

# C: `stdio.h`, `varargs`, `unistd.h`

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CS 2130: Computer Systems and Organization 1

April 26, 2023

# Announcements

- Homework 10 due Monday at 11pm
  - Limited number of submissions, test your code before submitting
- Review session in lab next week
- Final Exam: May 4, 7-10pm, Chem 402

`stdio.h` manual page

# printf

```
int printf(const char *format, ...);  
int fprintf(FILE *stream, const char *format, ...);
```

Could you write `printf`?

# printf

```
int printf(const char *format, ...);
```

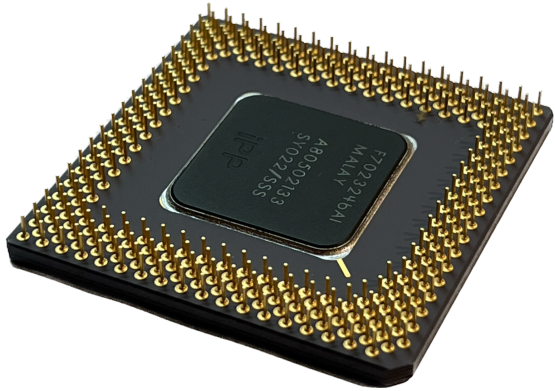
```
printf("hi: %s and %d\n", mystr, myint);
```

The diagram shows the function call `printf("hi: %s and %d\n", mystr, myint);` with several annotations:

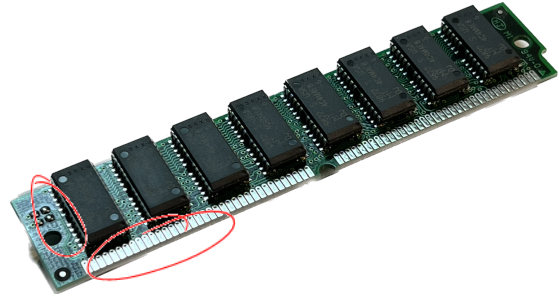
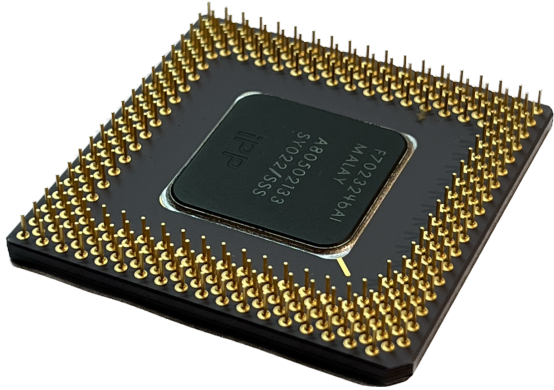
- A red circle highlights the string `"hi: %s and %d\n"`.
- A blue circle highlights the format specifier `%s`.
- A green circle highlights the format specifier `%d`.
- An orange horizontal line with arrows at both ends spans from the `%s` to the `%d`.
- A blue curved arrow starts from the `%s` and points to the `mystr` argument.
- A green curved arrow starts from the `%d` and points to the `myint` argument.
- The number `10` is written in orange above the `%d`.

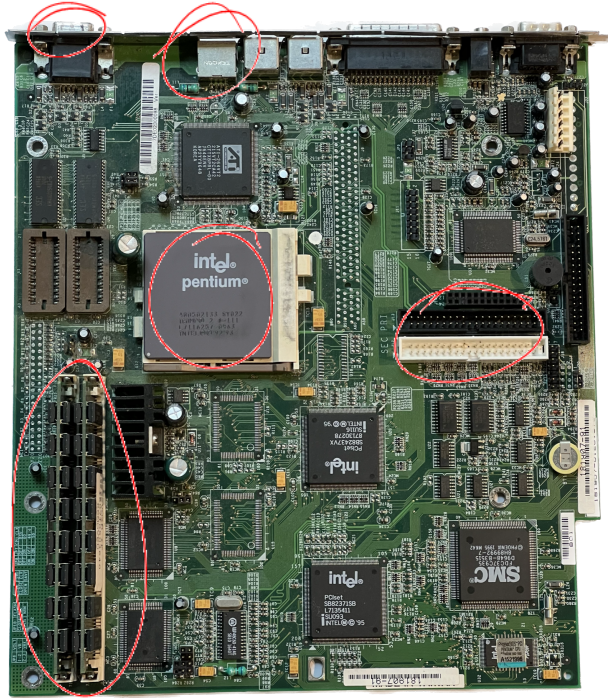
more (str → FILE\*)

Backing up...

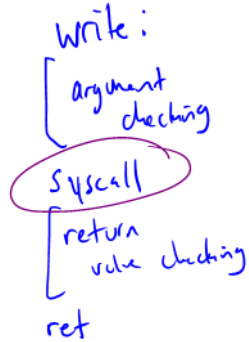
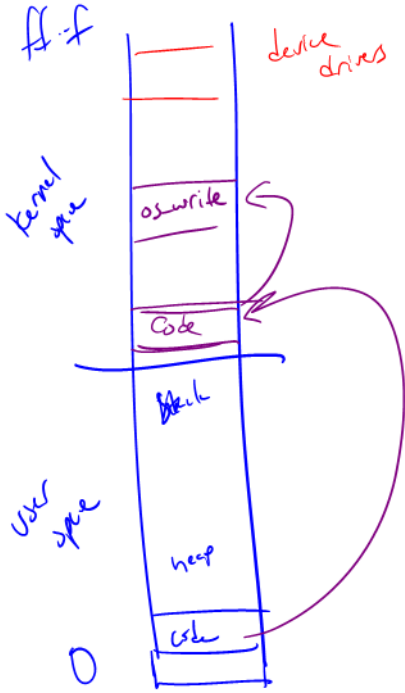








# Syscalls



`write:`

- Argument checking
- `syscall`
- Return value checking
- `ret`

Using write



