C PROGRAMMING

PART Ⅰ

개발환경구축
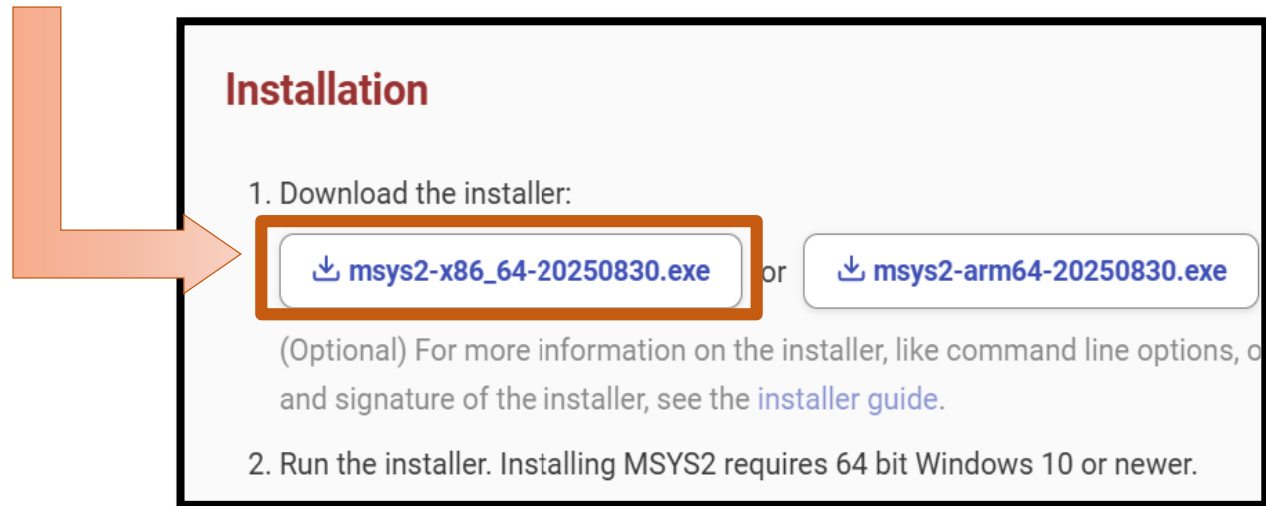
VSCODE – C 개발환경

VSCODE – C 개발환경

◆ MSYS 설치

- https://www.msys2.org

Installation

1. Download the installer:

[⬇ msys2-x86_64-20250830.exe] or [⬇ msys2-arm64-20250830.exe]

(Optional) For more information on the installer, like command line options, o
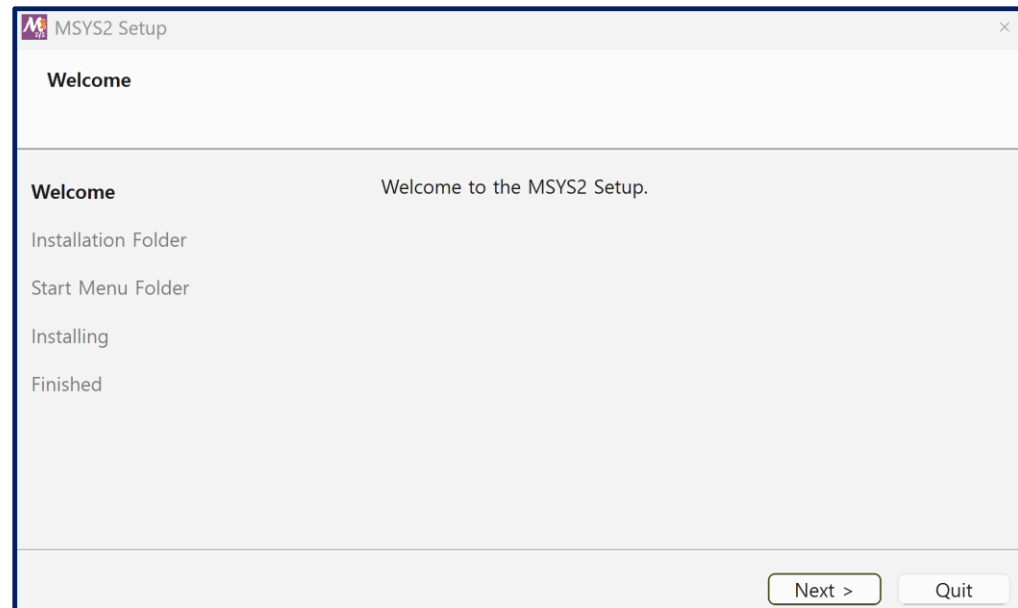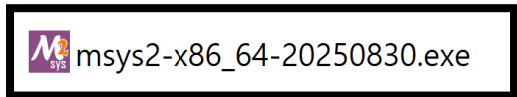and signature of the installer, see the installer guide.

