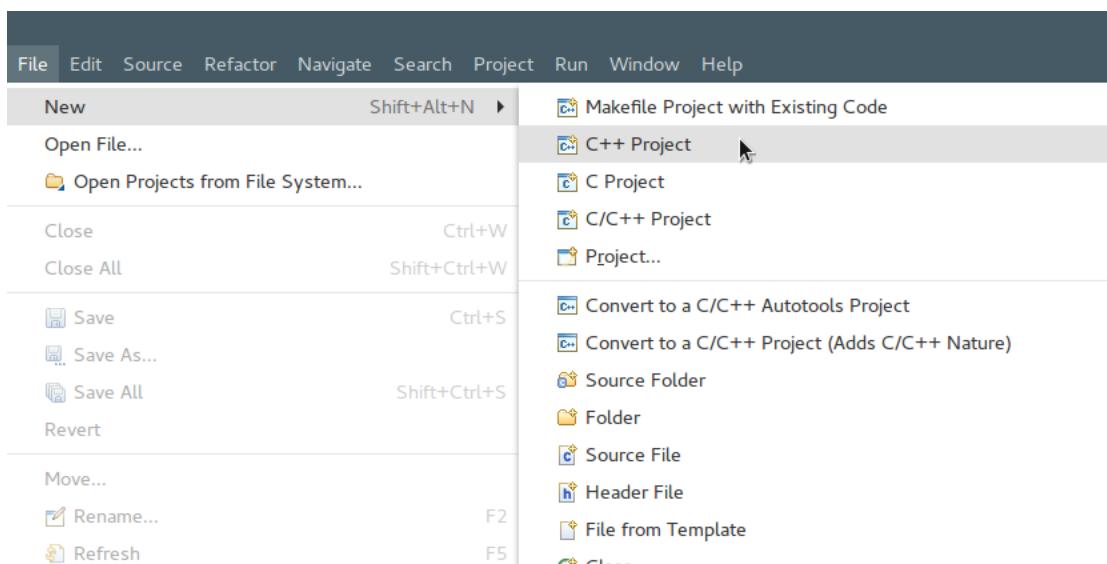


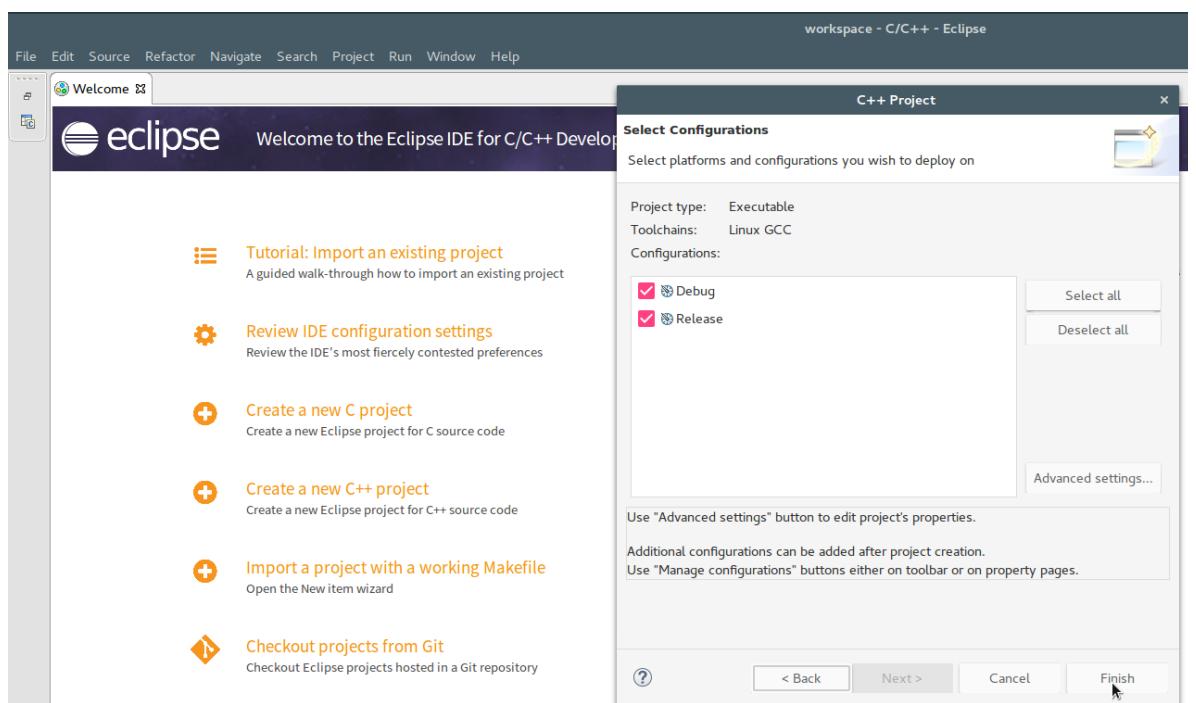
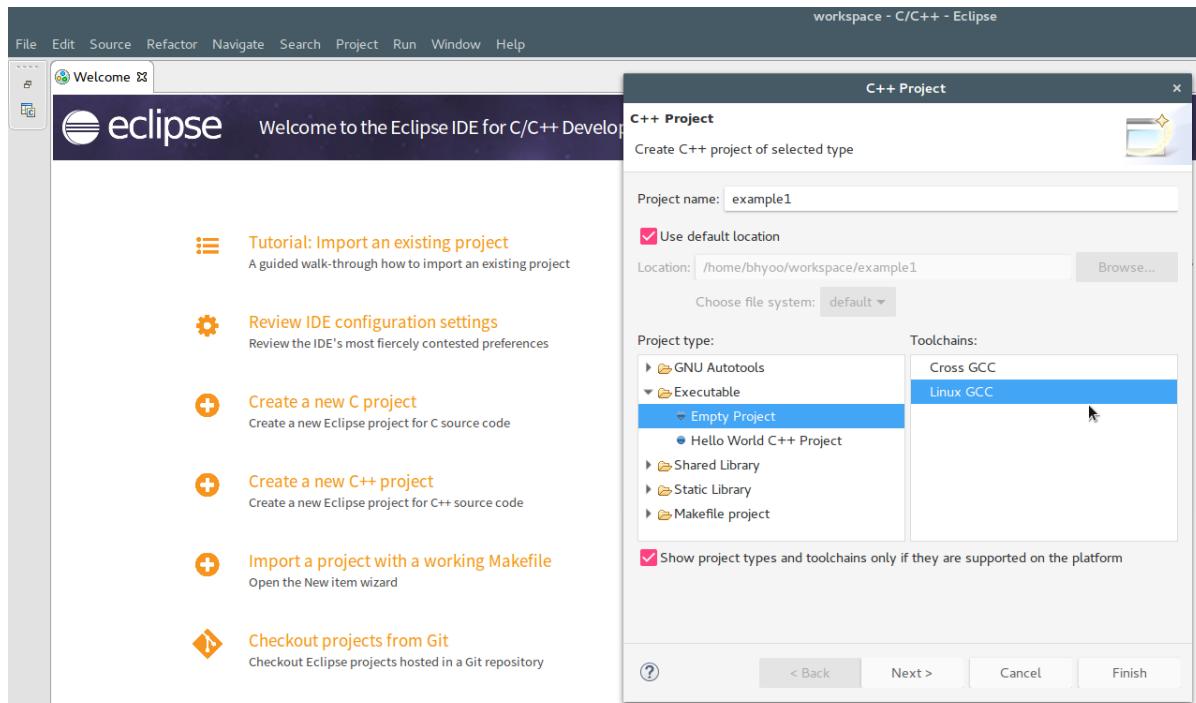
Week 1 : Introduction of Programming Environment

