Package ‘planr’

March 28, 2026

Title Tools for Supply Chain Management, Demand and Supply Planning

Version 0.6.4

Description Perform flexible and quick calculations for Demand and Supply Planning, such as projected inventories and coverages, as well as replenishment plan. For any time bucket, daily, weekly or monthly, and any granularity level, product or group of products.

License MIT + file LICENSE

Encoding UTF-8

RoxygenNote 7.3.2

Imports dplyr, tidyr, lubridate, magrittr, RcppRoll

URL https://github.com/nguyennico/planr

BugReports https://github.com/nguyennico/planr/issues

Depends R (>= 4.1.0)

LazyData true

Suggests highcharter, knitr, reactable, rmarkdown, shiny, tidyverse, sparkline, DT, networkD3, testthat (>= 3.0.0)

VignetteBuilder knitr

Config/testthat/edition 3

NeedsCompilation no

Author Nicolas Nguyen [aut, cre]

Maintainer Nicolas Nguyen <nikonguyen@yahoo.fr>

Repository CRAN

Date/Publication 2026-03-28 15:20:02 UTC

Contents

alloc_data 2
alloc_dmd 3
blueprint 4

blueprint_drp 4
blueprint_light 5
const_dmd 6
cov_vol 7
cov_vol_data 7
demo_const_dmd 8
demo_in_transit 9
demo_monthly_dmd 10
drp 10
light_proj_inv 11
month_to_week 12
month_to_weekx 13
proj_git 13
proj_inv 14
slob 15
ssl 16

Index **17**

`alloc_data` *alloc_data*

Description

This dataset contains the basic features to calculate the allocation of a Demand between different receiving entities. Just 5 key features are needed for this: a DFU, a Period, a Demand, an initial Opening Inventory and a Supply Plan. And the breakdown of the Demand by receiving entities, here 5 different Distributors. The idea is to use this dataset to calculate a constrained demand for each Product, on top of the projected inventories & coverages. And to allocate this constrained demand based on the percentage of demand that each receiving entities represents for a given period of time. It's a concept of fair allocation. A constrained demand is a possible demand, which can be answered considering the projected inventories. Then we can apply on this dataset the const_dmd() function, it will add 2 variables : a Constrained.Demand and a Current.Stock.Available.Tag . The Constrained.Demand is the Demand which can be answered considering the projected inventories, i.e which quantity can be answered and when it can be answered. The function alloc_dmd() will allocate this constrained demand between receiving entities.

Usage

```
data(alloc_data)
```

Format

A data frame with 85 rows and 10 variables

Details

- DFU, an item
- Period, a date
- Dist1, a consumption in units related to the distributor 1
- Dist2, a consumption in units related to the distributor 2
- Dist3, a consumption in units related to the distributor 3
- Dist4, a consumption in units related to the distributor 4
- Dist5, a consumption in units related to the distributor 5
- Demand, a consumption in units
- Opening, available inventories at the beginning in units
- Supply, a Replenishment Plan in units

Author(s)

Nicolas Nguyen <nikonguyen@yahoo.fr>

alloc_dmd *Allocates a constrained demand between receiving entities*

Description

Allocates a constrained demand between receiving entities

Usage

```
alloc_dmd(dataset, DFU, Period, Demand, Opening, Supply)
```

Arguments

`dataset`	a dataframe with the demand and supply features for an item per period
`DFU`	name of an item, a SKU, or a node like an item x location
`Period`	a period of time monthly or weekly buckets for example
`Demand`	the quantity of an item planned to be consumed in units for a given period
`Opening`	the opening inventories of an item in units at the beginning of the horizon
`Supply`	the quantity of an item planned to be supplied in units for a given period

Value

a dataframe with the calculated Projected Inventories and Coverages as well as the total Constrained Demand and the allocated demand between receiving entities

Examples

```
alloc_dmd(dataset = alloc_data, DFU, Period, Demand, Opening, Supply)
```

blueprint *blueprint*

Description

This dataset contains the basic features to calculate projected inventories and coverages. And also 2 additional info: a minimum and maximum targets of stock coverage. We can apply on it the proj_inv() function, it will return calculated projected inventories and coverages as well as an analysis of the position of the projected inventories versus the minimum and maximum stocks targets.

