C Programming (W5)

Welcome!!

Please check attendance individually.

(Mobile App)

Things to do today

01

CLI (Tab, Arrow), Folder & file, File extension, EnvDev(Path) Handling Input

02

Codyssey structure (Check homework)
Codyssey C1-P2 : Evaluation (Discussion)
How to evaluate the source code in github

03

Lecture Notes (Ch.4 ~ 8 or 9)

04

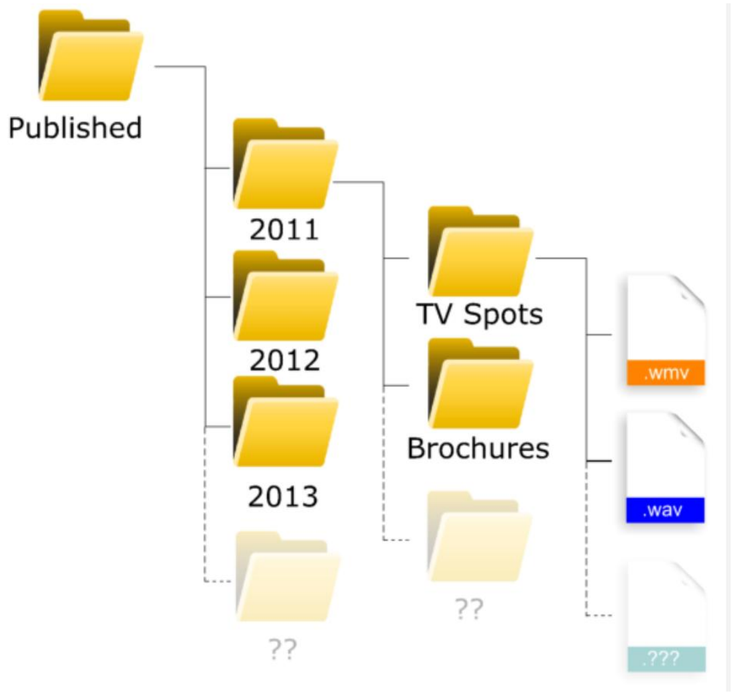
Codyssey Requirements : C1-P3, P4(Discussion)
Homework

- Use chrome browser
- Change computer’s time to korean time.
- Be careful of spaces in the textbook (pdf)
  (e.g. printf (“ ”) >> printf(“”))

In a PC, a **shell** is a user interface that allows you to interact with the operating system. It can be **command-line-based** (CLI) or **graphical** (GUI):

1. **Command-Line Shell (CLI)** – This is a text-based interface where users enter commands to perform tasks. Examples:
    - **Bash** (Linux, macOS)
    - **PowerShell** (Windows)
    - **Command Prompt (cmd.exe)** (Windows) - doskey /history
    - **Zsh, Fish** (Unix-like systems)
2. **Graphical Shell (GUI)** – This provides a visual interface with icons, windows, and menus. Examples:
    - **Windows Explorer** (Windows shell)
    - **GNOME/KDE/Xfce** (Linux desktop environments)
    - **macOS Finder** (Mac shell)