- ¬ C++ Programming Environment
- ¬ Eclipse for C++ Programming

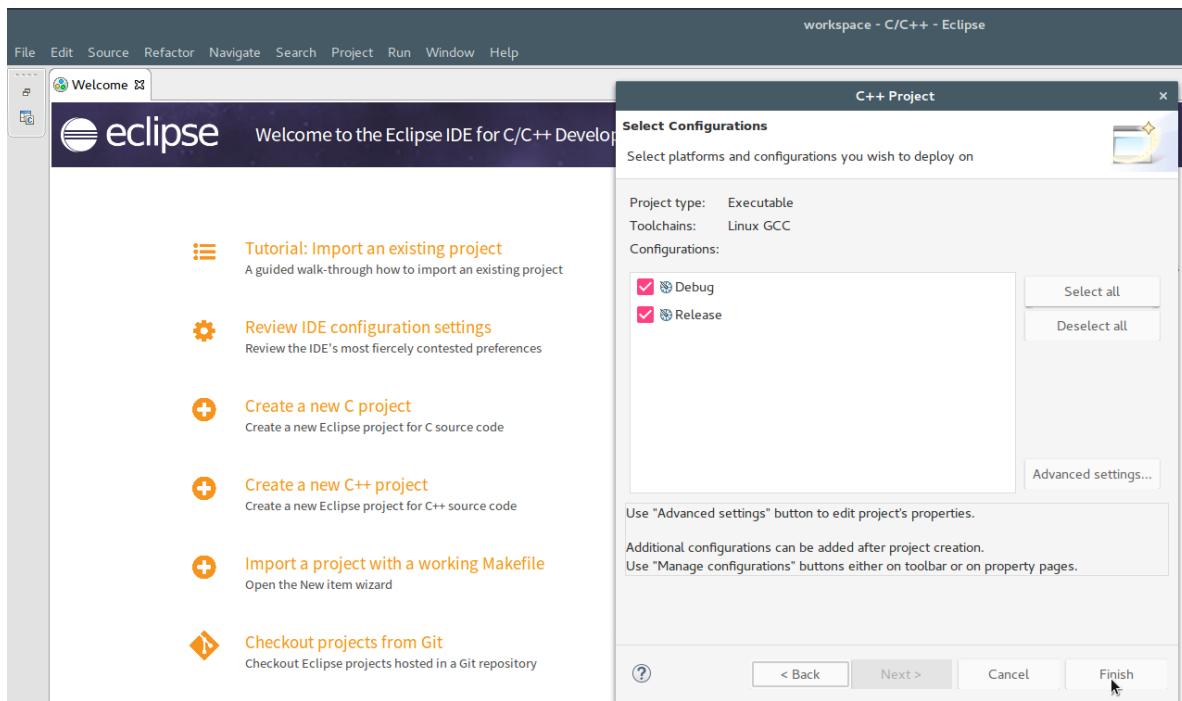
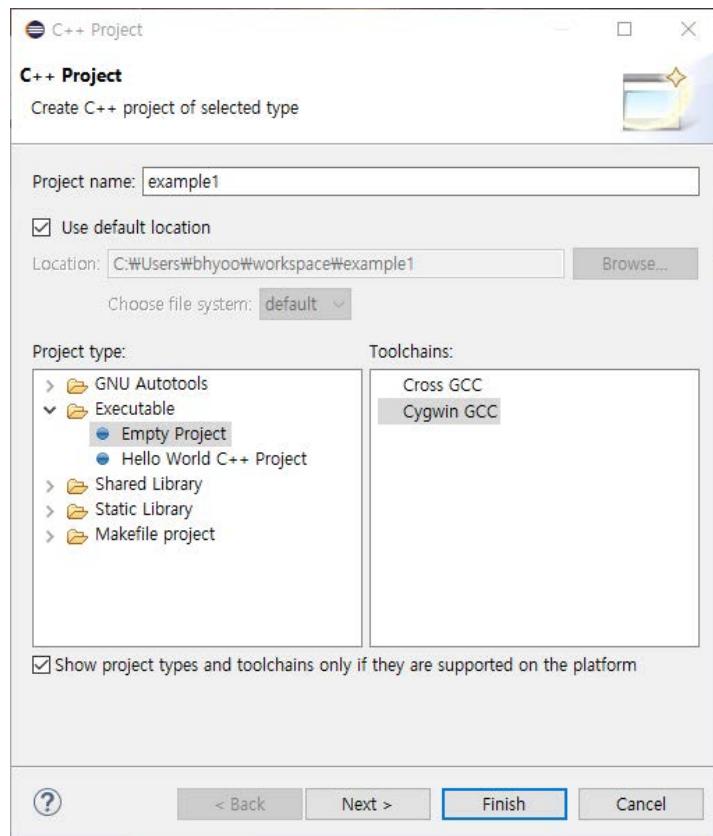
1. Generating a project

