C - Structures, Typecasting, Function Pointers

CS238P: Operating Systems - Fall '18

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void func(char *s, char *t) {
    while (*s++ = *t++);
}
Couple of points on pointers to strings

- Depending on how you declare the strings, you may or may not be able to update them in the same way.
Couple of points on pointers to strings

- Depending on how you declare the strings, you may or may not be able to update them in the same way.
- How they are declared affects how they are stored.
Structures
Due to alignment requirements for different objects, there may be unnamed "holes" in a structure. For instance, if a char is one byte and an int is four bytes, the structure

```c
struct {
    char c;
    int i;
};
```

might well require eight bytes, not five. The sizeof operator returns the proper value.
• Change the type of the object for a single operation
• Change the type of the object for a single operation
• Pass generic objects
A more real structs example
A cool tip for initializing arrays
Designated Initializers\(^1\) Initialize the array elements 0x3A, 0x45, 0x46 only \(^2\)

\(^1\)http://gcc.gnu.org/onlinedocs/gcc-4.0.4/gcc/Designated-Inits.html
\(^2\)sheet 77, xv6-rev9.pdf
Function Pointers
Dynamic registration with Function Pointers

- Declare a struct to hold function pointers \(^3\)

\(^3\) sheet 40 xv6-rev9.pdf
\(^4\) sheet 82 xv6-rev9.pdf
• Declare a struct to hold function pointers
  \(^3\)

• Register function pointer  \(^4\)

\(^3\) sheet 40 xv6-rev9.pdf
\(^4\) sheet 82 xv6-rev9.pdf
Thank You