500,orderingcost=250,purchasecost=98,holdingrate=0.25,na.rm=TRUE)
```

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