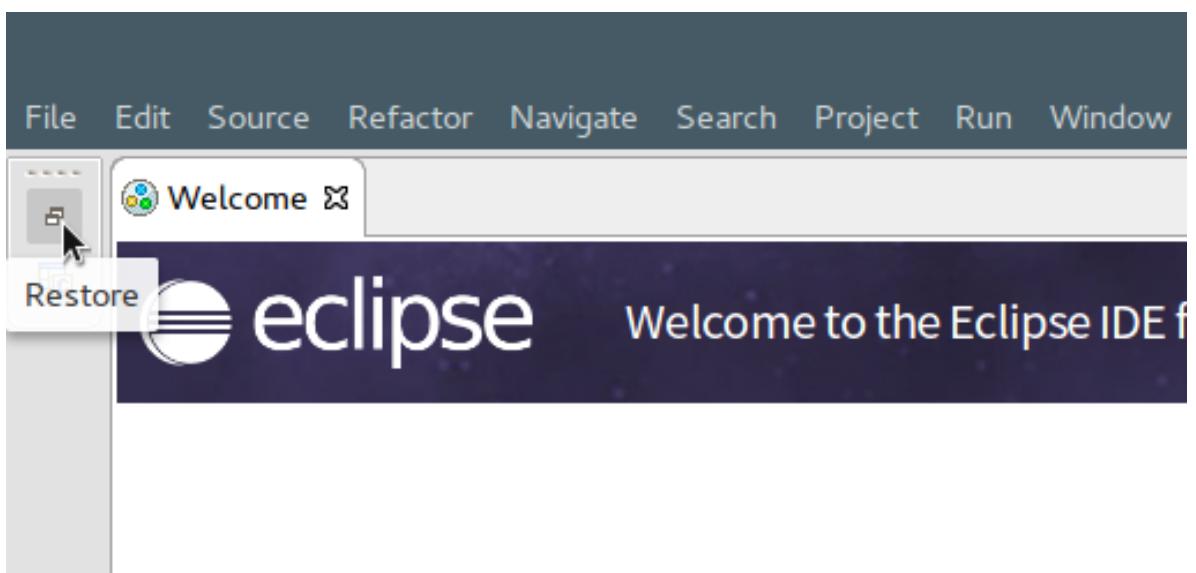


1.1.1 Select Linux GCC (for Linux)

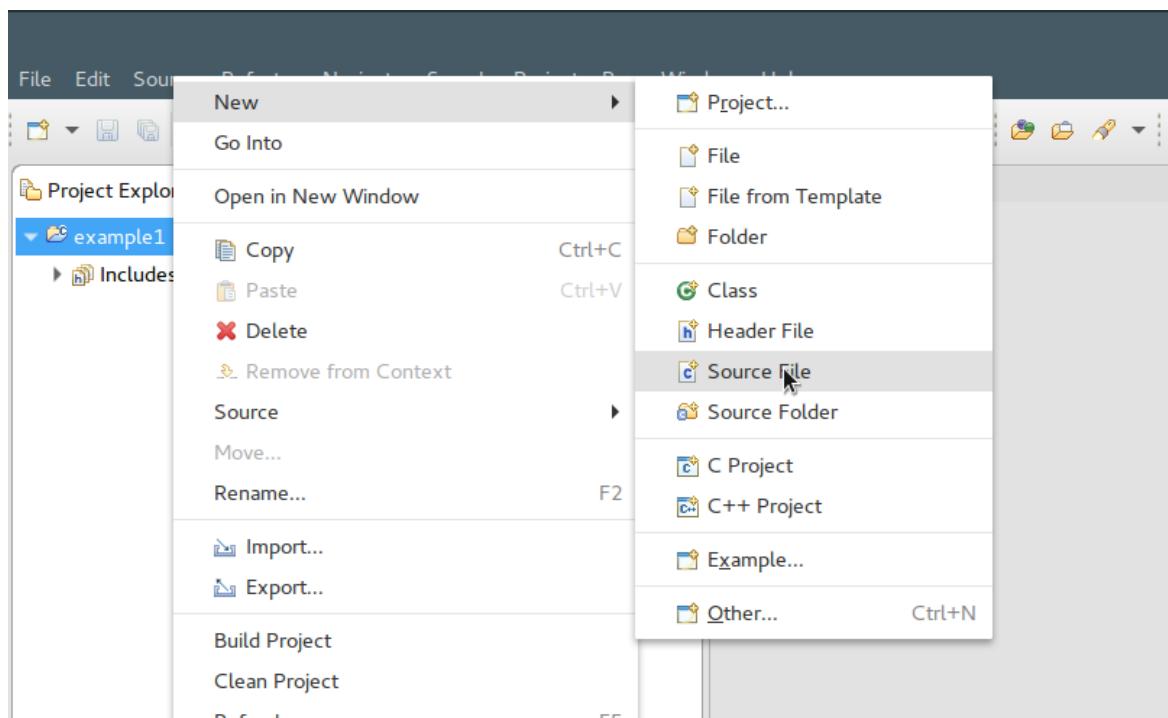


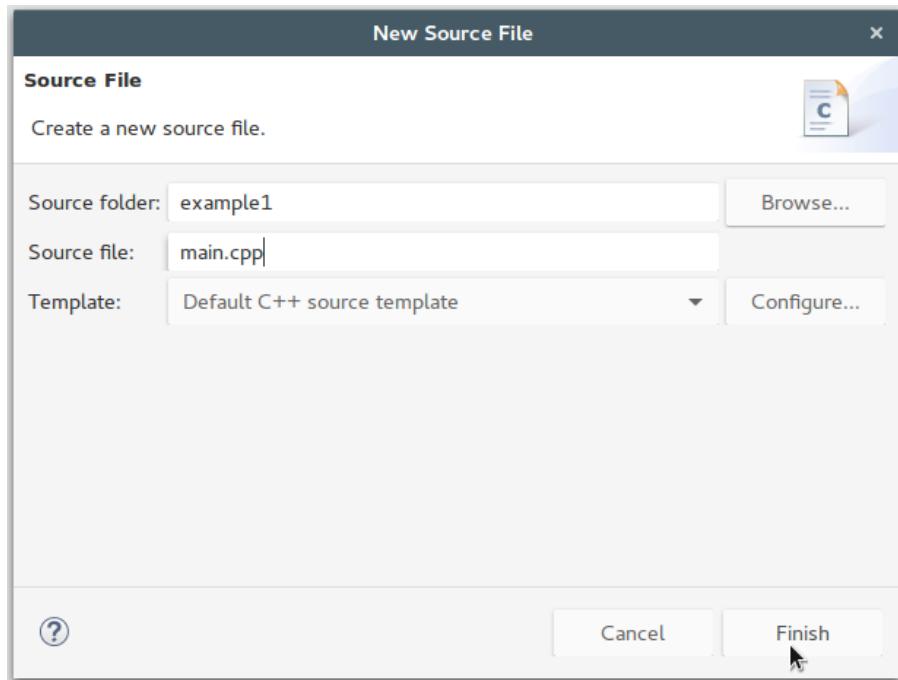
1.1.2 Select Cygwin GCC (for Windows) (Cygwin will be explained below)