Usage

```
data(blueprint)
```

Format

A data frame with 520 rows and 7 variables

Details

- DFU, an item
- Period, a date
- Demand, a consumption in units
- Opening, available inventories at the beginning in units
- Supply, a Replenishment Plan in units
- Min.Cov, a Minimum Stocks Targets in number of Periods
- Max.Cov, a Maximum Stocks Targets in number of Periods

Author(s)

Nicolas Nguyen <nikonguyen@yahoo.fr>

blueprint_drp *blueprint_drp*

Description

This dataset contains the basic features to calculate a Replenishment Plan (also called DRP) and its related projected inventories and coverages. We can apply on it the drp() function, it will return the calculated Replenishment Plan and its related projected inventories and coverages.

Usage

```
data(blueprint_drp)
```

Format

A data frame with 520 rows and 9 variables

Details

- DFU, an item
- Period, a date
- Demand, a consumption in units
- Opening, available inventories at the beginning in units
- Supply, a Replenishment Plan in units
- FH, defines the Frozen and Free Horizon. It has 2 values: Frozen or Free. If Frozen : no calculation of Replenishment Plan yet, the calculation starts when the period is defined as Free. We can use this parameter to consider some defined productions plans or supplies (allocations, workorders,...) in the short-term for example.
- SSCov, the Safety Stock Coverage, expressed in number of periods
- DRPCovDur the Frequency of Supply, expressed in number of periods
- MOQ the Multiple Order Quantity, expressed in units, 1 by default or a Minimum Order Quantity

Author(s)

Nicolas Nguyen <nikonguyen@yahoo.fr>

blueprint_light *blueprint_light*

Description

This dataset contains the basic features to calculate projected inventories and coverages. Just 5 features are needed for this: a DFU, a Period, a Demand, an initial Opening Inventory and a Supply Plan. We can apply on it the light_proj_inv() function, it will return calculated projected inventories and coverages.

Usage

```
data(blueprint_light)
```

Format

A data frame with 520 rows and 5 variables

Details

- DFU, an item
- Period, a date
- Demand, a consumption in units
- Opening, available inventories at the beginning in units
- Supply, a Replenishment Plan in units

Author(s)

Nicolas Nguyen <nikonguyen@yahoo.fr>

---

const_dmd *Calculates the Projected Inventories and Coverages as well as the Constrained Demand and informs a Tag about the part of the Demand already covered by the Opening Inventories*

Description

Calculates the Projected Inventories and Coverages as well as the Constrained Demand and informs a Tag about the part of the Demand already covered by the Opening Inventories

Usage

```
const_dmd(dataset, DFU, Period, Demand, Opening, Supply)
```

Arguments

dataset	a dataframe with the demand and supply features for an item per period
DFU	name of an item, a SKU, or a node like an item x location
Period	a period of time monthly or weekly buckets for example
Demand	the quantity of an item planned to be consumed in units for a given period
Opening	the opening inventories of an item in units at the beginning of the horizon
Supply	the quantity of an item planned to be supplied in units for a given period

Value

a dataframe with the calculated Projected Inventories and Coverages as well as the Constrained Demand and a Tag informing the part of the Demand already covered by the Opening Inventories

Examples

```
const_dmd(dataset = demo_const_dmd, DFU, Period, Demand, Opening, Supply)
```

cov_vol *Calculates the calculated coverage expressed in volume of a coverage initially expressed in periods of time*

Description

Calculates the calculated coverage expressed in volume of a coverage initially expressed in periods of time

