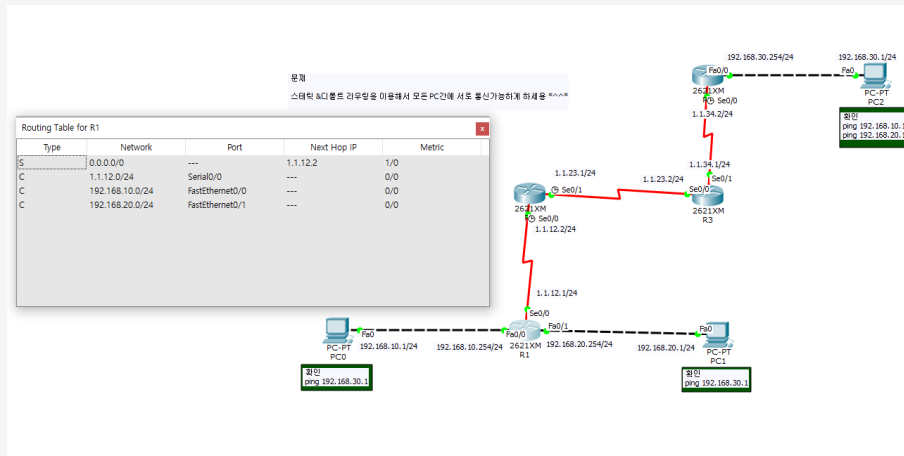


# 응용 SW 기초 기술 활용

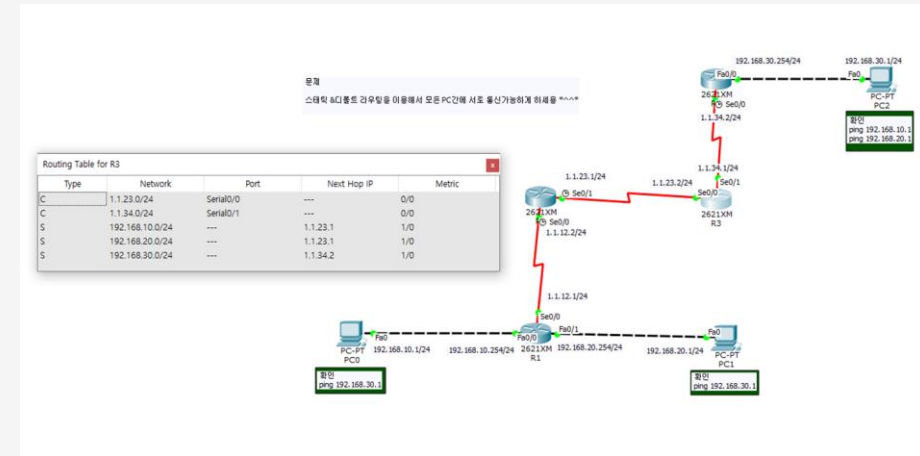
4조 : 문수찬, 김준희, 김민희, 이현정

# 문제 1 ) 정적라우팅 (Static & Default Routing) – ROUTING