

# Package 'edgar'

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**Type** Package

**Title** Platform for EDGAR Filing Management and Textual Analysis

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**Author** Gunratan Lonare <lonare.gunratan@gmail.com>, Bharat Patil  
<bharatspatil@gmail.com>

**Maintainer** Gunratan Lonare <lonare.gunratan@gmail.com>

**Depends** R (>= 3.1)

**Imports** R.utils, tm, XML, stringr, stringi, qdapRegex

**Description** In the USA, companies file different forms with the U.S. Securities and Exchange Commission (SEC) through EDGAR (Electronic Data Gathering, Analysis, and Retrieval system). The EDGAR database automated system collects all the different necessary filings and makes it publicly available. Investors, regulators, and researchers often require these forms for various purposes. This package helps in bulk data gathering and textual analysis of EDGAR filings. It downloads filings from SEC server in bulk with a single query. Additionally, it provides various useful functions: extracts 8-K triggering events, extract "Business (Item 1)" and "Management's Discussion and Analysis(Item 7)" sections of annual statements, search filings for desired words, provides sentiment measures, parse filing header information, and provides HTML view of SEC filings.

**License** GPL-2

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get8KItems	<i>Retrieves Form 8-K event information</i>
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### Description

get8KItems retrieves Form 8-K event information of firms based on CIK numbers and filing year.

### Usage

```
get8KItems(cik.no, filing.year)
```

### Arguments

cik.no            vector of CIK numbers in integer format. Suppress leading zeroes from CIKs.  
 filing.year      vector of four digit numeric year

### Details

get8KItems function takes firm CIK number(s) and filing year(s) as input parameters from a user and provides information on the Form 8-K triggering events along with the firm filing information. The function searches and imports existing downloaded 8-K filings in the current directory; otherwise it downloads them using [getFilings](#) function. It then reads the 8-K filings and parse the contents to get events information.

### Value

Function returns dataframe with Form 8-K events information along with CIK number, company name, date of filing, and accession number

## Examples

```
## Not run:

output <- get8KItems(cik.no = 38079, filing.year = 2005)
## Returns 8-K events information for CIK '38079' filed in year 2005.

output <- get8KItems(cik.no = c(1000180,38079),
                    filing.year = c(2005, 2006))

## End(Not run)
```

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getBusinDescr	<i>Retrieves business descriptions from annual statements</i>
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## Description

getBusinessDescr retrieves "Item 1. Business" section from annual statements based on CIK number(s) and filing year(s).

## Usage

```
getBusinDescr(cik.no, filing.year)
```

## Arguments

cik.no	vector of firm CIK numbers in integer format. Suppress leading zeroes from CIKs.
filing.year	vector of four digit numeric year

## Details

getBusinDescr function takes firm CIK numbers and filing years as input parameters from a user and provides "Item 1" section extracted from annual statements along with filing information. The function imports annual filings downloaded via [getFilings](#) function; otherwise, it downloads the filings which are not already been downloaded. It then reads the downloaded statements, cleans HTML tags, and parse the contents. It creates a new directory with name "Business descriptions text" in the current working directory and saves scrapped "Item 1" sections this directory. It considers "10-K", "10-K405", "10KSB", and "10KSB40" form types as annual statements.

## Value

Function saves scrapped "Item 1" section from annual filings in "Business descriptions text" directory present in the working directory. The output dataframe contains information on CIK number, company name, date of filing, and accession number

## Examples

```
## Not run:

output <- getBusinDescr(cik.no = c(1000180, 38079), filing.year = 2005)
## saves scrapped "Item 1" section from 10-K filings for CIKs in
"Business descriptions text" directory present
in the working directory. Also, it provides filing information in
the output dataframe.

output <- getBusinDescr(cik.no = c(1000180, 38079),
                        filing.year = c(2005, 2006))

## End(Not run)
```

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getDailyMaster	<i>Retrieves daily master index</i>
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## Description

getDailyMaster retrieves daily master index from the US SEC site.

## Usage

```
getDailyMaster(input.date)
```

## Arguments

input.date      in character format 'mm/dd/YYYY'.

## Details

getDailyMaster function takes date as an input parameter from a user, and downloads master index for the date from the US SEC server <https://www.sec.gov/Archives/edgar/daily-index/>. It strips headers and converts this daily filing information into dataframe format. Function creates new directory 'Daily Indexes' into working directory to save these downloaded daily master index files in Rda format.

## Value

Function returns filings information in a dataframe format.