Usage

```
cov_vol(dataset, DFU, Period, Demand, Coverage)
```

Arguments

`dataset`	a dataframe with the demand and supply features for an item per period
`DFU`	name of an item, a SKU, or a node like an item x location
`Period`	a period of time monthly or weekly buckets for example
`Demand`	the quantity of an item planned to be consumed in units for a given period
`Coverage`	the defined Coverage, expressed in number of periods

Value

a dataframe with the calculated coverage expressed in volume

Examples

```
cov_vol(dataset = cov_vol_data, DFU, Period, Demand, Coverage)
```

cov_vol_data *cov_vol_data*

Description

This dataset contains the basic features to convert a coverage expressed in periods into a coverage expressed in units We can apply on it the cov_vol() function, it will return the related coverage in units

Usage

```
data(cov_vol_data)
```

Format

A data frame with 520 rows and 4 variables

Details

- DFU, an item
- Period, a date
- Demand, a consumption in units
- Coverage the targeted coverage that we want to convert, expressed in number of periods

Author(s)

Nicolas Nguyen <nikonguyen@yahoo.fr>

demo_const_dmd *demo_const_dmd*

Description

This dataset contains the basic features to calculate projected inventories and coverages. Just 5 features are needed for this: a DFU, a Period, a Demand, an initial Opening Inventory and a Supply Plan. The idea is to use this dataset to calculate a constrained demand for each Product, on top of the projected inventories & coverages. A constrained demand is a possible demand, which can be answered considering the projected inventories. Then we can apply on this dataset the const_dmd() function, it will add 2 variables : a Constrained.Demand and a Current.Stock.Available.Tag . The Constrained.Demand is the Demand which can be answered considering the projected inventories, i.e which quantity can be answered and when it can be answered. The Current.Stock.Available.Tag informs the part of the Demand which is already covered by the Opening Inventories.

Usage

```
data(demo_const_dmd)
```

Format

A data frame with 144 rows and 5 variables

Details

- DFU, an item
- Period, a date
- Demand, a consumption in units
- Opening, available inventories at the beginning in units
- Supply, a Replenishment Plan in units

Author(s)

Nicolas Nguyen <nikonguyen@yahoo.fr>

`demo_in_transit` *demo_in_transit*

Description

This dataset contains the detailed ETA and ETD for the current and next in transit, as well as the Transit Time for a defined DFU. ETA stands for Estimated Time of Arrival. ETD stands for Estimated Time of Departure. There are 2 types of in transit : the current in transit and the next one, not yet shipped. There are 6 variables in this dataset: a DFU, a Period, an ETA Current Goods In Transit, an ETD & ETA Next Goods In Transit, and a Transit Time. Note that the diffrence between ETD and ETA is the Transit Time. The idea is to use this dataset to project the Goods In Transit. We can apply on this dataset the proj_git() function, it will calculate the Proj.GIT which gathers the current and next In Transit quantities.

Usage

```
data(demo_in_transit)
```

Format

A data frame with 447 rows and 6 variables

Details

- DFU, a location and an item
- Period, a date in weekly bucket format
- ETA.Current, some quantities currently in transit displayed at their ETA date in units
- ETA.Next, some quantities to be shipped, not yet in transit, displayed at their ETA date in units
- ETD.Next, some quantities to be shipped, not yet in transit, displayed at their ETD date in units
- TLT, the Transit Lead Time, expressed in weeks, represents the difference between ETA and ETD dates

Author(s)

Nicolas Nguyen <`nikonguyen@yahoo.fr`>

demo_monthly_dmd *demo_monthly_dmd*

Description

This dataset contains a set of Monthly Demand for two Products. There are 3 variables: a DFU, a Monthly Period, a Monthly Demand. The idea is to use this dataset to convert the Demand from Monthly into Weekly bucket. We can apply on this dataset the month_to_week() function, it will create a weekly bucket Period and convert the Demand from Monthly into Weekly bucket.

