Package 'FactSum'

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Type Package

Title Calculate the factorial of a large integer.

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Author Xu Liu

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Description Calculate the factorial of a large integer, which mey be much greater than the maximum memery of any data type.

License GPL (>= 2)

Depends R (>= 3.2.0)

Repository GitHub

NeedsCompilation yes

Encoding UTF-8

Archs i386, x64

R topics documented:

`FactSum-package` *Calculate the factorial of a large integer.*

Description

Calculate the factorial of a large integer, which mey be much greater than the maximum memery of any data type.

Details

Package:	FactSum
Type:	Package
Version:	1.0.1
Date:	2019-03-16
License:	GPL (>= 2)

`fact` *Calculate the factorial of a large integer.*

Description

Calculate the factorial of a large integer, which mey be much greater than the maximum memory of any data type. FactSum implements dramatically fast. It takes only 0.45 seconds to cumpute $10000!$ (it approximates $2.8E{+}35660$), and 0.98 seconds to compute $10000!$ and `sum=1!+2!+3!+...+10000!` simultaneously. It takes only one minute to cumpute $100000!$ (it approximates $2.8E+456574$), and less than two minutes to compute $100000!$ and `sum=1!+2!+3!+...+100000!` simultaneously.

Usage

```
fact(n,is.sum=FALSE)
```

Arguments

`n`	A non negative integer.
`is.sum`	Logical indicating that fact out sum of all factorial, that is $\sum_{i=1}^{n} i!$, if is.sum=TRUE, and not if is.sum=FALSE. Default is FALSE.

Value

`fact`	The factorial of n, which is a string.
`len_fact`	The digit of factorial of n, which is a integer.
`fact_sum`	The sumation of factorial of n, that is $\sum_{i=1}^{n} i!$, if is.sum=TRUE, which is a string.
`len_fact`	The digit of $\sum_{i=1}^{n} i!$, which is a integer.

Author(s)

Xu Liu

Examples

```
#Example 1
fit <- fact(10)
print(fit$fact,quote=FALSE)
fit$len_fact

#Example 2
fit_sum <- fact(20,1)
print(fit$fact,quote=FALSE)
fit$len_fact

print(fit$fact_sum,quote=FALSE)
fit$len_sum
```

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