# Package 'CheckDigit'

May 7, 2026

**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

**Author** Justin Brantley [aut, cre]

**Maintainer** Justin Brantley <fascinatingfingers@icloud.com>

**Repository** CRAN

**Date/Publication** 2022-04-24 14:30:17 UTC

## Contents

## AppendCheckDigit *Append a check digit to a value*

### 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
```

## verhoeff *Verhoeff algorithm implementation*

### 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.

---

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

---

## 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
```

# Index