TABLE

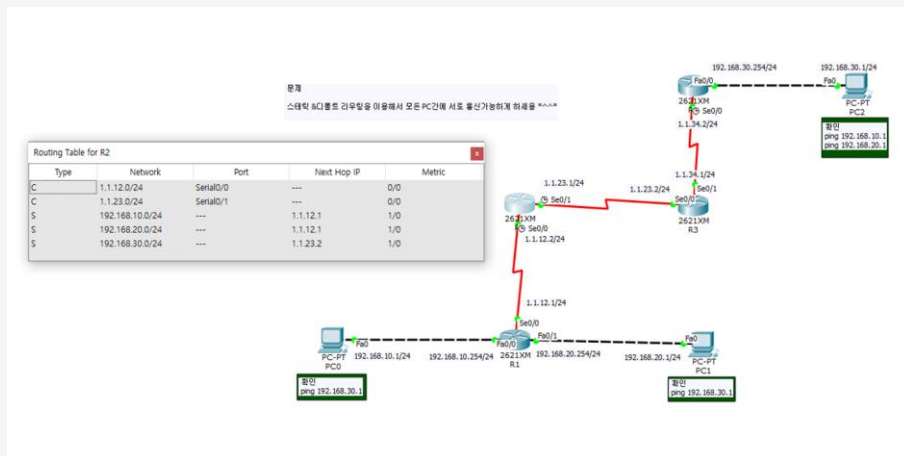
## R1



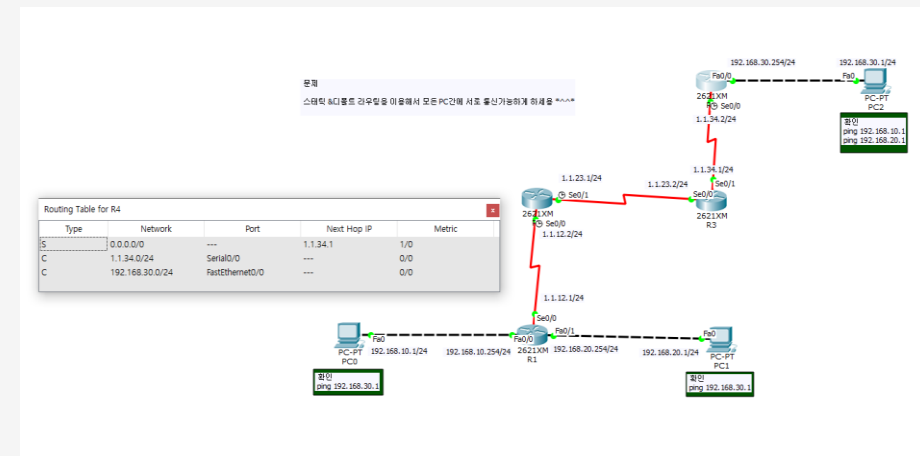
## R3



## R2

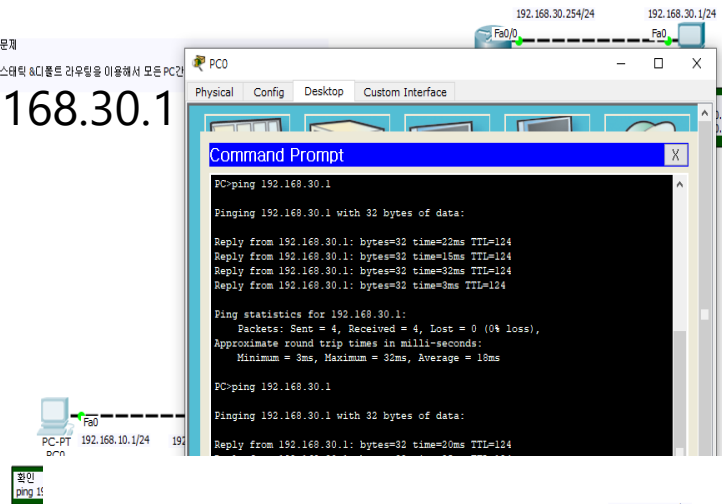


