

# Package ‘CheckDigit’

January 20, 2025

**Title** Calculate and Verify Check Digits

**Version** 1.0.0

**Description** Check digits are used like file hashes to verify that a number has been transcribed accurately. The functions provided by this package help to calculate and verify check digits according to various algorithms.

**License** GPL (>= 3)

**URL** <https://fascinatingfingers.gitlab.io/checkdigit>,  
<https://gitlab.com/fascinatingfingers/checkdigit>

**BugReports** <https://gitlab.com/fascinatingfingers/checkdigit/-/issues>

**Suggests** spelling, testthat

**Encoding** UTF-8

**Language** en-US

**RoxygenNote** 7.1.2

**NeedsCompilation** no

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**Repository** CRAN

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AppendCheckDigit      *Append a check digit to a value*

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### Description

Append a check digit to a value

### Usage

AppendCheckDigit(x, method)

### Arguments

x                      character vector of values requiring a check digit  
 method                a character value naming the check digit algorithm to use

### Value

character vector similar to x but with a check digit appended to each value

### Examples

```
AppendCheckDigit("1234", "Verhoeff") # 12340
```

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verhoeff                *Verhoeff algorithm implementation*

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### Description

The Verhoeff algorithm is appropriate for numerical data and detects all single-digit substitutions (x to y) and adjacent digit transpositions (xy to yx). In addition, the Verhoeff check digit can detect most twin errors (xx to yy), jump twin errors (xyx to zyz), jump transpositions (xyz to zyx), and phonetic errors ("sixty" to "sixteen").

### Usage

AppendCheckDigit.Verhoeff(x)

VerifyCheckDigit.Verhoeff(x)

### Arguments

x                      character vector of values

**References**

Verhoeff, J. "Error Detecting Decimal Codes", Mathematical Centre Tract 29, The Mathematical Centre, Amsterdam, 1969.

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VerifyCheckDigit      *Verify whether a value ends with a valid check digit*

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**Description**

Verify whether a value ends with a valid check digit

**Usage**

```
VerifyCheckDigit(x, method)
```

**Arguments**

x	character vector of values to verify
method	a character value naming the check digit algorithm to use

**Value**

logical vector the same length as x

**Examples**

```
VerifyCheckDigit("12340", "Verhoeff") # TRUE
VerifyCheckDigit("21340", "Verhoeff") # FALSE
VerifyCheckDigit("13240", "Verhoeff") # FALSE
VerifyCheckDigit("12430", "Verhoeff") # FALSE
VerifyCheckDigit("12304", "Verhoeff") # FALSE
```

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