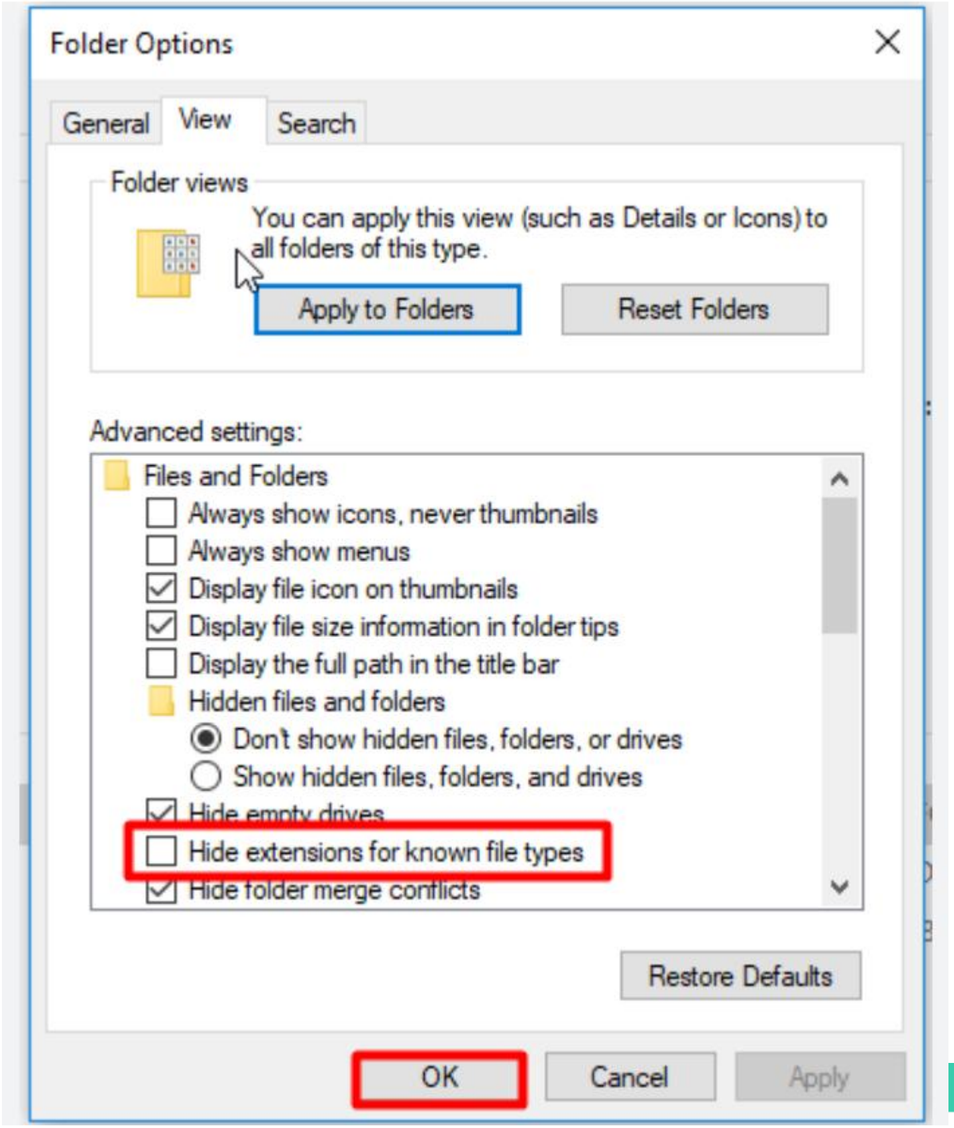
Folder & File



- src
  - main
    - java
      - com
        - vod
          - main
            - BaseClass.java
            - CONSTANTS.java
            - TestLogger.java
          - retryTests
            - ResetRetryAnalyzer.java
            - Retry.java
            - RetryListener.java
            - TestListener.java
  - test
    - java
      - com
        - vod
          - test
    - resources
      - charles_assertions
- pom.xml
- README.md
- ww.testng.main.xml
- ww.testng.parallel.xml

File extension

Name	Date modified	Type
wikiHow Sample PDF.pdf	10/5/2006 1:04 AM	Adobe Acrobat D...
Serial.cru	8/22/2020 11:33 AM	CRU File
Sample.docx	12/16/2012 1:46 PM	Microsoft Word D...
Sales.xlsx	9/3/2017 2:59 AM	Microsoft Excel W...
Nikola Tesla1.docx	8/15/2020 7:17 AM	Microsoft Word D...
Nikola Tesla Biography2.docx	5/4/2017 5:32 PM	Microsoft Word D...
Nikola Tesla Biography.docx	10/16/2018 9:59 AM	Microsoft Word D...
Mortgage.xlsx	2/22/2015 4:26 PM	Microsoft Excel W...
Items.tsv.xlsx	5/2/2019 8:52 PM	Microsoft Excel W...
bookmark.htm	11/28/2020 8:13 PM	Chrome HTML Do...
Book2.xlsx	5/29/2017 7:53 AM	Microsoft Excel W...
Book1.xlsx	5/29/2017 7:52 AM	Microsoft Excel W...
816_sample_ppt.cru	8/15/2020 9:17 PM	CRU File
816.pptx	8/15/2020 6:29 AM	Microsoft PowerP...



Problem solving tips (std_input.c)

1. Determine what the input is
   - scanf, fgets, getchar, sscanf

Key Differences

Feature	scanf	fgets
Reads	Formatted input (e.g., int, float, single word)	Whole line including spaces
Stops At	Whitespace (space, tab, newline)	Newline or buffer limit
Buffer Overflow	Possible if input exceeds buffer size	Prevents buffer overflow
Newline Handling	Skips newline character	Stores newline if there is space

2. Determine what the output is

Step for homework (Review)

01 Read a problem in Codyssey (Specifically Implementation Task, Constraints)

02 Implement the solution of a problem in VSC
Run and make sure your solution satisfies implementation task & constraints

03 Upload your solution into your github.

04 Request the evaluation (30 minutes discussion) through Codyssey
Then participate the evaluation of classmate’s solution (30 minutes discussion)

Requirements list (C1-P2)

1. User Input
   - Prompt the user to enter the **current date** in the "yyyy-mm-dd" format.
   - Prompt the user to enter their **name**.

