

# ECS 36A, April 21, 2023

# Announcements

- If you are getting errors for the extra credit, try downloading the wrapper program again; it had a bug in it, which I fixed on Wednesday
- Slides and such will be up on Canvas sometime today
- There will be a full, detailed exposition of *ptrstew.c* on Canvas in that upload
- This weekend, I will put up information about the midterm, which is on May 5 (two weeks from today)

# Command-Line Arguments

- Command is loopy 5 9
- Declaration of main function:

```
int main(int argc, char *argv[])
```

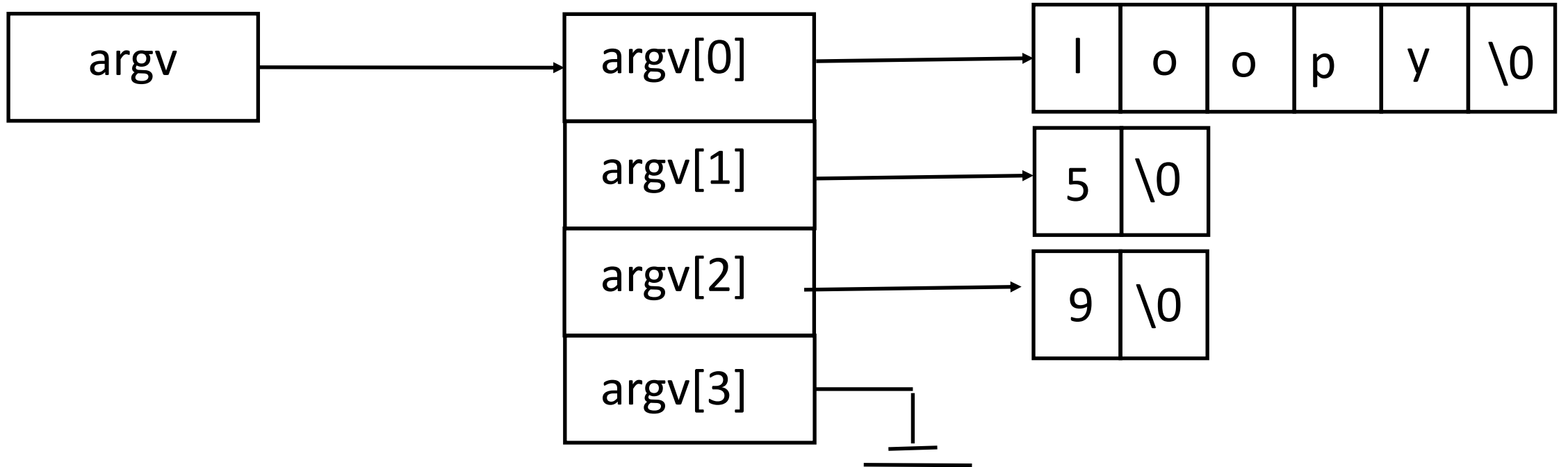
- Sometimes written as:

```
int main(int argc, char **argv)
```

number of arguments  
(command is argument 0)

list of arguments  
(in array of char pointers)

# Visually:



# Passing Strings as Arguments

- Function prototype:

```
strfunc(char *, char *)
```

- Actual call (x, y are strings):

```
strfunc(x, y)
```

- Function definition header:

```
strfunc(char *first, char *second) {
```

# String Idioms

- These mean the same thing when used as function arguments:

```
char *x  
char x[]
```

# Common Ways to “Walk Down” Strings

```
char c = "hello";  
char *cp = &c;  
  
while (*cp != '\0')  
    printf("%c", *cp++);  
printf("\n");
```

# Another Idiom: Copy a String

```
char c = "hello";  
char cd[100];  
char *cp = &c;  
char *cpd = &cd;  
  
while (*cd++ = *c++)  
    ;
```



# But . . .

- It's better to use *strcpy* or *strncpy*
  - Because these may be faster, using assembly language optimizations
  - Also they are easier to understand!

# Types of Characters

```
#include <ctype.h>
```

isprint(ch) check for printing characters

isspace(ch) check for space (for example, space, '\n', '\t')

isalpha(ch) check for (capital or small) letter

isdigit(ch) check for a digit ('0' ... '9')

isalnum(ch) same as isalpha(ch) || isdigit(ch)

- Note: ch is a character (technically, EOF or unsigned char)
- Returns 0 if above check fails, non-zero if not

# Converting Chars to Numbers

- Convert printing char to integer
- $ch - '0'$
- Convert integer (between 0 and 9 inclusive) to printing char
- $ch + '0'$
- Find out which number a letter of the alphabet is
- $ch - 'a'$  (for lower case),  $ch - 'A'$  (for upper case)
- Find out which letter of the alphabet a number between 0 and 25 inclusive) is
- $ch + 'a'$  (for lower case),  $ch + 'A'$  (for upper case)