

Naming (III)

A Dynamic Memory Allocation Example for Project 3

- Q: If the size of an array is unknown till runtime, how do you create an array in C?
- A: Dynamic memory allocation (malloc); Programmers control the lifetime of this type of memory
- Example: A Dog struct including name and age. But the name and age of an instance is read from the command line.
- Remember to free the allocated memory before the end of the program.

```
//  
// DogStruct.c  
//  
//  
  
#include <stdio.h>  
#include <stdlib.h>  
#include <string.h>  
  
typedef struct {  
    char *name;  
    int age;  
} Dog;  
  
Dog *create_dog (char *nm, int a) {  
    Dog *dog = (Dog*)malloc(sizeof(Dog));  
    dog->name = (char*)malloc(sizeof(*nm));  
  
    strcpy(dog->name, nm);  
    dog->age = a;  
  
    return dog;  
}
```