R topics documented:

- `rfm` ................................................. 2
- `rfm_barchart_data` ............................... 2
- `rfm_bar_chart` ...................................... 3
- `rfm_data_customer` ..................... 4
- `rfm_data_orders` ............................. 4
- `rfm_heatmap` ...................................... 5
- `rfm_heatmap_data` ............................ 6
- `rfm_histograms` ................................. 7
- `rfm_hist_data` ...................................... 8
- `rfm_launch_app` ............................... 9
- `rfm_order_dist` ................................. 9
- `rfm_plot_median_recency` ............. 10
- `rfm_rm_plot` ..................................... 11
- `rfm_segment` ...................................... 12
- `rfm_table_customer` ..................... 13
- `rfm_table_customer_2` .................. 14
- `rfm_table_order` ............................. 16

Index 18

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**rfm** ............................... **rfm package**

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**Description**

Tools for customer segmentation analysis

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**rfm_barchart_data** ........................ **Bar chart data**

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**Description**

Data for generating bar charts.

**Usage**

\[ rfm\_barchart\_data(rfm\_table) \]

**Arguments**

- `rfm_table` An object of class `rfm_table`. 
**rfm_bar_chart**

**Examples**

```r
# using transaction data
analysis_date <- lubridate::as_date('2006-12-31', tz = 'UTC')
rfm_order <- rfm_table_order(rfm_data_orders, customer_id, order_date, revenue, analysis_date)

# bar chart data
rfm_barchart_data(rfm_order)

# using customer data
analysis_date <- lubridate::as_date('2007-01-01', tz = 'UTC')
rfm_customer <- rfm_table_customer(rfm_data_customer, customer_id, number_of_orders, recency_days, revenue, analysis_date)

# bar chart data
rfm_barchart_data(rfm_customer)
```

---

**rfm_bar_chart**

*RFM bar chart*

**Description**

Examine the distribution of monetary scores for the different combinations of frequency and recency scores.

**Usage**

```r
rfm_bar_chart(rfm_table, bar_color = "blue",
               xaxis_title = "Monetary Score", sec_xaxis_title = "Frequency Score",
               yaxis_title = "", sec_yaxis_title = "Recency Score")
```

**Arguments**

- `rfm_table` An object of class `rfm_table`.
- `bar_color` Color of the bars.
- `xaxis_title` X axis title.
- `sec_xaxis_title` Secondary x axis title.
- `yaxis_title` Y axis title.
- `sec_yaxis_title` Secondary y axis title.

**Value**

Bar chart.
Examples

```r
# using transaction data
analysis_date <- lubridate::as_date('2006-12-31', tz = 'UTC')
rfm_order <- rfm_table_order(rfm_data_orders, customer_id, order_date, revenue, analysis_date)

# bar chart
rfm_bar_chart(rfm_order)
```

rfm_data_customer

**RFM customer data**

**Description**

A dataset containing customer level data.

**Usage**

```r
rfm_data_customer
```

**Format**

A tibble with 39,999 rows and 5 variables:

- `customer_id` Customer id.
- `total_amount` Total amount of all orders.
- `most_recent_visit` Date of the most recent transaction.
- `number_of_purchases` Total number of transactions/orders.
- `purchase_interval` Number of days since last transaction/order.

rfm_data_orders

**RFM transaction data**

**Description**

A dataset containing transactions of different customers.

**Usage**

```r
rfm_data_orders
```
**Format**

A tibble with 49.6 rows and 3 variables:

- **order_date** order date
- **customer_id** customer id
- **revenue** transaction amount

---

**Description**

The heat map shows the average monetary value for different categories of recency and frequency scores. Higher scores of frequency and recency are characterized by higher average monetary value as indicated by the darker areas in the heatmap.

**Usage**

```r
rfm_heatmap(data, plot_title = "RFM Heat Map",
plot_title_justify = 0.5, xaxis_title = "Frequency",
yaxis_title = "Recency", legend_title = "Mean Monetary Value",
brewer_n = 5, brewer_name = "PuBu")
```

**Arguments**

- **data** An object of class `rfm_table`.
- **plot_title** Title of the plot.
- **plot_title_justify** Horizontal justification of the plot title; 0 for left justified and 1 for right justified.
- **xaxis_title** X axis title.
- **yaxis_title** Y axis title.
- **legend_title** Legend title.
- **brewer_n** Indicates the number of colors in the palette; `RColorBrewer` is used for the color palette of the heatmap; check the documentation of `brewer.pal`.
- **brewer_name** Palette name; check the documentation of `brewer.pal`.

