

ctypes

C

DLL

2.5

C Type	Python Type	ctypes Type
bool	bool(1)	c_bool
char	1-character string	c_char
wchar_t	1-character Unicode string	c_wchar
char	int/long	c_byte
unsigned char	int/long	c_ubyte
short	int/long	c_short
unsigned short	int/long	c_ushort
int	int/long	c_int
size_t	int/long	c_size_t
unsigned int	int/long	c_uint
long	int/long	c_long
unsigned long	int/long	c_ulong
long long	int/long	c_longlong
unsigned long long	int/long	c_ulonglong
float	float	c_float
double	float	c_double
long double	float	c_longdouble
char * (NULL terminated)	string or none	c_char_p
wchar_t * (NULL terminated)	unicode or none	c_wchar_p
void *	int/long or none	c_void_p

```
from ctypes import *  
  
print c_ushort(-5)  
  
seitz = c_char_p("loves the python")  
print seitz  
print seitz.value
```

```
c_ushort(65531)  
c_char_p('loves the python')  
loves the python
```

,

value

```
seitz = c_char_p("loves the python")
print seitz.value
```

char *, wchar_t *, void *가 POINTER
 int * x NULL

```
x = POINTER(c_int)()
```

POINTER contents

C/C++

```
functionname( byref(parameter) )
```

,

, Structure, Union

C

```
struct beer_recipe
{
    int amt_barley;
    int amt_water;
};
```

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```
class beer_recipe(Structure):
    _fields_ = [
        ("amt_barley", c_int),
        ("amt_water", c_int),
    ]
```

C

```
union {
    long barley_long;
    int barley_int;
```

```
char barley_char[8];
}barley_amount;
```

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```
class barley_amount(Union):
    _fields_ = [
        ("barley_long", c_long),
        ("barley_int", c_int),
        ("barley_char", c_char * 8),
    ]
```

```
class test(Structure):
    _fields_ = [
        ("a", c_ushort),
        ("b", c_ushort)
    ]

s = POINTER(test)
s = s(test())

# s = POINTER(test)(test())

s.contents.a = 1
s.contents.b = 2
```

DLL

3가

cdll()

cdecl export

windll()

stdcall export

oledll()

windll() HRESULT COM export

msvcrt.dll printf .

```
from ctypes import *
msvcrt = cdll.msvcrt
message_string = "Hello world!\n"
msvcrt.printf("Testing: %s", message_string)
```

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