2. Processing the Input
   - Display the message **“The input has been processed successfully.”**
   - Ensure the entered values (name and date) are incorporated into the splash screen output.

3. Splash Screen Output
   - After processing, display the following splash screen format

```
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
[Magrathea ver 0.1]
Magrathea, where a shining planet is created in a wasteland with no grass,
a place where unseen potential is discovered and gems are polished by the hands of experts,
Welcome to Magrathea.
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
[User]: [name]                          [Execution Time]: [date]
================================================================================================
```

4. Bonus 1: Delay Before Display
   - After the input has been processed, **clear the screen after 3 seconds** and then display the splash screen.
   - Display a right-angled triangle and an inverted right-angled triangle made of * characters on the left and right edges of the splash screen.

Homework

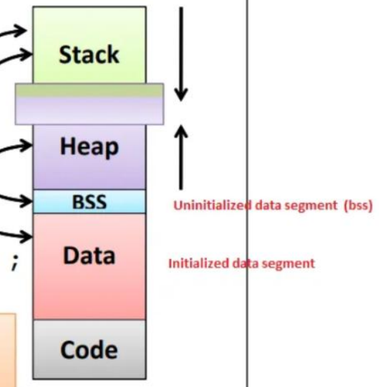
1. Finish Step 1, Course 1, Problem 3, 4

Progress : 002 > ch.4

See you next week!
DO NOT miss the classes

Memory layout of C program

```
int A;
int B=10;
main(){
  int Alocal;
  int *p;
  p=(int*)malloc(40);
}
```

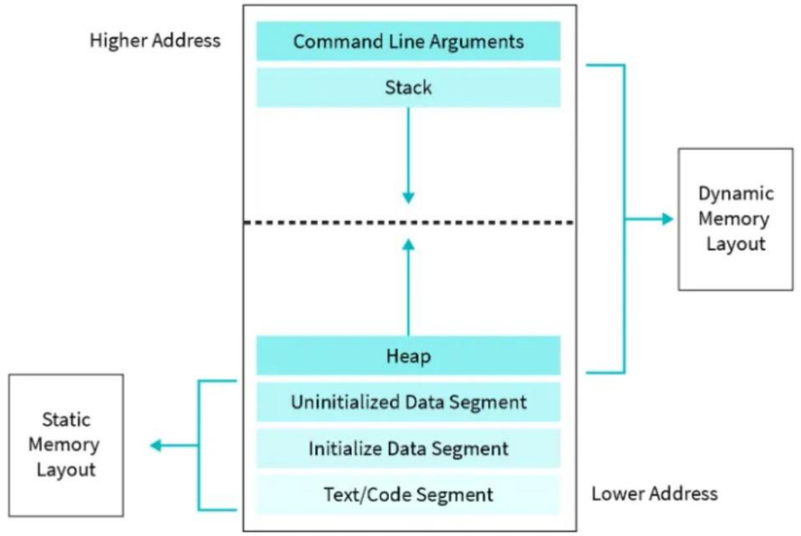


Uninitialized data segment (bss)

Initialized data segment

```
$gcc test.c
$size a.out
text    data    bss     dec     hex     filename
1200    544     8       1752    6d8     a.out
```

example of memory C layout



Memory Layout

```c
#include <stdio.h>

int globalOne;
int globalTwo;
int init1 = 1;

int main(){
    int a=0;
    int b=0;
    return 0;
}
```

```
PS D:\wahyu\c> gcc hello-world.c -o  hello-world
PS D:\wahyu\c>
```

compile the code

```
PS D:\wahyu\c> size .\hello-world.exe
   text    data     bss     dec     hex filename
  16880    1636     124   18640    48d0 .\hello-world.exe
```

inspect the code by using size command

Text segment (instruction code) = 16880 byte
Data = 1636 byte
Bss (Uninitialized data segment) = 124 byte
Dec (decimal) = text + data + bss = 18640 byte

Text segment (instruction code) : it's include our code instruction and constant
Data : data is for initialized global variable, from above code is int init1 = 1;
Bss : for uninitialized global variable, from above code is int globalOne;