

## Restriction on pointer types: char\*, int\*, void\*

dt@VPCF11M1E /2019/c++11/exercises/08\_pointers\_arrays\_and\_references/02

```
$ make build
```

```
g++ -std=c++11 -Wall -Wextra -I./include
```

```
./src/pointer_restrictions_on_this_system.cpp ./solution/main.cc
```

```
-o ./make/run.o
```

```
./src/pointer_restrictions_on_this_system.cpp: In function void PointerRestrictionsOnThisSys
```

```
./src/pointer_restrictions_on_this_system.cpp:8:5: error: static assertion
```

```
failed: int* cannot be casted to char* on this system
```

```
static_assert((sizeof(char*) < sizeof(int*)), "int* cannot be casted  
to char* on this system");
```

```
^
```

```
./src/pointer_restrictions_on_this_system.cpp:12:5: error: static
```

```
assertion failed: void* cannot be casted to void* on this system
```

```
static_assert((sizeof(char*) < sizeof(void*)), "void* cannot be casted  
to void* on this system");
```

```
^
```

```
./src/pointer_restrictions_on_this_system.cpp:16:5: error: static
```

```
assertion failed: void* cannot be casted to int*
```

```
static_assert((sizeof(int*) < sizeof(void*)), "void* cannot be casted  
to int*");
```

```
^
```

```
makefile:26: recipe for target 'build' failed
```

```
make: *** [build] Error 1
```

It's clear that pointers are homogeneous, that is if  $P$  is a pointer of type  $T$  then  $P$  can be assigned to pointer  $Q$  if and only if the type of  $Q$  is  $T$ .

This cannot be stated in every cases when assigning a `void*` to a pointer of type  $T$ .