Programming with C I

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Command line arguments

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

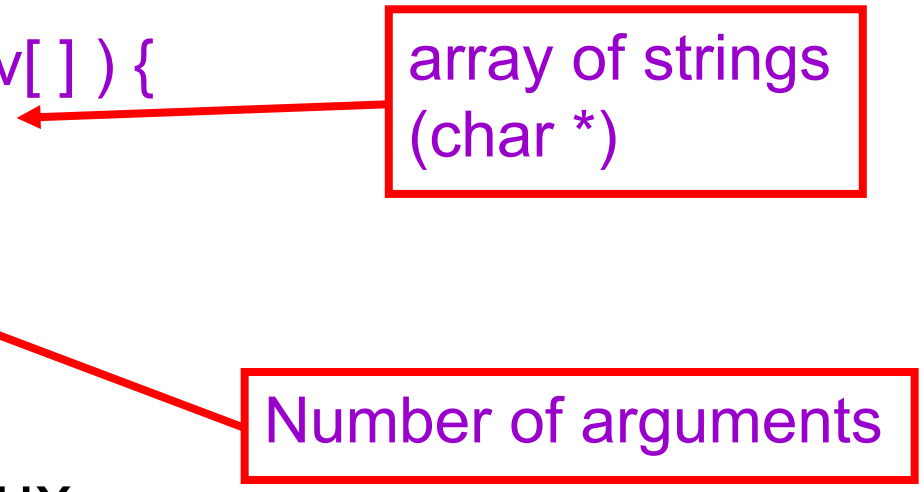
…

- argc is argument count
- argv is argument vector (array) of **strings**
- To convert string x to int a:
  - int a = atoi(x);
  - int a = strtol(x, NULL, 10) (last arg is base)
- To convert string x to double b:
  - double b = atof(x);
  - double b = strtof(x, NULL)

Passing parameters to C (1)

- Often a user wants to pass parameters into the program from the command line
- This is accomplished in C using argc and argv
  - For example:

```
int main (int argc, char *argv[ ] ) {
   /*  Statements go here */
}
```



- Call this program from Linux

```
progname arg1 arg2 arg3
```

Passing parameters to C (2)

```
#include <stdio.h>
int main(int argc, char *argv[]) {
    int count;
    printf ("Program name: %s\n", argv [0]);
    if (argc > 1) {
            for (count=1; count<argc; count++)
              printf ("Argument %d: %s\n",count,argv[count]);
     }
   else
            printf("No command line arguments entered.\n");
    return 0;
}
```

Passing parameters to C (3)

- Suppose we compiled the previous program to the executable file cmd
- ./cmd first "second arg" 3 4 > cmd.out
- cmd.out contains the following lines:

```
Program name: ./cmd
Argument 1: first
Argument 2: second arg
Argument 3: 3
Argument 4: 4
```

Passing arguments to C (4)

```
#include <stdio.h>

int main(int argc, char *argv[]) {
    FILE *fp;
    char k[100];
    if (argc != 2) {
        printf("Usage: %s filename\n",
     argv[0]);
        return 0;
    }
    if ((fp = fopen(argv[1], "r")) ==
     NULL) {
        printf("Cannot open file!\n");
        return 1;
    }
```

```
while (fgets(k, sizeof(k), fp) !=
     NULL) {
        printf("%s", k);
    }
    fclose(fp);
    return 0;
}
```

- Generally a main function of a C program for checks whether the arguments are valid and prints simple help information.

THE END

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