Usage

```
data(demo_monthly_dmd)
```

Format

A data frame with 24 rows and 3 variables

Details

- DFU, an item
- Period, a date in monthly format
- Demand, a consumption in units

Author(s)

Nicolas Nguyen <nikonguyen@yahoo.fr>

drp *Calculates a Replenishment Plan (also called DRP : Distribution Requirement Planning) and the related Projected Inventories and Coverages*

Description

Calculates a Replenishment Plan (also called DRP : Distribution Requirement Planning) and the related Projected Inventories and Coverages

Usage

```
drp(dataset, DFU, Period, Demand, Opening, Supply, SSCov, DRPCovDur, MOQ, FH)
```

Arguments

dataset	a dataframe with the demand and supply features for an item per period
DFU	name of an item, a SKU, or a node like an item x location
Period	a period of time monthly or weekly buckets for example
Demand	the quantity of an item planned to be consumed in units for a given period
Opening	the opening inventories of an item in units at the beginning of the horizon
Supply	the quantity of an item planned to be supplied in units for a given period
SSCov	the Safety Stock Coverage, expressed in number of periods
DRPCovDur	the Frequency of Supply, expressed in number of periods
MOQ	the Multiple Order Quantity, expressed in units, 1 by default or a multiple of a Minimum Order Quantity
FH	defines the Frozen and Free Horizon. It has 2 values: Frozen or Free. If Frozen : no calculation of Replenishment Plan yet, the calculation starts when the period is defined as Free. We can use this parameter to consider some defined productions plans or supplies (allocations, workorders,...) in the short-term for example.

Value

a dataframe with the calculated Replenishment Plan and related Projected inventories and Coverages

Examples

```
drp(dataset = blueprint_drp, DFU, Period, Demand, Opening, Supply, SSCov, DRPCovDur, MOQ, FH)
```

---

light_proj_inv *Calculates projected inventories and coverages*

Description

Calculates projected inventories and coverages

Usage

```
light_proj_inv(dataset, DFU, Period, Demand, Opening, Supply)
```

Arguments

dataset	a dataframe with the demand and supply features for an item per period
DFU	name of an item, a SKU, or a node like an item x location
Period	a period of time monthly or weekly buckets for example
Demand	the quantity of an item planned to be consumed in units for a given period
Opening	the opening inventories of an item in units at the beginning of the horizon
Supply	the quantity of an item planned to be supplied in units for a given period

Value

a dataframe with the calculated projected inventories and coverages and the related analysis

Examples

```
light_proj_inv(dataset = blueprint_light, DFU, Period, Demand, Opening, Supply)
```

---

month_to_week *Convert a Demand expressed in Monthly buckets into Weekly buckets*

Description

Convert a Demand expressed in Monthly buckets into Weekly buckets

Usage

```
month_to_week(dataset, DFU, Period, Demand)
```

Arguments

dataset	a dataframe with the demand in monthly bucket for each item
DFU	name of an item, a SKU, or a node like an item x location
Period	a monthly period of time that we want to convert into weekly buckets
Demand	the quantity of an item planned to be consumed in units for a given period

Value

a dataframe with the Demand expressed in weekly buckets for each item

Examples

```
month_to_week(dataset = demo_monthly_dmd, DFU, Period, Demand)
```

month_to_weekx *Convert a Demand expressed in Monthly buckets into Weekly buckets*

Description

Convert a Demand expressed in Monthly buckets into Weekly buckets

Usage

```
month_to_weekx(dataset, DFU, W1, W2, W3, W4, Period, Demand)
```

Arguments

dataset	a dataframe with the demand in monthly bucket for each item
DFU	name of an item, a SKU, or a node like an item x location
W1	percentage of demand done during the first week
W2	percentage of demand done during the second week
W3	percentage of demand done during the third week
W4	percentage of demand done during the fourth week
Period	a monthly period of time that we want to convert into weekly buckets
Demand	the quantity of an item planned to be consumed in units for a given period

