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suffixarray





package

standard library

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Overview

Package `suffixarray` implements substring search in logarithmic time using an in-memory suffix array.

Example use:

```
// create index for some data
index := suffixarray.New(data)

// lookup byte slice s
offsets1 := index.Lookup(s, -1) // the list of all indices where s occurs in data
offsets2 := index.Lookup(s, 3)  // the list of at most 3 indices where s occurs in data
```

Index

`type Index`

```
func New(data []byte) *Index
func (x *Index) Bytes() []byte
func (x *Index) FindAllIndex(r *regexp.Regexp, n int) (result [][]int)
func (x *Index) Lookup(s []byte, n int) (result []int)
func (x *Index) Read(r io.Reader) error
func (x *Index) Write(w io.Writer) error
```

Examples

`Index.Lookup`

Constants

This section is empty.

Variables

This section is empty.

Functions

This section is empty.

Types

type **Index**

```
type Index struct {  
    // contains filtered or unexported fields  
}
```

Index implements a suffix array for fast substring search.

func **New**

```
func New(data []byte) *Index
```

New creates a new Index for data. Index creation time is $O(N)$ for $N = \text{len}(\text{data})$.

func (*Index) **Bytes**

```
func (x *Index) Bytes() []byte
```

Bytes returns the data over which the index was created. It must not be modified.

func (*Index) **FindAllIndex**

```
func (x *Index) FindAllIndex(r *regexp.Regexp, n int) (result [][]int)
```

FindAllIndex returns a sorted list of non-overlapping matches of the regular expression *r*, where a match is a pair of indices specifying the matched slice of *x.Bytes()*. If *n* < 0, all matches are returned in successive order. Otherwise, at most *n* matches are returned and they may not be successive. The result is nil if there are no matches, or if *n* == 0.

func (*Index) **Lookup**

```
func (x *Index) Lookup(s []byte, n int) (result []int)
```

Lookup returns an unsorted list of at most *n* indices where the byte string *s* occurs in the indexed data. If *n* < 0, all occurrences are returned. The result is nil if *s* is empty, *s* is not found, or *n* == 0. Lookup time is

$O(\log(N) \cdot \text{len}(s) + \text{len}(\text{result}))$ where N is the size of the indexed data.

► [Example](#)

func (*Index) [Read](#)

```
func (x *Index) Read(r io.Reader) error
```

Read reads the index from r into x ; x must not be nil.

func (*Index) [Write](#)

```
func (x *Index) Write(w io.Writer) error
```

Write writes the index x to w .



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