

C Programming (W9)



Welcome!!

Please check attendance individually.
(Mobile App)

Things to do today

- 01** | Notice & Key concept :
- 02** | Lecture Notes (Ch.8 ~ 9)
- Functions & Variables
- 03** | Homework :

Course evaluation

Changed!!!

Course evaluation	Distribution of points	Note
Attendance	20 points	-1 point per absence
Codyyssey	30 points	10 essential problems: 3 point per a problem (Q.2 ~ 11)
	Extra points	9 optional problems: 0.5 point per a problem (Q.12 ~ 20)
	10 points	Contribution (Peer evaluation & review)
Practice & Quiz	20 points	Practice: Every class (2 ~ 5 practices) * Email including C-section, ID, Name - send an email by the same day with screen capture of results (No photo) Quiz: In class, depends on schedule * Mac: Command (⌘) + Shift + 4 * Windows key + Shift + S
Final exam	20 points	Open book (A4, 2 pages of summary)
Total	100	* if complete Codyyssey 80 problems: A+

* Grades are determined based on relative evaluation.

Function

Material Producer(Farmer) - Language Developer

Wholesaler - Library Developer

Retailer - Framework Developer

Chef - Application Developer (Student - Program Learner) ➡ C : C Language + Standard Lib (header + object)
Python : Python Language + Standard Lib + Framework

In the case of cooking, it is divided by the degree of completion of the ingredients, and the usage of each ingredient is distributed to the upper user.

In the case of the program, it is divided by the task scope, and the usage of each function is distributed to the upper user.

Library

File Type	Extension	Purpose	Linking Type	Usage
Object File	.o	Contains compiled code for a single source file.	Static or Dynamic	Intermediate file created during compilation, linked to create executable.
Static Library	.lib (Windows) .a (Unix)	Collection of object files packaged together.	Static	Linked into executable at compile time; no external dependencies at runtime.
Shared Library	.so (Unix)	Dynamic library loaded at runtime.	Dynamic	Shared among multiple programs, linked at runtime.
Dynamic Library	.dll (Windows)	Similar to .so, used on Windows for dynamic linking.	Dynamic	Loaded at runtime by programs that use the library.

Ex) codespace => nm ch7.o

Function

재료 생산자 - 언어개발자

도매상 - 라이브러리 개발자

소매상 - 프레임워크 개발자

요리사 - 어플리케이션 개발자 (학생 - 프로그램 학습자) ➡ C : C Language + Standard Lib

Python : Python Language + Standard Lib + Framework

요리의 경우 재료의 완성도로 구분되며, 각 재료의 사용법을 상위 사용자에게 배포한다.

프로그램의 경우 Task 범위로 구분되며, 각 함수의 사용법을 상위 사용자에게 배포한다.

Structure (Student grading system at school)

Well-Organized functions

(Re-use @ Elementary, middle, and high schools, all schools)

Functions for specific purposes:

1. Student characteristics get/set functions

- set / get name
- set / get ID
- set / get gender

2. Grade-related gete/set functions

- get math class score
- get C class score

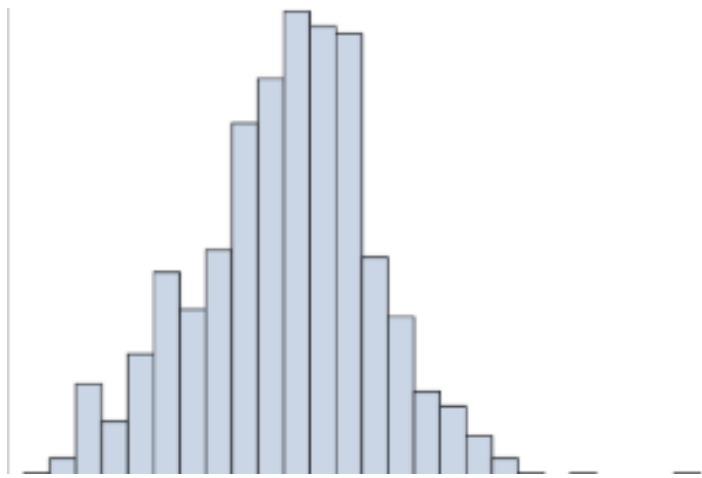
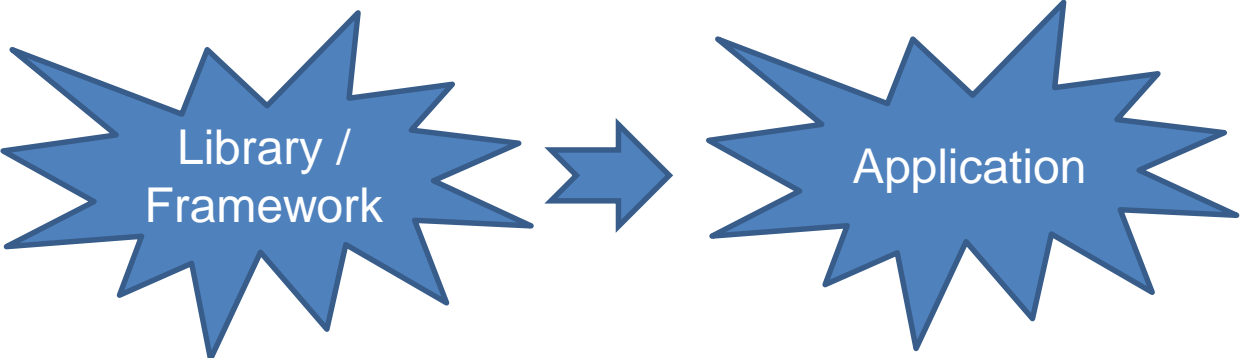
3. Statistics-related functions