Value

a dataframe with the Demand expressed in weekly buckets for each item

Examples

```
month_to_week(dataset = demo_monthly_dmd, DFU, Period, Demand)
```

proj_git *Calculates the projected in transit for a defined DFU*

Description

Calculates the projected in transit for a defined DFU

Usage

```
proj_git(dataset, DFU, Period, ETA.Current, ETA.Next, ETD.Next, TLT)
```

Arguments

`dataset` a dataframe which contains the different variable below for each DFU

`DFU` name of a node, which is an item x location

`Period` a period of time, expressed in weekly bucket

`ETA.Current` quantities currently in transit displayed at their ETA date in units

`ETA.Next` quantities to be shipped, not yet in transit, displayed at their ETA date in units

`ETD.Next` quantities to be shipped, not yet in transit, displayed at their ETD date in units

`TLT` Transit Lead Time, expressed in weeks, represents the difference between ETA and ETD dates

Value

a dataframe with the projected in transit quantity calculated for each DFU

Examples

```
proj_git(dataset = demo_in_transit, DFU, Period, ETA.Current, ETA.Next, ETD.Next, TLT)
```

`proj_inv` *Calculates projected inventories and coverages and perform an analysis vs stocks targets*

Description

Calculates projected inventories and coverages and perform an analysis vs stocks targets

Usage

```
proj_inv(dataset, DFU, Period, Demand, Opening, Supply, Min.Cov, Max.Cov)
```

Arguments

`dataset` a dataframe with the demand and supply features for an item per period

`DFU` name of an item, a SKU, or a node like an item x location

`Period` a period of time monthly or weekly buckets for example

`Demand` the quantity of an item planned to be consumed in units for a given period

`Opening` the opening inventories of an item in units at the beginning of the horizon

`Supply` the quantity of an item planned to be supplied in units for a given period

`Min.Cov` minimum stocks target of an item expressed in periods

`Max.Cov` maximum stocks target of an item expressed in periods

Value

a dataframe with the calculated projected inventories and coverages and the related analysis

Examples

```
proj_inv(dataset = blueprint, DFU, Period, Demand, Opening, Supply, Min.Cov, Max.Cov)
```

`slob` *slob*

Description

This dataset contains the detailed Opening Inventories for two Products. There are 4 variables: a DFU, a Period, a Demand and the breakdown of the Opening Inventories by expiry date or minimum Remaining Shelf Life for use. The idea is to use this dataset to calculate the Short Shelf Life quantities, called here SSL Qty. We can apply on this dataset the ssl() function, it will calculate a SSL Qty field.

Usage

```
data(slob)
```

Format

A data frame with 44 rows and 4 variables

Details

- DFU, an item
- Period, a date in monthly format
- Demand, a consumption in units
- Opening, the breakdown of the opening inventories in units by expiry date

Author(s)

Nicolas Nguyen <`nikonguyen@yahoo.fr`>

ssl *Calculates the short shelf life of an opening inventories, also called obsolescence risks*

Description

Calculates the short shelf life of an opening inventories, also called obsolescence risks

Usage

```
ssl(dataset, DFU, Period, Demand, Opening)
```

Arguments

`dataset`	a dataframe with the demand in weekly or monthly bucket for each item
`DFU`	name of an item, a SKU, or a node like an item x location
`Period`	a period of time, expressed in monthly or weekly bucket
`Demand`	the quantity of an item planned to be consumed in units for a given period
`Opening`	the breakdown of the opening inventories by expiry date, or percentage of minimum remaining shelflife for use

Value

a dataframe with the SSL.Qty related to the Opening Inventories of each item

Examples

```
ssl(dataset = slob, DFU, Period, Demand, Opening)
```

Index

alloc_data, 2
alloc_dmd, 3

blueprint, 4
blueprint_drp, 4
blueprint_light, 5

const_dmd, 6
cov_vol, 7
cov_vol_data, 7

demo_const_dmd, 8
demo_in_transit, 9
demo_monthly_dmd, 10
drp, 10

light_proj_inv, 11

month_to_week, 12
month_to_weekx, 13

proj_git, 13
proj_inv, 14

slob, 15
ssl, 16