C Programming (W4)

Welcome!!

Please check attendance individually.

(Mobile App)

Things to do today

01 Ch.1 ~ Ch.3

02 Debugging in VSC

03 Variables & Data types

04

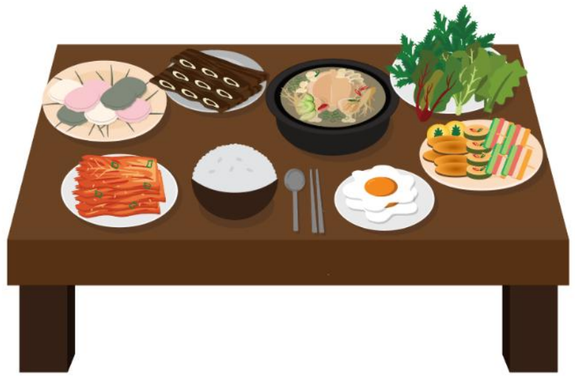
Debugging

- Practice with debugger
- VSC (launch.json, tasks.json)

  - github.com/prof-kweon/2025-Fall-C-Language/blob/main/Reference/lauch.json
  - github.com/prof-kweon/2025-Fall-C-Language/blob/main/Reference/tasks.json

Variables & Data types

- Variable: A memory space where **data** can be stored. (bowl)
  - The bowl can hold rice, side dishes, and water.



- Variable creation and rules and features
  - Reserved words (keywords) cannot be used (for, if, else,...)
  - Spaces cannot be included
  - Only English letters and underscores (_) can be used as the first letter (number x)
  - Special characters other than underscores (_) cannot be used
  - Case sensitive

Variables & Data types

- Data types: To use memory space efficiently, data types of appropriate shape and size must be used.

Data Type	Description	Size (bytes)	Range	Example
int	Integer data type for whole numbers.	4	-2,147,483,648 to 2,147,483,647	int num = 10;
short	Short integer data type. Smaller range than int.	2	-32,768 to 32,767	short num = 100;
long	Long integer data type, typically used for larger numbers.	8	-9,223,372,036,854,775,808 to 9,223,372,036,854,775,807	long num = 1000000L;
long long	Extended long integer data type, used for even larger numbers.	8	-9,223,372,036,854,775,808 to 9,223,372,036,854,775,807	long long num = 1234567890123LL;
unsigned int	Unsigned integer, stores only positive values.	4	0 to 4,294,967,295	unsigned int num = 10U;
unsigned short	Unsigned short integer, stores only positive values.	2	0 to 65,535	unsigned short num = 100U;
unsigned long	Unsigned long integer, stores only positive values.	8	0 to 18,446,744,073,709,551,615	unsigned long num = 1000000UL;
unsigned long long	Unsigned long long integer, stores only positive values.	8	0 to 18,446,744,073,709,551,615	unsigned long long num = 1234567890123ULL;
char	Character data type, used to store single characters.	1	-128 to 127 (signed) or 0 to 255 (unsigned)	char letter = 'A';
unsigned char	Unsigned character, stores only positive character values (0 to 255).	1	0 to 255	unsigned char letter = 65U;
float	Single-precision floating point number.	4	±1.5 × 10^−45 to ±3.4 × 10^38	float num = 3.14f;
double	Double-precision floating point number, provides higher precision than float.	8	±5.0 × 10^−324 to ±1.7 × 10^308	double num = 3.141592;
long double	Extended precision floating point number (depends on the system).	10 or 16	Varies by system, typically ±3.4 × 10^−4932 to ±1.1 × 10^4932	long double num = 3.141592653589793;
_Bool	Boolean type (from C99 standard), stores true or false.	1	0 (false), 1 (true)	_Bool isTrue = 1;
void	Void type, used to indicate the absence of data or return type for functions.	N/A	N/A	void function() {}

See you next week!
DO NOT miss the classes