## Examples

```
## Not run:

output <- getDailyMaster('08/09/2016')

## End(Not run)
```

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getFilingHeader	<i>Scrape EDGAR filing header information</i>
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## Description

getFilingHeader Extract EDGAR filing header information

## Usage

```
getFilingHeader(cik.no, form.type, filing.year)
```

## Arguments

cik.no	vector of CIK number of firms in integer format. Suppress leading zeroes from CIKs. Keep cik.no = 'ALL' if needs to download for all CIKs.
form.type	character vector containing form type to be downloaded. form.type = 'ALL' if need to download all forms.
filing.year	vector of four digit numeric year

## Details

getFilingHeader function takes CIK(s), form type(s), and year(s) as input parameters. The function first imports available downloaded filings in local working directory 'Edgar filings' created by [getFilings](#) function; otherwise, it downloads the filings which is not already been downloaded. It then reads the filings, and parse all the important header information. The function returns a dataframe with filing information, and header information.

## Value

Function returns dataframe containing CIK number, company name, date of filing, accession number, confirmed period of report, fiscal year end, Standard Industrial Classification (SIC) code, Internal Revenue Code (IRS) code, state of incorporation, business address, and mailing address. If a filing contains multiple filers then output will contain header information on all the filers in multiple rows.

## Examples

```
## Not run:  
  
header.df <- getFilingHeader(cik.no = c('1000180', '38079'),  
                           form.type = '10-K', filing.year = 2006)  
  
header.df <- getFilingHeader(cik.no = '38079', c('10-K', '10-Q'),  
                           filing.year = c(2005, 2006))  
  
## End(Not run)
```

---

getFilingInfo	<i>Retrieves filing information of a firm</i>
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### Description

getFilingInfo retrieves filing information of a firm based on its name or cik.

### Usage

```
getFilingInfo(firm.identifier, filing.year, quarter, form.type)
```

### Arguments

firm.identifier	CIK of a firm in integer format or full/partial name of a firm in character format. Suppress leading zeroes from CIKs.
filing.year	vector of integer containing filing years.
quarter	vector of one digit integer quarter number. By default, it is considered as all the quarters, quarter =c(1, 2, 3, 4).
form.type	vector of form types in character format. By default, it is kept as all the available form types.

### Details

getFilingInfo function takes firm identifier (name or cik), filing year(s), quarter(s), and form type as input parameters from a user and provides filing information for the firm. The function automatically downloads master index for the input year(s) and the quarter(s) using [getMasterIndex](#) function if it is not already been downloaded in the current working directory. By default, information of all the form types filed in all the quarters of the input year by the firm will be provided by this function.

### Value

Function returns dataframe with filing information.

### Examples

```
## Not run:

info <- getFilingInfo('United Technologies', c(2005, 2006),
                    quarter = c(1,2), form.type = c('8-K','10-K'))
## Returns filing information on '8-K' and '10-K' filed by the firm
in quarter 1 and 2 of year 2005 and 2006.

info <- getFilingInfo(1067701, 2006)
## Returns all the filings information filed by the firm in all
the quarters of year 2006.

## End(Not run)
```

---

getFilings	<i>Retrieves EDGAR filings from SEC server</i>
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### Description

getFilings retrieves EDGAR filings for a specific CIKs, form-type, filing year and quarter of the filing.

### Usage

```
getFilings(cik.no, form.type, filing.year, quarter, downl.permit)
```

### Arguments

cik.no	vector of CIK number of firms in integer format. Suppress leading zeroes from CIKs. Keep cik.no = 'ALL' if needs to download for all CIKs.
form.type	character vector containing form type to be downloaded. form.type = 'ALL' if need to download all forms.
filing.year	vector of four digit numeric year
quarter	vector of one digit quarter integer number. By default, it is kept as c(1, 2, 3, 4).
downl.permit	"y" or "n". The default value of downl.permit is "n". It asks a user permission to download fillings. This permission helps the user to decide in case if number of filings are large. Setting downl.permit = "y" will not ask for user permission to download filings.

### Details

getFilings function takes CIKs, form type, filing year, and quarter of the filing as input. It creates new directory 'Edgar filings\_full text' to store all downloaded filings. All the filings will be stored in the current working directory. Keep the same current working directory for further process.

### Value

Function downloads EDGAR filings and returns download status in dataframe format with CIK, company name, form type, date filed, accession number, and download status.

### Examples

```
## Not run:

output <- getFilings(cik.no = c(1000180, 38079), c('10-K', '10-Q'),
                    2006, quarter = c(1, 2, 3), downl.permit = "n")

## download '10-Q' and '10-K' filings filed by the firm with
## CIK = 1000180 in quarters 1,2, and 3 of the year 2006. These
## filings will be stored in the current working directory.
```

```
## End(Not run)
```

---

```
getFilingsHTML          Get HTML view of EDGAR filings
```

---

### Description

getFilingsHTML retrieves complete EDGAR filings and store them in HTML format for view.