**Examples**

```r
# using transaction data
analysis_date <- lubridate::as_date('2006-12-31', tz = 'UTC')
rfm_order <- rfm_table_order(rfm_data_orders, customer_id, order_date, revenue, analysis_date)

# heat map
```
rfm_heatmap_data

Description

Data for generating heatmap.

Usage

rfm_heatmap_data(rfm_table)

Arguments

rfm_table An object of class rfm_table.

Examples

# using transaction data
analysis_date <- lubridate::as_date('2006-12-31', tz = 'UTC')
rfm_order <- rfm_table_order(rfm_data_orders, customer_id, order_date, revenue, analysis_date)

# heat map data
rfm_heatmap_data(rfm_order)

# using customer data
analysis_date <- lubridate::as_date('2007-01-01', tz = 'UTC')
rfm_customer <- rfm_table_customer(rfm_data_customer, customer_id, number_of_orders, recency_days, revenue, analysis_date)

# heat map data
rfm_heatmap_data(rfm_customer)
**Description**

Histograms of recency, frequency and monetary value.

**Usage**

```r
rfm_histograms(rfm_table, hist_bins = 9, hist_color = "blue",
    plot_title = "RFM Histograms", xaxis_title = " ",
    yaxis_title = "Count", hist_m_label = "Monetary",
    hist_r_label = "Recency", hist_f_label = "Frequency",
    plot_title_justify = 0.5)
```

**Arguments**

- `rfm_table` An object of class `rfm_table`.
- `hist_bins` Number of bins of the histograms.
- `hist_color` Color of the histogram.
- `plot_title` Title of the plot.
- `xaxis_title` X axis title.
- `yaxis_title` Y axis title.
- `hist_m_label` Label of the monetary value histogram.
- `hist_r_label` Label of the recency histogram.
- `hist_f_label` Label of the frequency histogram.
- `plot_title_justify` Horizontal justification of the plot title; 0 for left justified and 1 for right justified.

**Value**

Histograms

**Examples**

```r
# using transaction data
analysis_date <- lubridate::as_date('2006-12-31', tz = 'UTC')
rfm_order <- rfm_table_order(rfm_data_orders, customer_id, order_date,
    revenue, analysis_date)

# histogram
rfm_histograms(rfm_order)

# using customer data
```
**rfm_hist_data**

```r
analysis_date <- lubridate::as_date('2007-01-01', tz = 'UTC')
rfm_customer <- rfm_table_customer(rfm_data_customer, customer_id, number_of_orders, recency_days, revenue, analysis_date)

# histogram
dm_histograms(rfm_customer)
```

---

**rfm_hist_data**

*Histogram data*

**Description**

Data for generating histograms.

**Usage**

```r
rfm_hist_data(rfm_table)
```

**Arguments**

- `rfm_table`:
  - An object of class `rfm_table`.

**Examples**

```r
# using transaction data
analysis_date <- lubridate::as_date('2006-12-31', tz = 'UTC')
rfm_order <- rfm_table_order(rfm_data_orders, customer_id, order_date, revenue, analysis_date)

# histogram data
dm_histogram_data(rfm_order)

# using customer data
analysis_date <- lubridate::as_date('2007-01-01', tz = 'UTC')
rfm_customer <- rfm_table_customer(rfm_data_customer, customer_id, number_of_orders, recency_days, revenue, analysis_date)

# histogram data
dm_histogram_data(rfm_customer)
```
### rfm_launch_app  
**Launch shiny app**

**Description**
Launches shiny app.

**Usage**
```
rfm_launch_app()
```

**Examples**
```
## Not run:
rfm_launch_app()

## End(Not run)
```

### rfm_order_dist  
**Customers by orders**

**Description**
Visualize the distribution of customers across orders.

**Usage**
```
rfm_order_dist(rfm_table, bar_color = "blue", xaxis_title = "Orders", yaxis_title = "Customers", plot_title = "Customers by Orders", plot_title_justify = 0.5)
```

**Arguments**
- `rfm_table`  
  An object of class rfm_table.
- `bar_color`  
  Color of the bars.
- `xaxis_title`  
  X axis title.
- `yaxis_title`  
  Y axis title.
- `plot_title`  
  Title of the plot.
- `plot_title_justify`  
  Horizontal justification of the plot title; 0 for left justified and 1 for right justified.

**Value**
Bar chart.
Examples

# using transaction data
analysis_date <- lubridate::as_date('2006-12-31', tz = 'UTC')
rfm_order <- rfm_table_order(rfm_data_orders, customer_id, order_date, revenue, analysis_date)

# order distribution
rfm_order_dist(rfm_order)

# using customer data
analysis_date <- lubridate::as_date('2007-01-01', tz = 'UTC')
rfm_customer <- rfm_table_customer(rfm_data_customer, customer_id, number_of_orders, recency_days, revenue, analysis_date)

# order distribution
rfm_order_dist(rfm_customer)

rfm_plot_median_recency

Segmentation plots

Description

Segment wise median recency, frequency & monetary value plot.