## R4

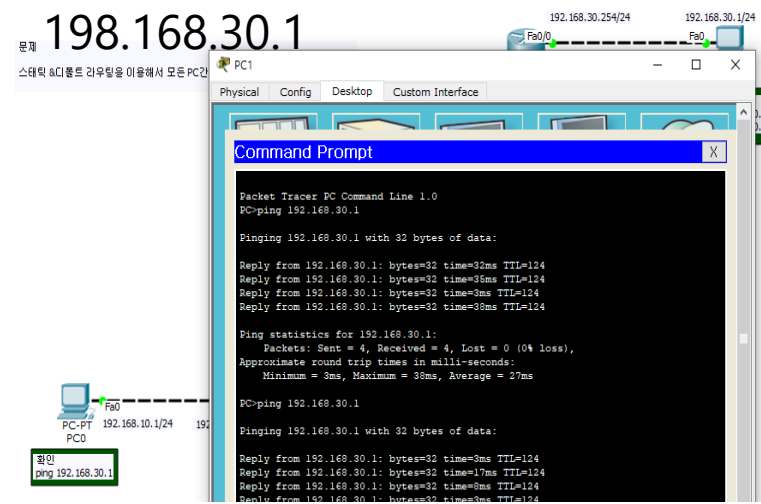


# 문제 1 ) 정적라우팅 (Static & Default Routing) - ping

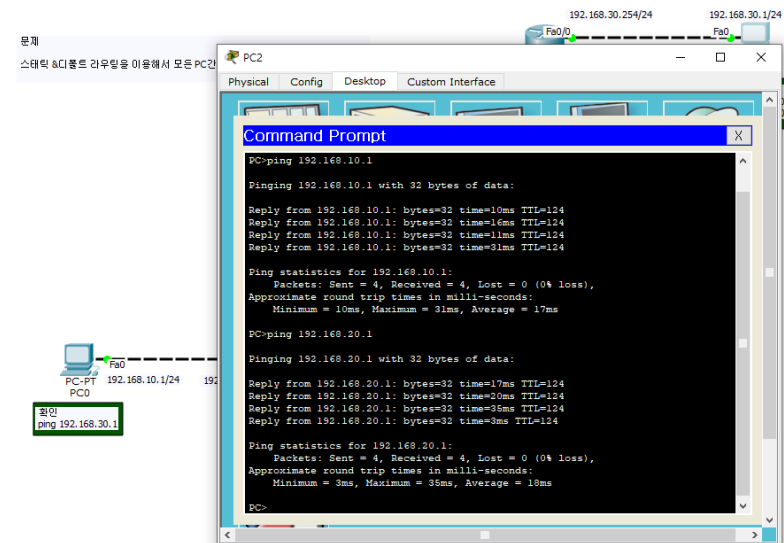
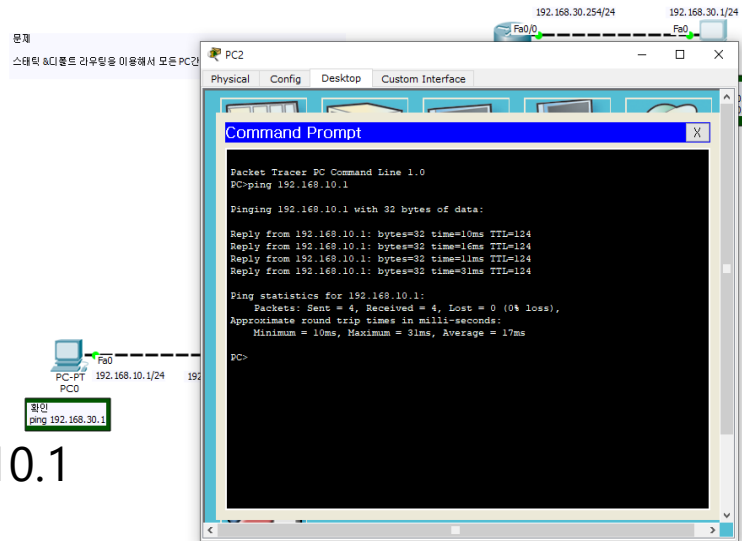
Pc 0  
192.168.30.1



