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zchee / cgo.md
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cgo convert list

◁▷ **cgo.md**

See also, http://libraryofalexandria.io/cgo/

Using Go `cgo`

`cgo` has a lot of trap.
but Not "C" pkg also directory in `$GOROOT/src` . IDE's(vim) Goto command not works.

So, Here collect materials.

cgo compiling file extension

C

`.c` , `.s` , `.S`

C++

`.cc` , `.cpp` , `.cxx`

Header

Any `.h` , `.hh` , `.hpp` , `.hxx` files will not be compiled separately.
but, if these header files are changed, the C and C++ files will be recompiled.

cgo environment variable

Building Go

`CC` , `CXX` , `CC_FOR_TARGET` , `CXX_FOR_TARGET`

Compiling `.go`

`CGO_CFLAGS` , `CGO_CPPFLAGS` , `CGO_CXXFLAGS` , `CGO_LDFLAGS`

cgo convert C-Go string type

string

```go
// Go string to C string; result must be freed with C.free
func C.CString(string) *C.char

// C string to Go string
func C.GoString(*C.char) string

// C string, length to Go string
func C.GoStringN(*C.char, C.int) string

// C pointer, length to Go []byte
func C.GoBytes(unsafe.Pointer, C.int) []byte
```

C Types in Go

char

```go
type C.char
type C.schar (signed char)
type C.uchar (unsigned char)
```

short

```go
type C.short
type C.ushort (unsigned short)
```

int

```go
type C.int
type C.uint (unsigned int)
```

long

```go
type C.long
type C.ulong (unsigned long)
```

longlong

```go
type C.longlong (long long)
type C.ulonglong (unsigned long long)
```

float

```go
type C.float
```

double

```
type C.double
```

Directly access struct type

As in `C.struct_stat`

struct

```
type C.struct_***
```

union

```
type C.union_***
```

enum

```
type C.enum_***
```

void*

See also https://golang.org/pkg/unsafe/

```
func unsafe.Pointer() *ArbitraryType
```

muratsplat commented 21 days ago

good stuf