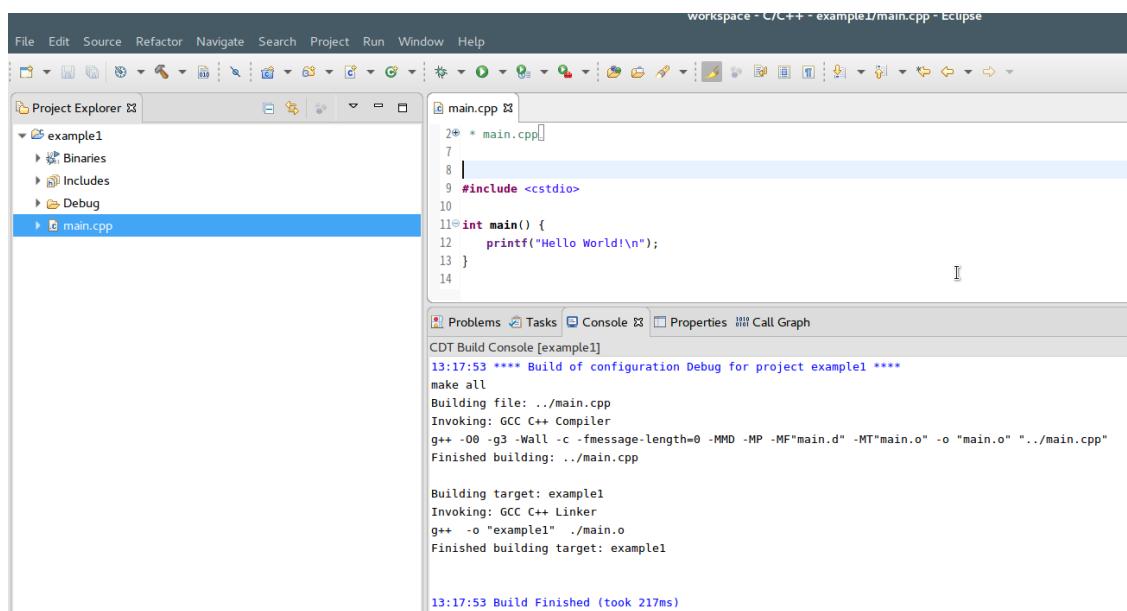
2. Writing a code



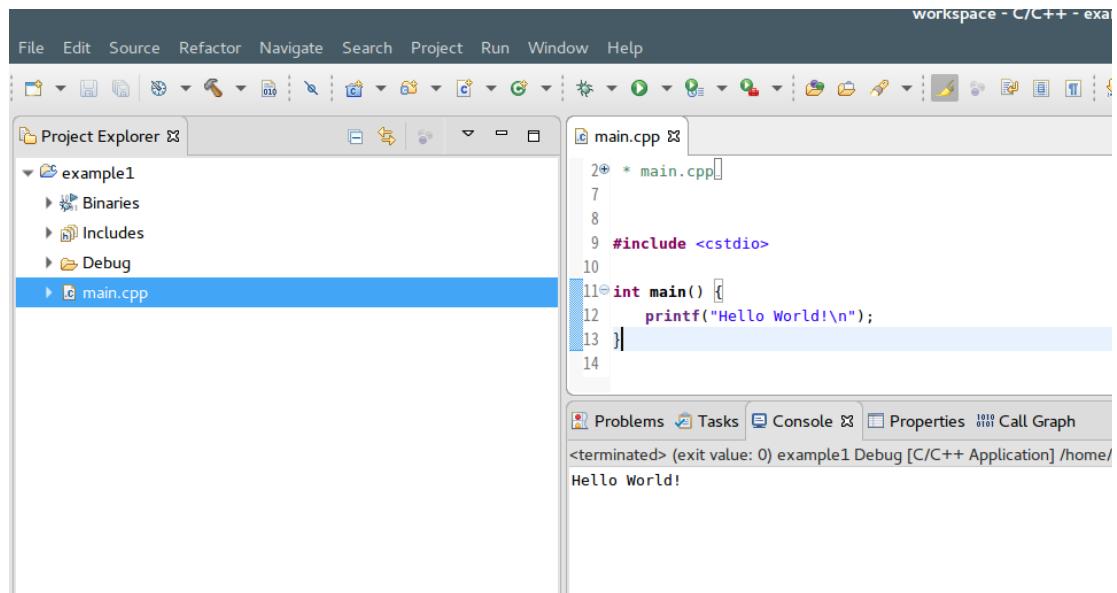


3. Compile and execute it

Ctrl + S to save. And Ctrl + B to compile



Ctrl + F11 to run program



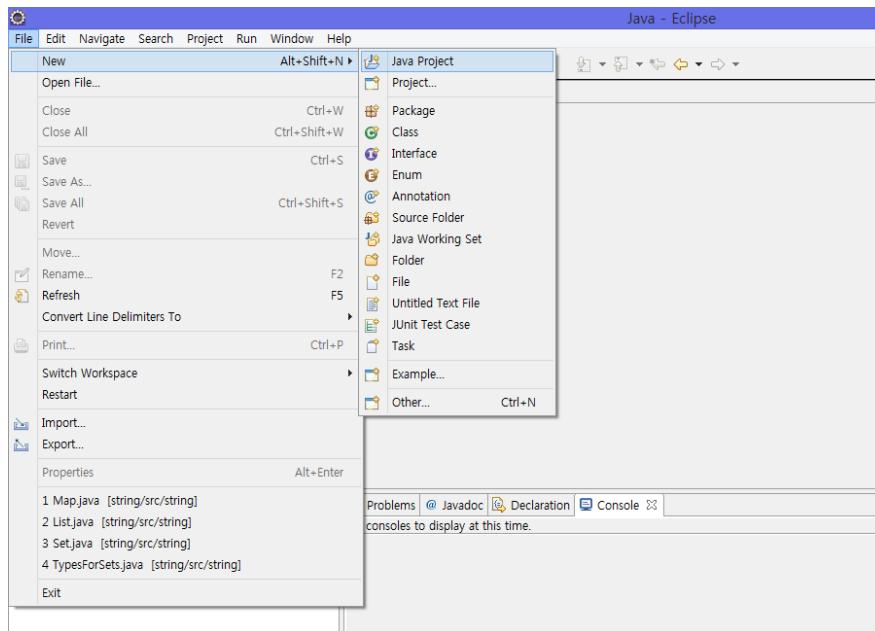
The screenshot shows the Eclipse C/C++ IDE interface. The menu bar includes File, Edit, Source, Refactor, Navigate, Search, Project, Run, Window, and Help. The toolbar has various icons for file operations and project management. The Project Explorer view on the left shows a project named 'example1' with subfolders Binaries, Includes, Debug, and main.cpp, where main.cpp is currently selected. The main editor window displays the following C code:

