Thursday Operating Systems Tutorial Group 6

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GitHub: https://github.com/Bradon-Lodwick/OS-Work

Conceptual Questions

1.)

- read
  - r or rb
- write
  - w or wb
- read and write
  - r+ or rb+ or r+b
- append
  - a+ or ab+ or a+b

2.)

- dynamic memory uses the heap
  - allocated at startup
  - reclaimed when the process exits
- the stack is used as scratch space for thread execution
  - always LIFO, to make sure that processes are executed in the correct order
  - allows for simple tracking of which block to use in the stack, as it just involves moving a pointer
  - stacks are attached to a thread, so when threads exit their stack is reclaimed in memory

3.)

- Pointers are variables that hold the address of another variable as their value
- Pointers in C are defined as:
  - type *name;
  - type is the type of the variable the pointer is pointing too
  - name is the name of the pointer
- to set the value a pointer points to, use name = &var
  - name is the pointer, var is the variable address to have name point to
  - to get the address, you can now access the value of name

4.)

- malloc allocates memory of the given size and gives a
- to use malloc, you can initialize arrays of variables, such as characters, by initializing with:
  - var = (char *) malloc(15)

    - this would allocate 15 character bytes at the returned address
- you can free the memory at a point by calling free(pointer), where pointer is the pointer variable pointing to the memory location you want to clear

5.)

- malloc takes 1 argument (number of bytes), calloc takes 2 arguments (number of blocks, and the size of the blocks)
- malloc returns a pointer to the given number of bytes of uninitialized storage, or NULL if it cannot allocate the given number of bytes in storage
- calloc returns a pointer to enough free space for an array of n objects of the specified size, or NULL

Bonus

Git is like a filing cabinet that stores records that are constantly changing. Each new record is a git commit, and the filing cabinet is GitHub.