2. Run the installer. Installing MSYS2 requires 64 bit Windows 10 or newer.

VSCODE – C 개발환경

◆ MSYS 설치

- 더블 클릭으로 실행

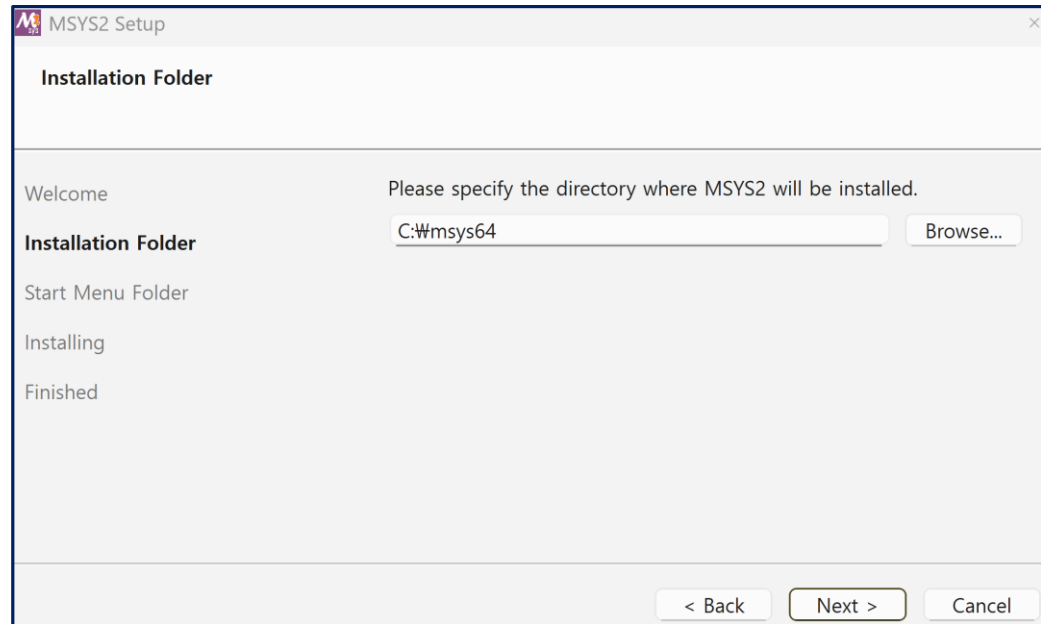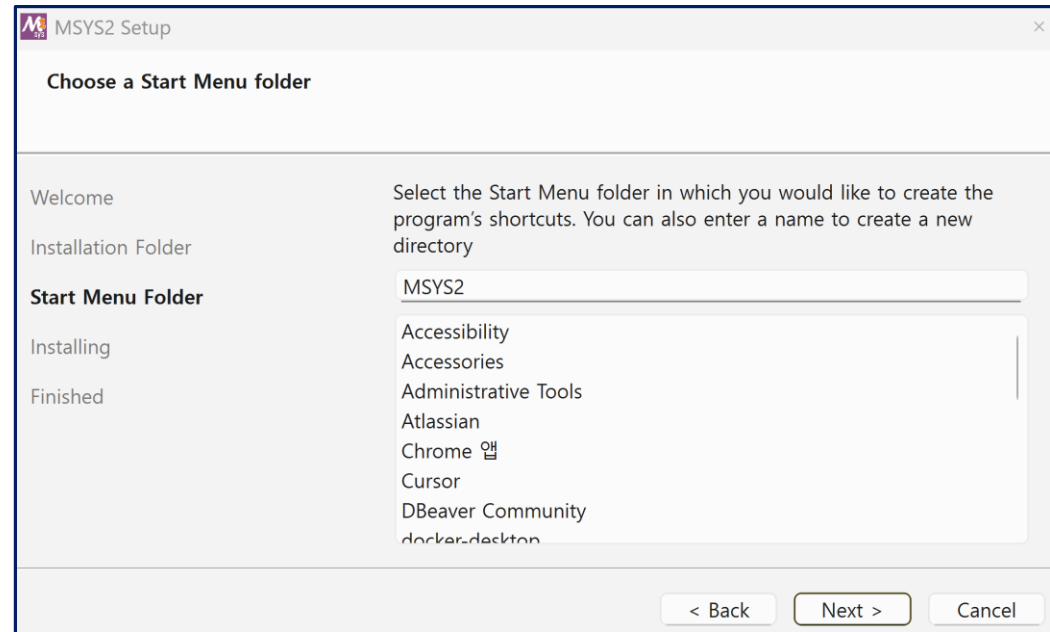# VSCODE – C 개발환경