```
* main.cpp
7
8
9 #include <cstdio>
10
11 int main() {
12     printf("Hello World!\n");
13 }
14
```

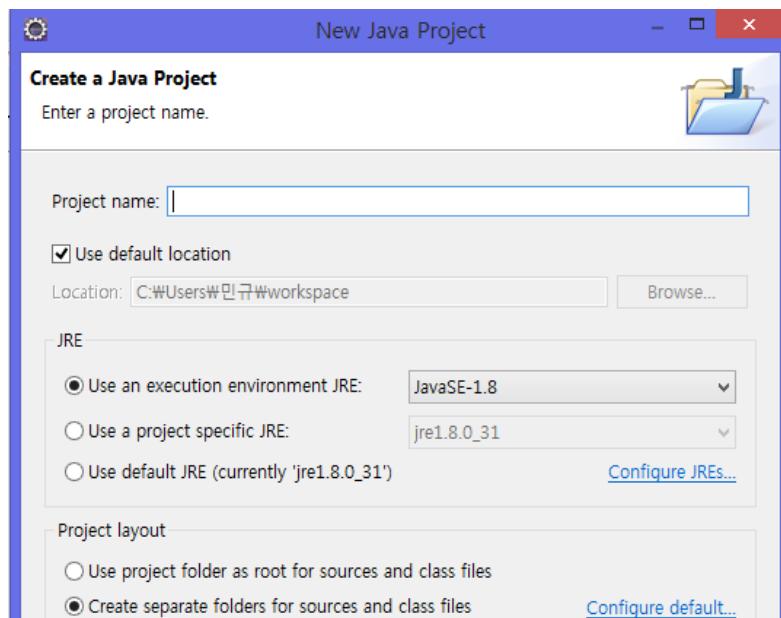
The Console view at the bottom shows the output of the program: <terminated> (exit value: 0) example1 Debug [C/C++ Application] /home/Hello World!

Java Eclipse Programming Environment

1. Generating a project

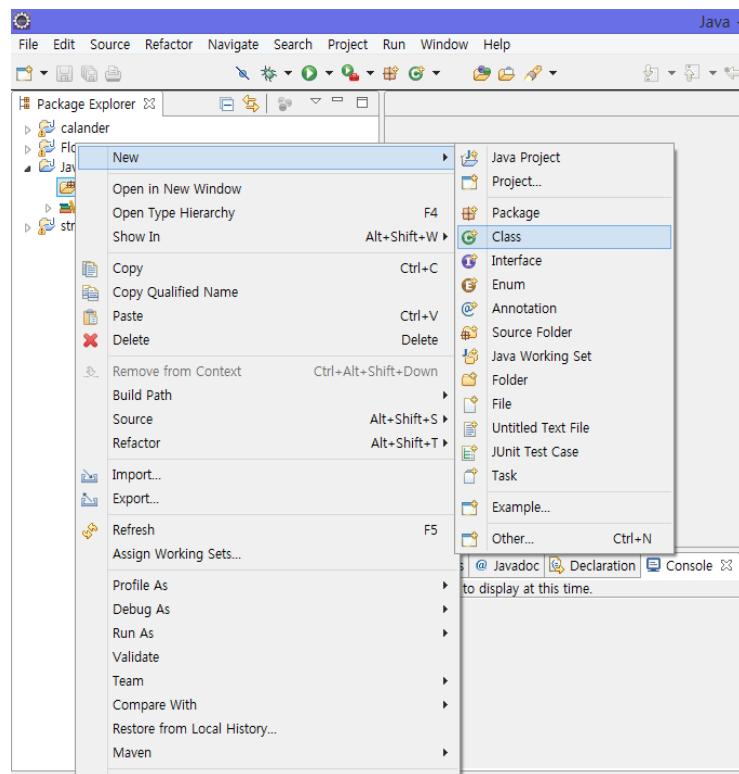


File > New > Java Project



Writing a project name > Finish

2. Writing a code and executing it.



Click the right mouse button at the generated project > New >

Class

If you want to bind many classes to a package, make a package

first, after that make a class.