### Usage

```
getFilingsHTML(cik.no, form.type, filing.year, quarter)
```

### Arguments

cik.no	vector of CIK number of firms in integer format. Suppress leading zeroes from CIKs. Keep cik.no = 'ALL' if needs to download for all CIKs.
form.type	character vector containing form type to be downloaded. form.type = 'ALL' if need to download all forms.
filing.year	vector of four digit numeric year
quarter	vector of one digit quarter integer number. By default, it is kept as c(1, 2, 3, 4).

### Details

getFilingsHTML function takes CIKs, form type, filing year, and quarter of the filing as input. The function imports edgar filings downloaded via [getFilings](#) function; otherwise, it downloads the filings which are not already been downloaded. It then reads the downloaded filing, scraps main body the filing, and save the filing content in 'Edgar filings\_HTML view' directory in HTML format. The new directory 'Edgar filings\_HTML view' will be automatically created by this function. This function only gives a view of the main body of the filing, exhibit and other supporting documents will not appear in HTML file.

### Value

Function saves EDGAR filings in HTML format and returns filing information in dataframe format.

### Examples

```
## Not run:

output <- getFilingsHTML(cik.no = c(1000180, 38079), c('10-K', '10-Q'),
                        2006, quarter = c(1, 2, 3))

## download '10-Q' and '10-K' filings filed by the firm with
## CIK = 1000180 in quarters 1,2, and 3 of the year 2006. These filings
## will be stored in the current working directory.
```



```
## End(Not run)
```

---

getMasterIndex	<i>Retrieves quarterly master index</i>
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## Description

getMasterIndex retrieves the quarterly master indexes from the US SEC site.

## Usage

```
getMasterIndex(filing.year)
```

## Arguments

filing.year      vector of integer containing filing years.

## Details

getMasterIndex function takes filing year as an input parameter from a user, downloads quarterly master indexes from the US SEC server <https://www.sec.gov/Archives/edgar/full-index/>. It then strips headers from the master index files, converts them into dataframe, and merges such quarterly dataframes into yearly dataframe, and stores them in Rda format. It has ability to download master indexes for multiple years based on the user input. This function creates a new directory 'Master Indexes' into current working directory to save these Rda Master Index. Please note, for all other functions in this package need to locate the same working directory to access these Rda master index files.

## Value

Function downloads quarterly master index files and stores them into the mentioned directory.

## Examples

```
## Not run:  
  
getMasterIndex(2006)  
## Downloads quarterly master index files for 2006 and  
stores into yearly 2006master.Rda file.  
  
getMasterIndex(c(2006, 2008))  
## Downloads quarterly master index files for 2006 and 2008, and  
stores into 2006master.Rda and 2008master.Rda files.  
  
## End(Not run)
```

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getMgmtDisc	<i>Retrieves management's discussion and analysis section</i>
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### Description

getMgmtDisc retrieves "Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations" section of firms from annual statements based on CIK numbers and filing year.

### Usage

```
getMgmtDisc(cik.no, filing.year)
```

### Arguments

cik.no	vector of firm CIK numbers in integer format. Suppress leading zeroes from CIKs.
filing.year	vector of four digit numeric year

### Details

getMgmtDisc function takes firm CIK numbers and filing years as input parameters from a user and provides "Item 7" section extracted from annual statements along with filing information. The function imports annual filings downloaded via [getFilings](#) function; otherwise, it downloads the filings which are not already been downloaded. It then reads the downloaded statements, cleans HTML tags, and parse the contents. It creates a new directory with name "MD&A section text" in the current working directory and saves scrapped "Item 7" sections in this directory. It considers "10-K", "10-K405", "10KSB", and "10KSB40" form types as annual statements.

### Value

Function saves scrapped "Item 7" section from annual filings in "MD&A section text" directory present in the working directory. The output dataframe contains information on CIK number, company name, date of filing, and accession number.

### Examples

```
## Not run:  
  
output <- getMgmtDisc(cik.no = c(1000180, 38079), filing.year = 2005)  
  
## saves scrapped "Item 7" section from 10-K filings for CIKs in  
## "MD&A section text" directory present in the working directory.  
## Also, it provides filing information in the output dataframe.  
  
output <- getMgmtDisc(cik.no = c(1000180, 38079),  
                     filing.year = c(2005, 2006))  
  
## End(Not run)
```

---

getSentiment	<i>Provides sentiment measures of EDGAR filings</i>
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### Description

getSentiment computes sentiment measures of EDGAR filings

### Usage

```
getSentiment(cik.no, form.type, filing.year)
```

### Arguments

cik.no	vector of CIK number of firms in integer format. Suppress leading zeroes from CIKs. Keep cik.no = 'ALL' if needs to download for all CIKs.
form.type	character vector containing form type to be downloaded. form.type = 'ALL' if need to download all forms.
filing.year	vector of four digit numeric year

### Details

getSentiment function takes CIK(s), form type(s), and year(s) as input parameters. The function first imports available downloaded filings in local working directory 'Edgar filings' created by [getFilings](#) function; otherwise, it downloads the filings which is not already been downloaded. It then reads the filings, cleans the filings, and computes the sentiment measures. The function returns a dataframe with filing information, and sentiment measures.