Usage

rfm_plot_median_recency(rfm_segment_table)
rfm_plot_median_frequency(rfm_segment_table)
rfm_plot_median_monetary(rfm_segment_table)

Arguments

rfm_segment_table
Output from rfm_segment.

Examples

analysis_date <- lubridate::as_date('2006-12-31', tz = 'UTC')
rfm_result <- rfm_table_order(rfm_data_orders, customer_id, order_date, revenue, analysis_date)

Description

Examine the relationship between recency, frequency and monetary values.

Usage

```r
rfm_rm_plot(rfm_table, point_color = "blue", xaxis_title = "Monetary",
            yaxis_title = "Recency", plot_title = "Recency vs Monetary")

rfm_fm_plot(rfm_table, point_color = "blue", xaxis_title = "Monetary",
            yaxis_title = "Frequency", plot_title = "Frequency vs Monetary")

rfm_rf_plot(rfm_table, point_color = "blue", xaxis_title = "Frequency",
            yaxis_title = "Recency", plot_title = "Recency vs Frequency")
```

Arguments

- `rfm_table`: An object of class `rfm_table`.
- `point_color`: Color of the scatter points.
- `xaxis_title`: X axis title.
- `yaxis_title`: Y axis title.
- `plot_title`: Title of the plot.

Value

Scatter plot.
Examples

```r
# rfm table
analysis_date <- lubridate::as_date('2006-12-31', tz = 'UTC')
rfm_result <- rfm_table_order(rfm_data_orders, customer_id, order_date, revenue, analysis_date)

# monetary value vs recency
rfm_rm_plot(rfm_result)

# frequency vs monetary value
rfm_fm_plot(rfm_result)

# frequency vs recency
rfm_rf_plot(rfm_result)
```

---

### rfm_segment

**Segmentation**

Create segments based on recency, frequency and monetary scores.

**Usage**

```r
rfm_segment(data, segment_names = NULL, recency_lower = NULL, recency_upper = NULL, frequency_lower = NULL, frequency_upper = NULL, monetary_lower = NULL, monetary_upper = NULL)
```

**Arguments**

- `data` An object of class `rfm_table`.
- `segment_names` Names of the segments.
- `recency_lower` Lower boundary for recency score.
- `recency_upper` Upper boundary for recency score.
- `frequency_lower` Lower boundary for frequency score.
- `frequency_upper` Upper boundary for frequency score.
- `monetary_lower` Lower boundary for monetary score.
- `monetary_upper` Upper boundary for monetary score.
**rfm_table_customer**

### Examples

```r
analysis_date <- lubridate::as_date('2006-12-31', tz = 'UTC')
rfm_result <- rfm_table_order(rfm_data_orders, customer_id, order_date, revenue, analysis_date)


recency_lower <- c(4, 2, 3, 4, 3, 2, 2, 1, 1, 1)
recency_upper <- c(5, 5, 5, 5, 4, 3, 3, 2, 1, 2)
frequency_lower <- c(4, 3, 1, 1, 1, 2, 2, 1, 2, 4, 1)
frequency_upper <- c(5, 5, 3, 1, 1, 3, 2, 5, 2)
monetary_lower <- c(4, 3, 1, 1, 1, 2, 1, 2, 4, 1)
monetary_upper <- c(5, 5, 3, 1, 1, 3, 2, 5, 2)

rfm_segment(rfm_result, segment_names, recency_lower, recency_upper, frequency_lower, frequency_upper, monetary_lower, monetary_upper)
```

### Description

**RFM table (customer data)**

Recency, frequency, monetary and RFM score.

### Usage

```r
rfm_table_customer(data = NULL, customer_id = NULL, n_transactions = NULL, recency_days = NULL, total_revenue = NULL, analysis_date = NULL, recency_bins = 5, frequency_bins = 5, monetary_bins = 5, ...)
```

### Arguments

- **data**: A data.frame or tibble.
- **customer_id**: Unique id of the customer.
- **n_transactions**: Number of transactions/orders.
- **recency_days**: Number of days since the last transaction.
- **total_revenue**: Total revenue from the customer.
- **analysis_date**: Date of analysis.
- **recency_bins**: Number of bins for recency.
- **frequency_bins**: Number of bins for frequency.
- **monetary_bins**: Number of bins for monetary.
- **...**: Other arguments.
Value

rfm_table_customer returns a tibble with the following columns:

- **customer_id**: Unique id of the customer.
- **recency_days**: Number of days since the most recent transaction.
- **transaction_count**: Total number of transactions of the customer.
- **amount**: Revenue from the customer.
- **recency_score**: Recency score of the customer.
- **frequency_score**: Frequency score of the customer.
- **monetary_score**: Monetary score of the customer.
- **rfm_score**: RFM score of the customer.