Source folder:

Package: (default)

Enclosing type:

Name:

Modifiers: public package private protected
 abstract final static

Superclass:

Interfaces:

Which method stubs would you like to create?

public static void main(String[] args)
 Constructors from superclass
 Inherited abstract methods

Do you want to add comments? (Configure templates and default value [here](#))

Generate comments

Writing a class name > Finish

Executing : ctrl + F11

Automatic completion : ctrl + space

Automatic alignment : select a scope and ctrl + shift + f

make a comment : select a scope and ctrl + shift + c

Example1

```
#include <iostream>
#include <string>
using namespace std;

class Item { // Class definition
public:
    string title;
    double price;
    double SalePrice() { return (price*0.9); }
    bool isAvailable() { return (inStockQuantity > 0); }
private:
    int inStockQuantity;
};

int main(void)
{
    Item a;
    a.title="comp";
    a.price=2000;

    cout << a.title << endl;
    cout << a.SalePrice() << endl;

    return 0;
}
```

Example2

```
#include <iostream>
#include <string>
#include <assert.h>
using namespace std;

class String {
public:
    String(const char *s) {
        len = strlen(s);
        str = new char[len + 1];
        assert(str != 0);
        strcpy(str,s);
    }
    ~String() { delete [] str; }
    void showStr()
    {
        cout<<str<<endl;
    }

private:
    int len;
    char *str;
};

int main(void)
{
    String str = String("str"); // Definition
    str.showStr();

    return 0;
}
```

Week 1-2 : Introduction of Programming Environment

- Shortcut key use

- Java Eclipse

Executing : ctrl + F11

Automatic completion : ctrl + space

Automatic alignment : select a scope and ctrl + shift + f

make a comment : select a scope and ctrl + shift + c

- Download Program

- Cygwin (Windows users only)

<https://cygwin.com/install.html>

1. Download **setup-x86.exe** or **setup-x86_64.exe** depending on your system.



Installing and Updating Cygwin Packages

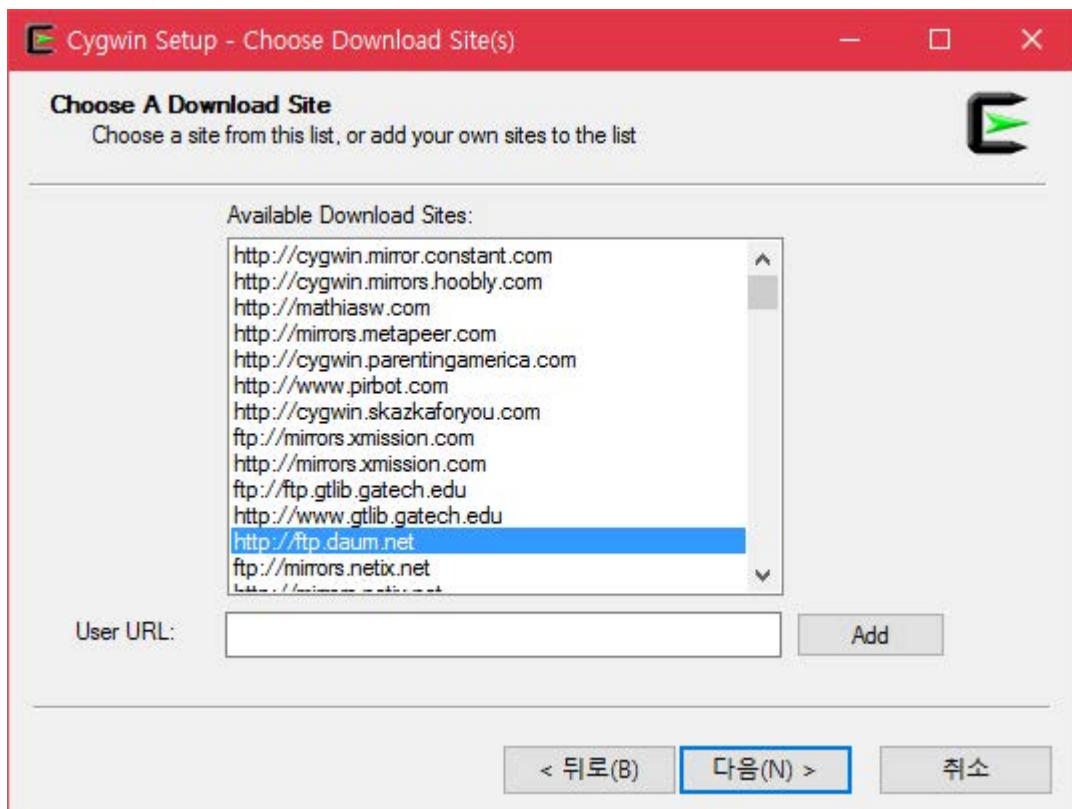
Installing and Updating Cygwin for 32-bit versions of Windows

Run [setup-x86.exe](#) any time you want to update or install a Cygwin package for 32-bit windows. The [signature](#) for [setup-x86.exe](#) can be used to verify the validity of this binary using [this](#) public key.