### Value

Function returns dataframe containing CIK number, company name, date of filing, accession number, and various sentiment measures. This function takes the help of Loughran-McDonald (L&M) sentiment dictionaries (<https://sraf.nd.edu/textual-analysis/resources/>) to compute sentiment measures of a EDGAR filing. Following are the definitions of the text characteristics and the sentiment measures:

file.size = Total number of words in the filing. It does not consider stop words.

char.count = Total number of characters in the filing. It does not consider stop words.

complex.word.count = Total number of complex words in filing. A word is count as a complex word if contains vowels(a, e, i, o, u) more than three times. It does not consider stop words.

lm.dictionary.count = The number of words that occur in the L&M master dictionary.

lm.negative.count = The number of L&M Financial-Negative words in the filing.

lm.positive.count = The number of L&M Financial-Positive words in the filing.

lm.strong.modal.count = The number of L&M Financial-Strong Modal words in the filing.

lm.moderate.modal.count = The number of L&M Financial-Moderate Modal words in the filing.

lm.weak.modal.count = The number of L&M Financial-Weak Modal words in the filing.

lm.uncertainty.count = The number of L&M Financial-Uncertainty words in the filing.

lm.litigious.count = The number of L&M Financial-Litigious words in the filing.

harvard.negative.count = Number of words in the filing. that occur in the Harvard General Inquirer Negative word list, as defined by L&M.

### Examples

```
## Not run:

senti.df <- getSentiment(cik.no = c('1000180', '38079'),
                        form.type = '10-K', filing.year = 2006)

## Returns dataframe with sentiment measures of firms with CIKs
1000180 and 38079 filed in year 2006 for form type '10-K'.

senti.df <- getSentiment(cik.no = '38079', form.type = c('10-K', '10-Q'),
                        filing.year = c(2005, 2006))

## End(Not run)
```

---

LMMasterDictionary      *Loughran and McDonald Sentiment Master Dictionary*

---

### Description

The data contains sentiments word lists.

### Details

The sentiment categories are: negative, positive, uncertainty, litigious, modal, and Harvard IV. Modal words are flagged as 1, 2 or 3, with 1 = Strong Modal, 2 = Moderate Modal, and 3 = Weak Modal.

### Source

Website: <https://sraf.nd.edu/textual-analysis/resources/>

### References

Tim Loughran and Bill McDonald, 2011, When is a Liability not a Liability? Textual Analysis, Dictionaries, and 10-Ks, *Journal of Finance*, 66:1, 35-65.

Andriy Bodnaruk, Tim Loughran and Bill McDonald, 2015, Using 10-K Text to Gauge Financial Constraints, *Journal of Financial and Quantitative Analysis*, 50:4, 1-24.

Tim Loughran and Bill McDonald, 2016, Textual Analysis in Accounting and Finance: A Survey, *Journal of Accounting Research*, 54:4,1187-1230.

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searchFilings	<i>Search EDGAR filings for specific words</i>
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## Description

searchFilings Search EDGAR filings for specific words

## Usage

```
searchFilings(cik.no, form.type, filing.year, word.list)
```

## Arguments

cik.no	vector of CIK number of firms in integer format. Suppress leading zeroes from CIKs. Keep cik.no = 'ALL' if needs to download for all CIK's.
form.type	character vector containing form type to be downloaded. form.type = 'ALL' if need to download all forms.
filing.year	vector of four digit numeric year
word.list	vector of words to search in the filing

## Details

searchFilings function takes search word vector, CIK(s), form type(s), and year(s) as input parameters. The function first imports available downloaded filings in local working directory 'Edgar filings' created by [getFilings](#) function; otherwise, it downloads the filings which is not already been downloaded. It then reads the filings, cleans the filings, and search for the input words. The function returns a dataframe with filing information, size of the filing, and the number of word hits.

## Value

Function returns dataframe containing filing information, size of the filing, and the number of word hits based on the input phrases. Following are the definitions of some important variables:

file.size = Total number of words in the filing. It does not consider stop words. nword.hits = Number of total hits found in the filing based on the search word list.

## Examples

```
## Not run:  
  
word.list = c('derivative','hedging','currency forwards','currency futures')  
output <- searchFilings(cik.no = c('1000180', '38079'),  
                        form.type = c("10-K", "10-K405","10KSB", "10KSB40"),  
                        filing.year = c(2005, 2006), word.list)  
  
## End(Not run)
```

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