◆ MSYS 설치

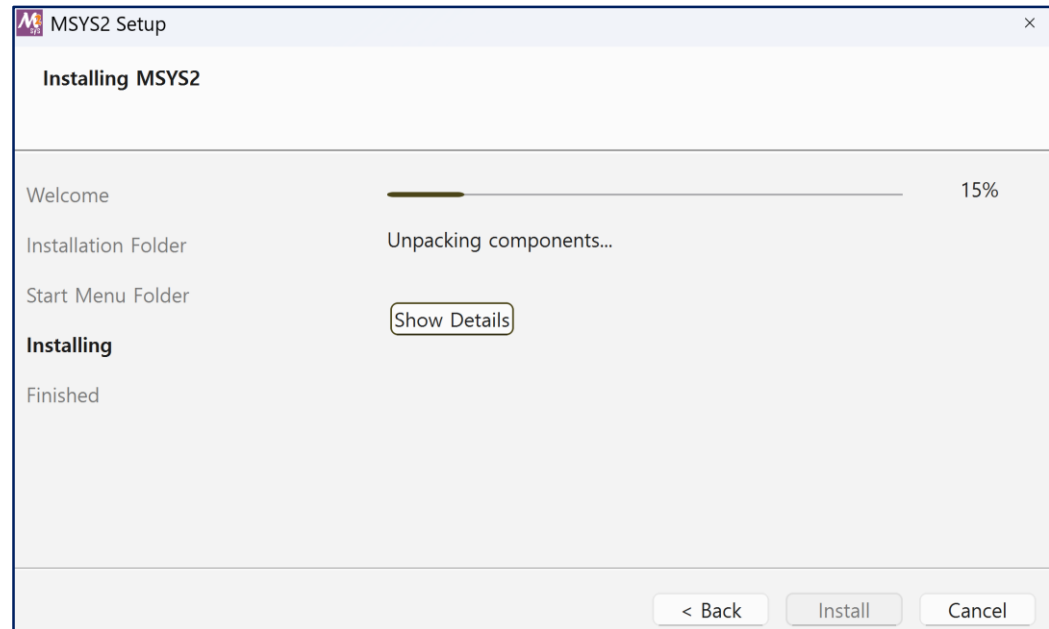- 설치 폴더 설정 : [기] **C:₩msys64**

◆ MSYS 설치

- Start Menu Folder 선택

◆ MSYS 설치

- 설치 진행
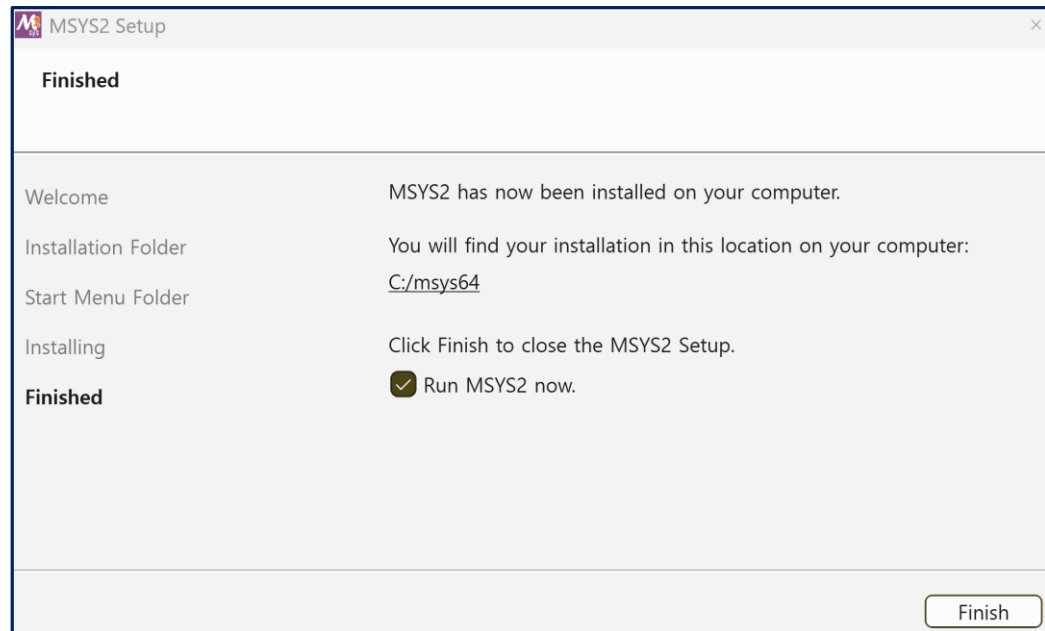
VSCODE – C 개발환경

◆ MSYS 설치

- 설치 완료

VSCODE – C 개발환경

◆ MSYS 설정

- 패키지 업데이트

  명령어 입력 : $ pacman –Syu   ➔ 설치 후 자동 종료

◆ MSYS 설정

- **컴파일 툴 설치**

  명령어 : **$ pacman -S --needed base-devel**

VSCODE – C 개발환경

◆ **MSYS 설정**

- **컴파일 툴 설치**

  명령어 : **$ pacman -S mingw-w64-ucrt-x86_64-gcc mingw-w64-ucrt-x86_64-gdb**

VSCODE – C 개발환경

◆ MSYS 설정

- 환경변수 PATH 추가

VSCODE – C 개발환경

◆ VSCODE 설정

- **VSCODE 터미널**

  - **gcc --version, gdb --version 확인**

  ```
  D:\KDT\KDT_9_VS>gcc --version
  gcc (Rev8, Built by MSYS2 project) 15.2.0
  Copyright (C) 2025 Free Software Foundation, Inc.
  This is free software; see the source for copying conditions.
  here is NO
  warranty; not even for MERCHANTABILITY or FITNESS FOR A PARTIC
  AR PURPOSE.


  D:\KDT\KDT_9_VS>gdb --version
  GNU gdb (GDB) 16.3
  Copyright (C) 2024 Free Software Foundation, Inc.
  License GPLv3+: GNU GPL version 3 or later <http://gnu.org/lic
  ses/gpl.html>
  This is free software: you are free to change and redistribute
  ```