- get total score
- get average
- get average of the entire class
- get average by school

Common Features
ID, Name, Gender, Score etc



Student ID	Name	Gender	Age	English Grade	Math Grade	Science Grade
1	John Doe	Male	15	A	B	B+
2	Jane Smith	Female	16	B+	A-	A
3	Tom Brown	Male	14	C	C	C+
4	Sarah Lee	Female	15	A-	B+	A-
5	Alex Wang	Male	16	A+	A+	A+



Header files: Std Lib

C:\MinGW64\include

C:\MingW64\x86_64-w64-mingw32\include

C:\my_project_folder\include

Object file : gcc -c main.c -o main.o

Executable file : gcc main.o -o main

1. Student characteristics get/set functions (student.h, student.o)

int setStudentInfo(char* name, char* ID, char* gender);

char* getName(int id); / char* getID(char*); / char* getGender(char*);

2. Grade-related get/set functions (grade.h, grade.o)

int setScore(char* name, char* class, int score); / int getScore(char* name, char* class);

3. Statistics-related functions (statistics.h, statistics.o)

int getTotalScore(char* name);

int getAverage(char* name);

int getGradeRanking(char* name);

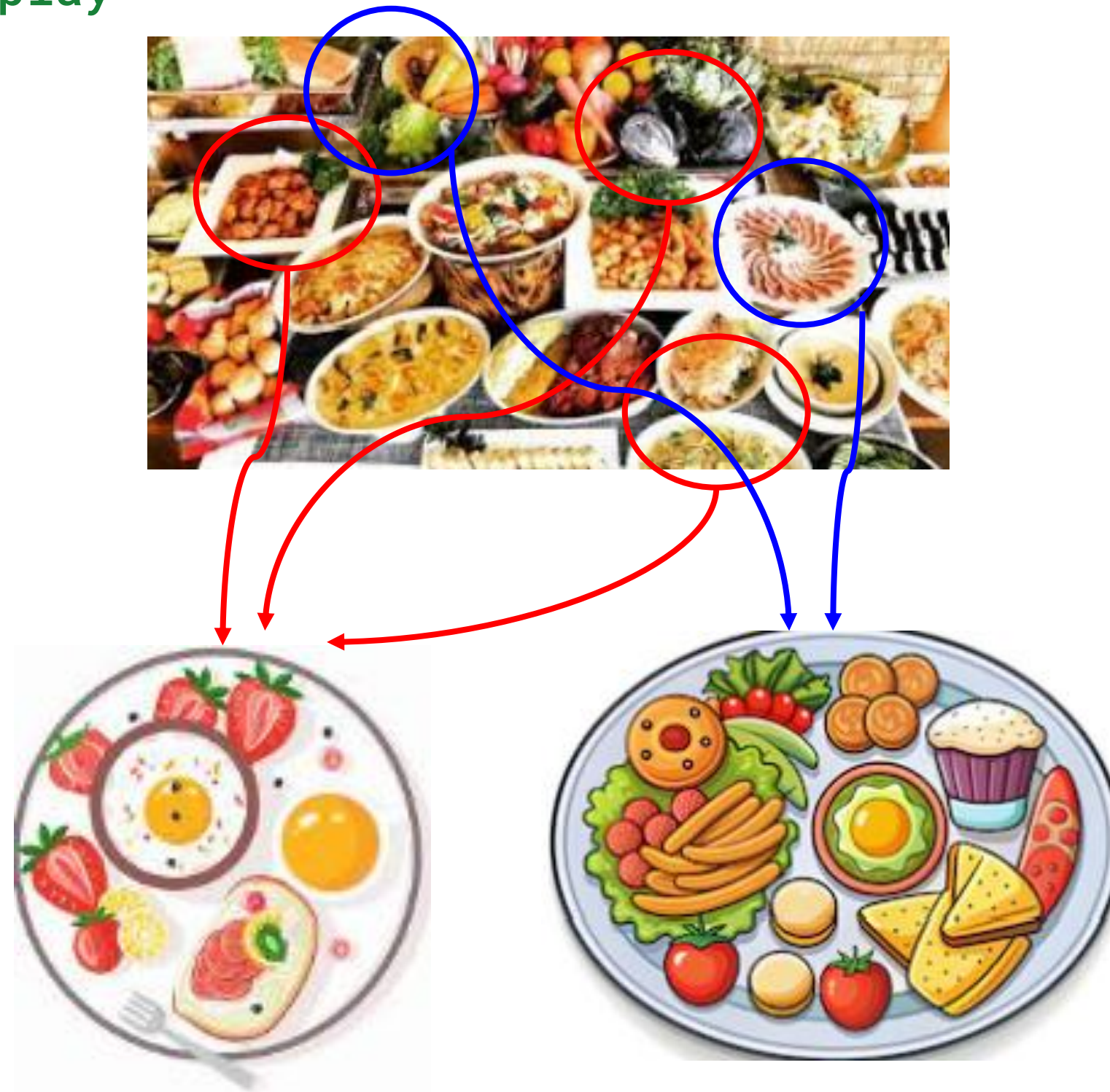
See you next week!

DO NOT miss the classes



Efficient cooking method

Unorganized food display



The importance of a well-organized food

Buffet