Examples

```r
analysis_date <- lubridate::as_date('2007-01-01', tz = 'UTC')
rfm_table_customer(rfm_data_customer, customer_id, number_of_orders, 
recency_days, revenue, analysis_date)

# access rfm table
result <- rfm_table_customer(rfm_data_customer, customer_id, number_of_orders, 
recency_days, revenue, analysis_date)
result$rfm
```

---

**Description**

Recency, frequency, monetary and RFM score.

**Usage**

```r
rfm_table_customer_2(data = NULL, customer_id = NULL, 
n_transactions = NULL, latest_visit_date = NULL, 
total_revenue = NULL, analysis_date = NULL, recency_bins = 5, 
frequency_bins = 5, monetary_bins = 5, ...)
```
Arguments

data A data.frame or tibble.
customer_id Unique id of the customer.
n_transactions Number of transactions/orders.
latest_visit_date Date of the latest visit.
total_revenue Total revenue from the customer.
analysis_date Date of analysis.
recency_bins Number of bins for recency.
frequency_bins Number of bins for frequency.
monetary_bins Number of bins for monetary.
... Other arguments.

Value

rfm_table_customer_2 returns a tibble with the following columns:

customer_id Unique id of the customer.
recency_days Number of days since the most recent transaction.
transaction_count Total number of transactions of the customer.
amount Revenue from the customer.
recency_score Recency score of the customer.
frequency_score Frequency score of the customer.
monetary_score Monetary score of the customer.
rfm_score RFM score of the customer.

Examples

analysis_date <- lubridate::as_date('2007-01-01', tz = 'UTC')
rfm_table_customer_2(rfm_data_customer, customer_id, number_of_orders, 
  most_recent_visit, revenue, analysis_date)

# access rfm table
result <- rfm_table_customer_2(rfm_data_customer, customer_id, number_of_orders, 
  most_recent_visit, revenue, analysis_date)
result$rfm
```
rfm_table_order  RFM table (transaction data)
```

**Description**

Recency, frequency, monetary and RFM score.

**Usage**

```r
rfm_table_order(data = NULL, customer_id = NULL, order_date = NULL, revenue = NULL, analysis_date = NULL, recency_bins = 5, frequency_bins = 5, monetary_bins = 5, ...)
```

**Arguments**

- `data` A data.frame or tibble.
- `customer_id` Unique id of the customer.
- `order_date` Date of the transaction.
- `revenue` Revenue from the customer.
- `analysis_date` Date of analysis.
- `recency_bins` Number of bins for recency.
- `frequency_bins` Number of bins for frequency.
- `monetary_bins` Number of bins for monetary.
- `...` Other arguments.

**Value**

`rfm_table_order` returns a tibble with the following columns:

- `customer_id` Unique id of the customer.
- `date_most_recent` Date of the most recent transaction.
- `recency_days` Number of days since the most recent transaction.
- `transaction_count` Total number of transactions of the customer.
- `amount` Revenue from the customer.
- `recency_score` Recency score of the customer.
- `frequency_score` Frequency score of the customer.
- `monetary_score` Monetary score of the customer.
- `rfm_score` RFM score of the customer.
Examples

```r
analysis_date <- lubridate::as_date('2006-12-31', tz = 'UTC')
rfm_table_order(rfm_data_orders, customer_id, order_date, revenue, analysis_date)

# access rfm table
result <- rfm_table_order(rfm_data_orders, customer_id, order_date, revenue, analysis_date)
result$rfm
```
Index

*Topic datasets
  rfm_data_customer, 4
  rfm_data_orders, 4

rfm, 2
rfm-package (rfm), 2
rfm_bar_chart, 3
rfm_barchart_data, 2
rfm_data_customer, 4
rfm_data_orders, 4
rfm_fm_plot (rfm_rm_plot), 11
rfm_heatmap, 5
rfm_heatmap_data, 6
rfm_hist_data, 8
rfm_histograms, 7
rfm_launch_app, 9
rfm_order_dist, 9
rfm_plot_median_frequency
  (rfm_plot_median_recency), 10
rfm_plot_median_monetary
  (rfm_plot_median_recency), 10
rfm_plot_median_recency, 10
rfm_rf_plot (rfm_rm_plot), 11
rfm_rm_plot, 11
rfm_segment, 12
rfm_table_customer, 13
rfm_table_customer_2, 14
rfm_table_order, 16