VSCODE – C 개발환경

◆ **VSCODE 설정**

- **확장팩 설치**

  - **C/C++**

  - **C/C++ Extension Pack**

VSCODE – C 개발환경

◆ VSCODE 설정

- **Settings – 컴파일러 설정**

    - **C_Cpp.default.compilerPath ➔ MSYS2: C:\msys64\ucrt64\bin\gcc.exe**

```
{} settings.json  ×

> kwon > AppData > Roaming > Code > User > {} settings.json > ...
        "python.terminal.activateEnvInCurrentTerminal": true,
        "jupyter.enableExtendedPythonKernelCompletions": true,
        "python.languageServer": "Pylance",
        "jupyter.jediEnabled": false,
        "editor.quickSuggestions": {
        "other": true,
        "comments": false,
        "strings": true
        },
        "editor.fontSize": 18,
        "C_Cpp.default.compilerPath": "C:/msys64/ucrt64/bin/gcc.exe"
}
```

◆ VSCODE 테스트

- **구조**

  ```
  ∨ 🗂 MSYSC
    ∨ 🗂 .vscode
        {} launch.json
        {} tasks.json
    ∨ 🗂 EXAM
      ∨ 🗂 src
          C main.c
          ⚙ main.exe
  ```
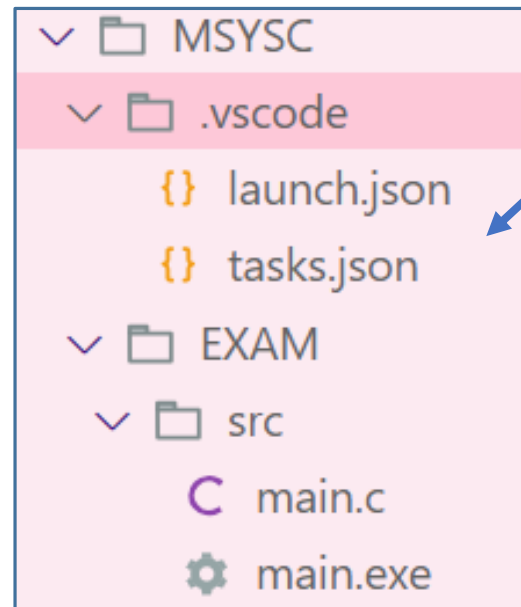
  VSCODE & C/C++
  연동 설정 파일들

VSCODE – C 개발환경

◆ VSCODE 테스트

- ▪ **main.c 코드 작성**

```c
#include <stdio.h>


int main(void){

    printf("Hello, World! ");

    return 0 ;

}
```

VSCODE – C 개발환경

◆ VSCODE 테스트

▪ **launch.json**

```
{
    "version": "0.2.0",
    "configurations": [
      {
        "name": "Debug (GDB)",
        "type": "cppdbg",
        "request": "launch",
        "program": "${workspaceFolder}/build/app.exe",
        "cwd": "${workspaceFolder}",
        "stopAtEntry": false,
        "externalConsole": true,
        "MIMode": "gdb",
        "miDebuggerPath": "C:/msys64/ucrt64/bin/gdb.exe",
        "setupCommands": [
          {
            "description": "Enable pretty-printing",
            "text": "-enable-pretty-printing",
            "ignoreFailures": true
          }
        ],
        "preLaunchTask": "gcc build"
      }
    ]
}
```

VSCODE – C 개발환경

◆ VSCODE 테스트

- **tasks.json**

```json
{
    "version": "2.0.0",
    "tasks": [
      {
        "label": "gcc build",
        "type": "shell",
        "command": "gcc",
        "args": [
          "-g",
          "-O0",
          "-Wall",
          "-Wextra",
          "-std=c17",
          "${workspaceFolder}/src/main.c",
          "-o",
          "${workspaceFolder}/build/app.exe"
        ],
        "options": {
          "env": {
            "PATH": "C:\\msys64\\ucrt64\\bin;${env:PATH}"
          }
        },
        "group": { "kind": "build", "isDefault": true },
        "problemMatcher": "$gcc"
      }
    ]
}
```

VSCODE – C 개발환경

◆ VSCODE 테스트

- **main.c 코드 실행**