

C Language Concepts



CS 231

Day 3

main function

- ✿ *main()* //main1.c generates warning
- ✿ *void main(void)* // main2.c generates warning
- ✿ *int main()* //main3.c no warnings on compile
- ✿ *int main(int argc, char * argv[])* // main4.c command line arguments
- ✿ *main5.c* shows using ***environ* to access environment variables
- ✿ *int main(int argc, char * argv[], char * env[])* // access environment variables

A Complete Program: prime.c

Do prime factorization

Show #define

*Show correlation between
pointers and arrays*

Strings in C

- ✿ *Implement as array of char*
- ✿ *Last character must be '\0'*
- ✿ *String functions found in strings.h*

String functions

- ✿ *Concatenation:*
 - ✿ *`char *strcat(char *dest, const char *src)`*
 - ✿ *`char *strncat(char *dest, const char *src, size_t n)`*
- ✿ *Comparison returns negative if $s1 < s2$; positive if $s1 > s2$; 0 on equal*
 - ✿ *`int strcmp(const char *s1, const char *s2)`*
 - ✿ *`int strncmp(const char *s1, const char *s2, size_t n)`*

Strings Continued

- ✿ *Copy a String, strcpy and strncpy*
 - ✿ *char *strcpy(char *dest, const char *src)*
- ✿ *Search for a character in string (null char included), return null pointer if char not found*
 - ✿ *char *strchr(const char *s, int c) - first successful*
 - ✿ *char *strrchr(const char *s, int c) - last successful*

Other String Functions

- ✿ *strspn* to span characters in string (skip over) in argument set
- ✿ *strcspn* to span characters in string not included in argument set
- ✿ *strtok* to tokenize a string
- ✿ *atof*, *atoi*, *atol* - convert string to number

Example String Code

- ✿ *seaShells.c* also contains int pointers
- ✿ *stringArray.c*