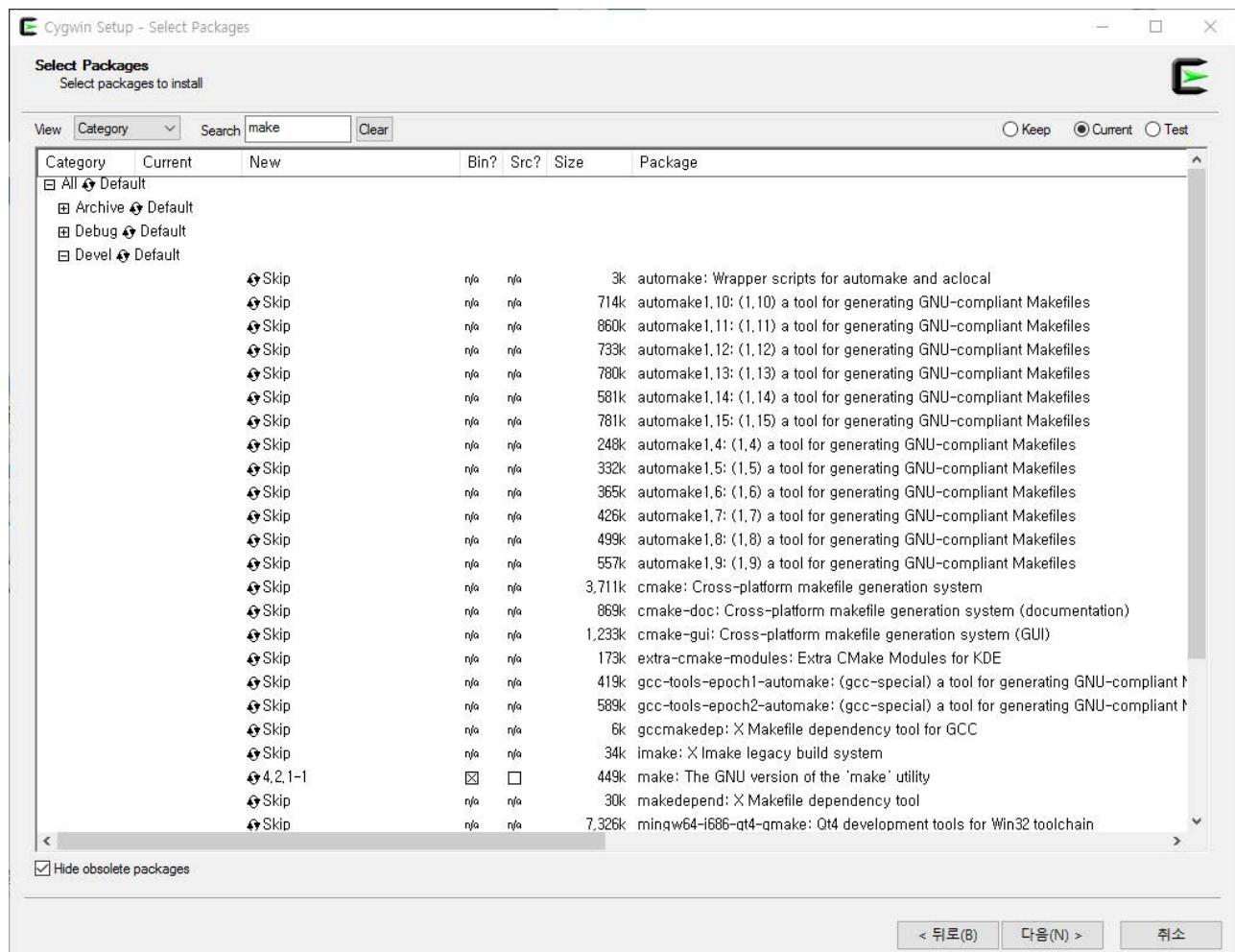
Installing and Updating Cygwin for 64-bit versions of Windows

Run [setup-x86_64.exe](#) any time you want to update or install a Cygwin package for 64-bit windows. The [signature](#) for [setup-x86_64.exe](#) can be used to verify the validity of this binary using [this](#) public key.

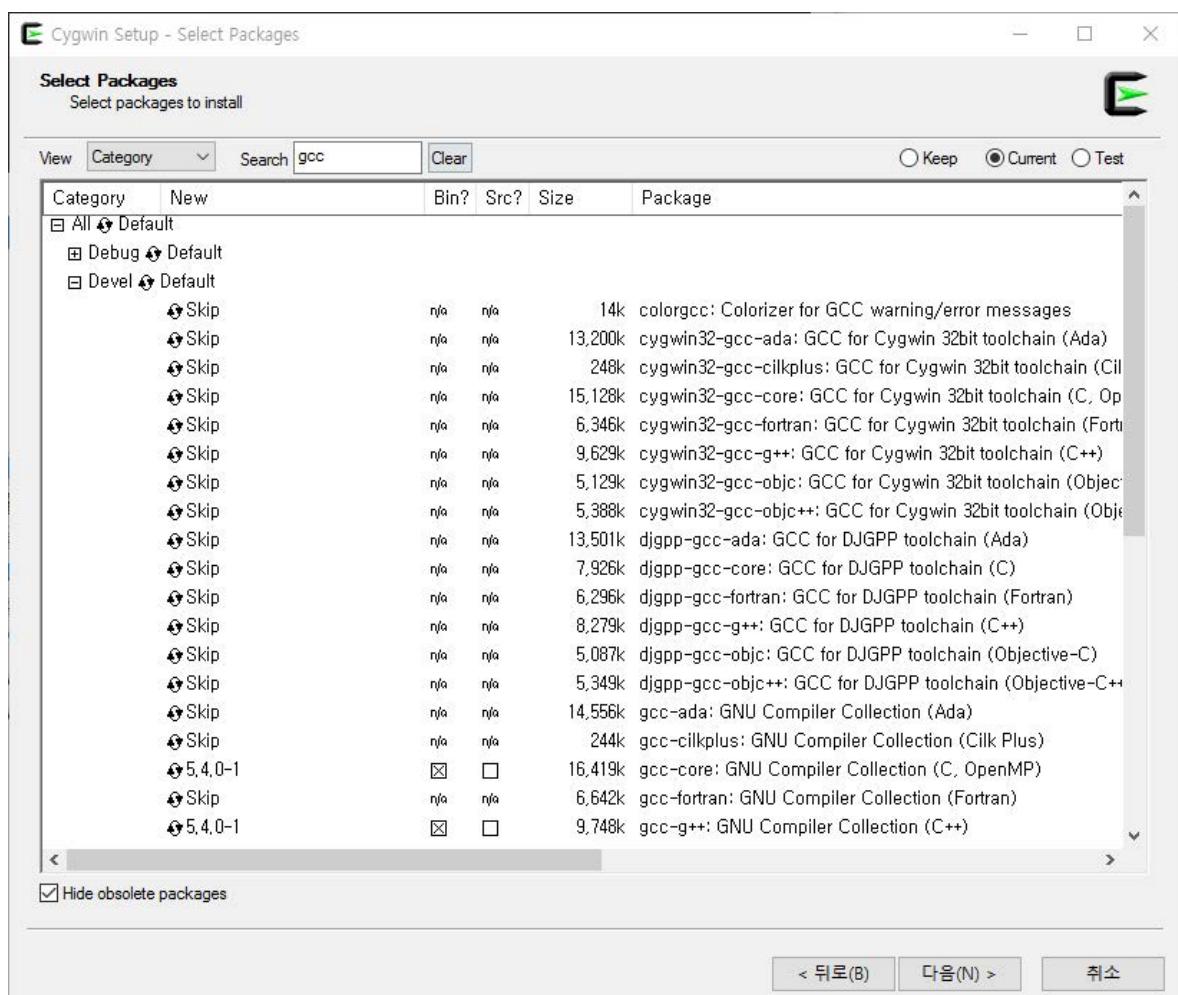
2. Select **http://ftp.daum.net**.



