CSC209 Week 10 Notes

Hyungmo Gu

May 17, 2020

C Pre-Processor 1 of 1

- Macros
  - Starts with '# define'
  - Can also be an expression with parameters

```
1    #define WITH_TAX(x) ((x) * 1.08) //<- NOTE: there is no space
   between WITH_TAX and (x)
2
```

    - IMPORTANT: Always surround macro variables with parenthesis

```
1    #define WITH_TAX(x) (x * 1.08)
2
3    int main() {
4        double purchase = 9.99;
5        double purchase2 = 12.49;
6
7        printf("%f\n", WITH_TAX(purchase + purchase2)); //<-
   will result in purchase + purchase2 * 1.08.
8    }
9
```

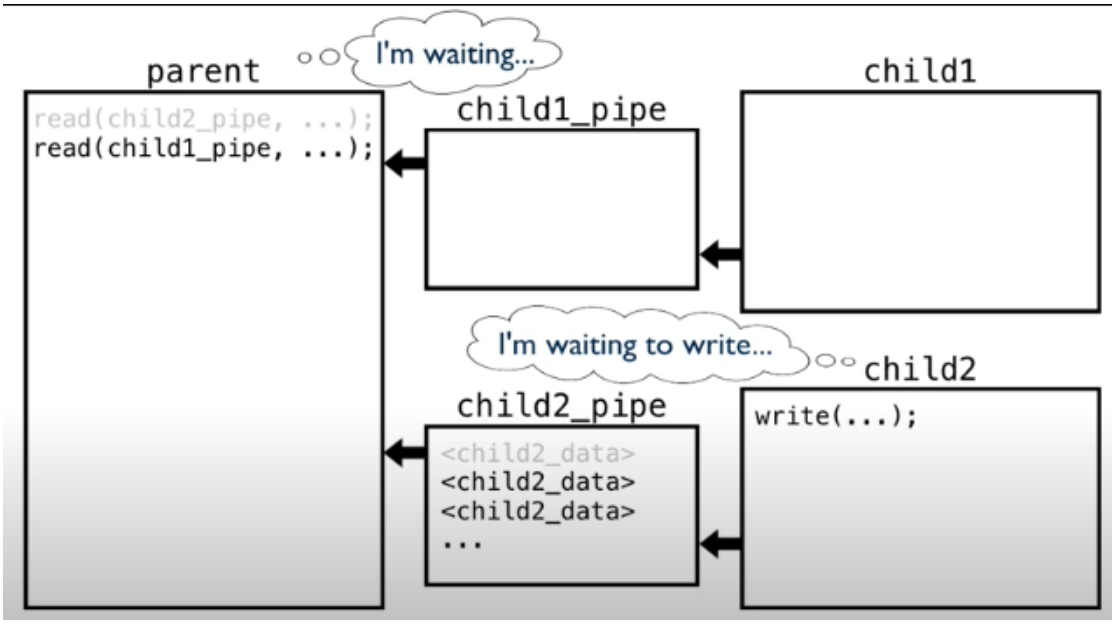
Listing 1: macros_example_1.c

Select 1 of 2

- The problem with Blocking Reads
  - *read* waits until a pipe is non-empty, and reads one at a time
  - suppose there are multiple-children with *write*, then there may be
    1. One child with empty pipe

2. One child with filling contents, i.e. 'hello', 'hi there!'

– Parent waits for empty pipe, causing blocking



– *select* ← solution

* monitors file descriptors, waiting until one or more of the file descriptors become ready

Select 2 of 2

- Select
  - monitors file descriptors, waiting until one or more of the file descriptors become ready
  - **Syntax:** int select(numfd, read_fds, NULL, NULL, NULL);
    * **numfd:** specifies how many descriptors should be examined
    * **read_fds:** points to a bit mask that specifies the file descriptors to check for reading
    * No need to worry about NULL for now :).
  - The following macros are used
    * **FD_SET(*fd*, *&fdset*):** Sets the bit for the file descriptor *fd* in the file descriptor set *fdset*
    * **FD_ZERO (*&fdset*):** Initializes the file descriptor set *fdset* to have zero bits

    - **FD_ISSET(*fd*, *&fdset*):** Returns a non-zero value if the bit for the file descriptor *fd* is set in the file descriptor set pointed by *fdset*, and 0 otherwise

–