3. Search ***make*** and select ***make: The GNU...***



4. Search **gcc** and select **gcc-core: GNU...** and **gcc-g++: GNU...**



5. Continue installing. It'll take at least 10 min, so be patient.

■ Java, Eclipse

1. Download JDK: <http://www.oracle.com/technetwork/java/javase/index.html>



2. Click accept button and download

Java SE Development Kit 8u40		
You must accept the Oracle Binary Code License Agreement for Java SE to download this software.		
Thank you for accepting the Oracle Binary Code License Agreement for Java SE; you may now download this software.		
Product / File Description	File Size	Download
Linux x86	146.85 MB	jdk-8u40-linux-i586.rpm
Linux x86	166.82 MB	jdk-8u40-linux-i586.tar.gz
Linux x64	145.14 MB	jdk-8u40-linux-x64.rpm
Linux x64	165.19 MB	jdk-8u40-linux-x64.tar.gz
Mac OS X x64	221.89 MB	jdk-8u40-macosx-x64.dmg
Solaris SPARC 64-bit (SVR4 package)	131.59 MB	jdk-8u40-solaris-sparcv9.tar.Z
Solaris SPARC 64-bit	92.83 MB	jdk-8u40-solaris-sparcv9.tar.gz
Solaris x64 (SVR4 package)	139.45 MB	jdk-8u40-solaris-x64.tar.Z
Solaris x64	95.82 MB	jdk-8u40-solaris-x64.tar.gz
Windows x86	175.71 MB	jdk-8u40-windows-i586.exe
Windows x64	180.19 MB	jdk-8u40-windows-x64.exe

You can check your system at computer property.

3. Download Eclipse : **Eclipse Neon**

<http://www.eclipse.org/downloads/>

Java

Example1

```
public class HelloJava {  
    public static void main(String args[]) {  
        System.out.println("Hello, World");  
    }  
}
```

Example2

```
class Item {  
    public String title;  
    public double price;  
    private int inStockQuantity;  
    public double SalePrice(){ return (price * 0.9);}  
    public boolean isAvailable(){  
        if(inStockQuantity > 0) return true;  
        else return false;  
    }  
  
    public static void main(String args[]) {  
        Item A = new Item();  
        A.title = "comp";  
        A.price = 1000;  
        System.out.println(A.SalePrice());  
    }  
}
```

Example3 Multiple Inheritance (Java Overview)

- You don't worry about a meaning of this code. It's just an overviewing code.

```
interface Interface1 {  
    public void interface1();  
}  
  
interface Interface2 {
```

```

    public void interface2();
}

class Class {
    public void function(){
        System.out.println("Class Function");
    }
}

public class MultiInheritance extends Class implements Interface1, Interface2
{
    public void interface1(){
        System.out.println("interface1 Function");
    }

    public void interface2(){
        System.out.println("interface2 Function");
    }

    public static void main(String[] args){
        MultiInheritance m = new MultiInheritance();
        m.interface1();
        m.interface2();
        m.function();
    }
}

```

Example4 Iterator (Java Overview)

```

import java.util.*;
import java.util.Iterator;

public class IteratorEx {

    public static void main(String[] args) {
        // TODO Auto-generated method stub
        ArrayList a = new ArrayList();
        a.add("comp");
    }
}

```

```

    a.add(1);
    a.add(2.0);
    Iterator i = a.iterator();
    while(i.hasNext()) {
        Object obj = i.next();
        if(obj instanceof String) {
            String str = (String)obj;
            System.out.println(str);
        }
        else if(obj instanceof Integer) {
            int n = (Integer)obj;
            System.out.println(n);
        }
        else if(obj instanceof Double) {
            double d = (Double)obj;
            System.out.println(d);
        }
    }
}

```

Example5 Java Internet (Overview)

```

import java.io.*;
import java.net.*;

public class SocketClient {

    public static void main(String args[]) {

        OutputStreamWriter osw=null;

        try {
            osw=new OutputStreamWriter(new
            Socket("127.0.0.1",5777).getOutputStream());
            //osw=new OutputStreamWriter(new

```

```
Socket("147.46.78.163",22).getOutputStream());\n\n} catch (IOException e) {\n    System.out.println("Fail");\n    System.exit(-1);\n}\n\nString str="comp";\n\ntry {\n    osw.write(str,0,4);\n    osw.flush();\n} catch (IOException e) {\n    System.out.println("fail.");\n}\n\ntry {\n    osw.close();\n} catch (IOException e) {\n    System.out.println("close fail.");\n}\n}\n}
```