Pc1  
198.168.30.1

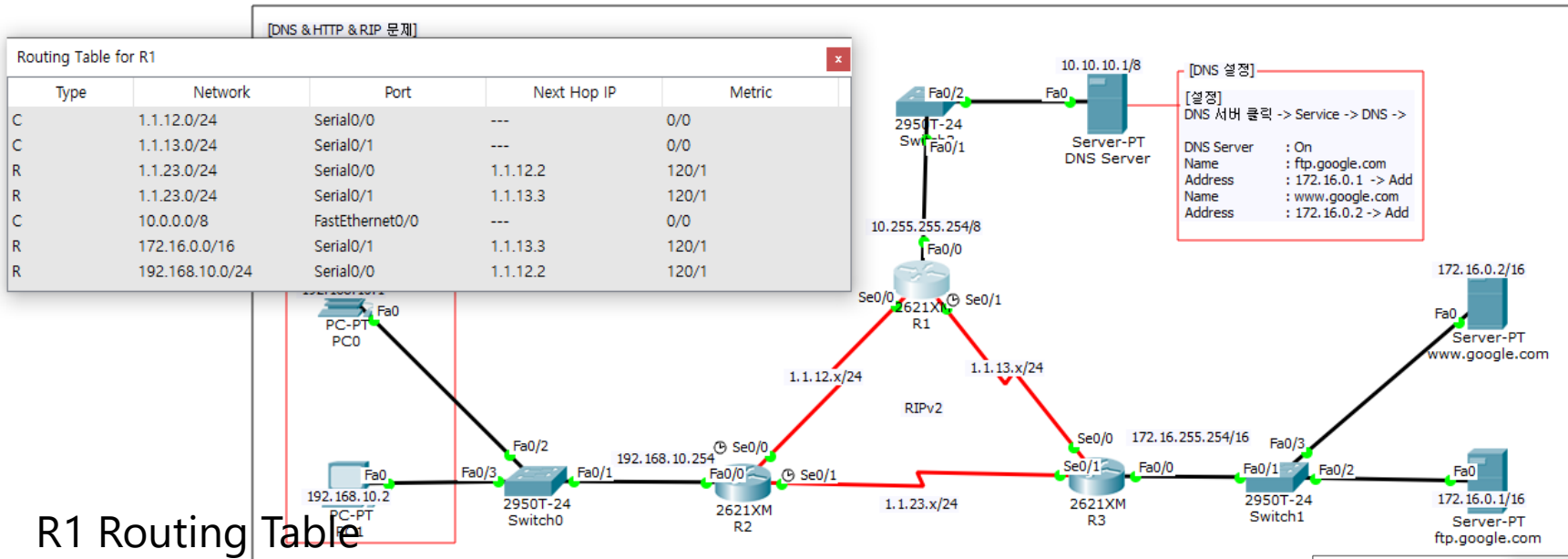


Pc 2  
192.168.10.1

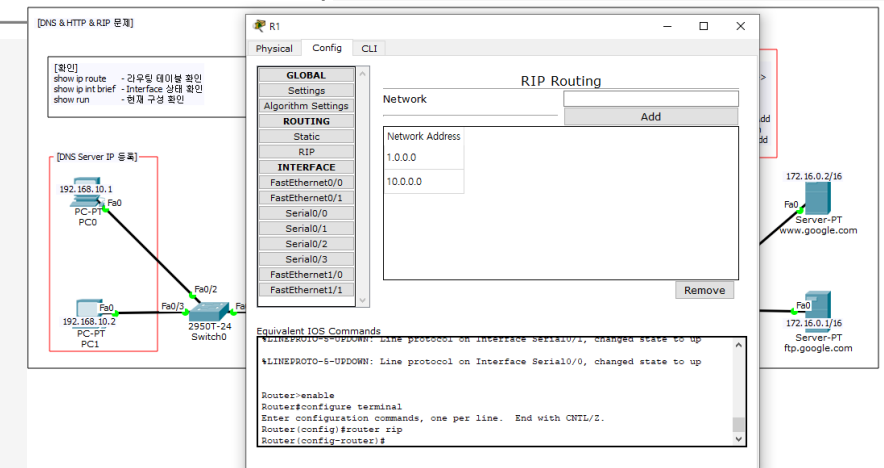


pc 2  
192.168.20.1

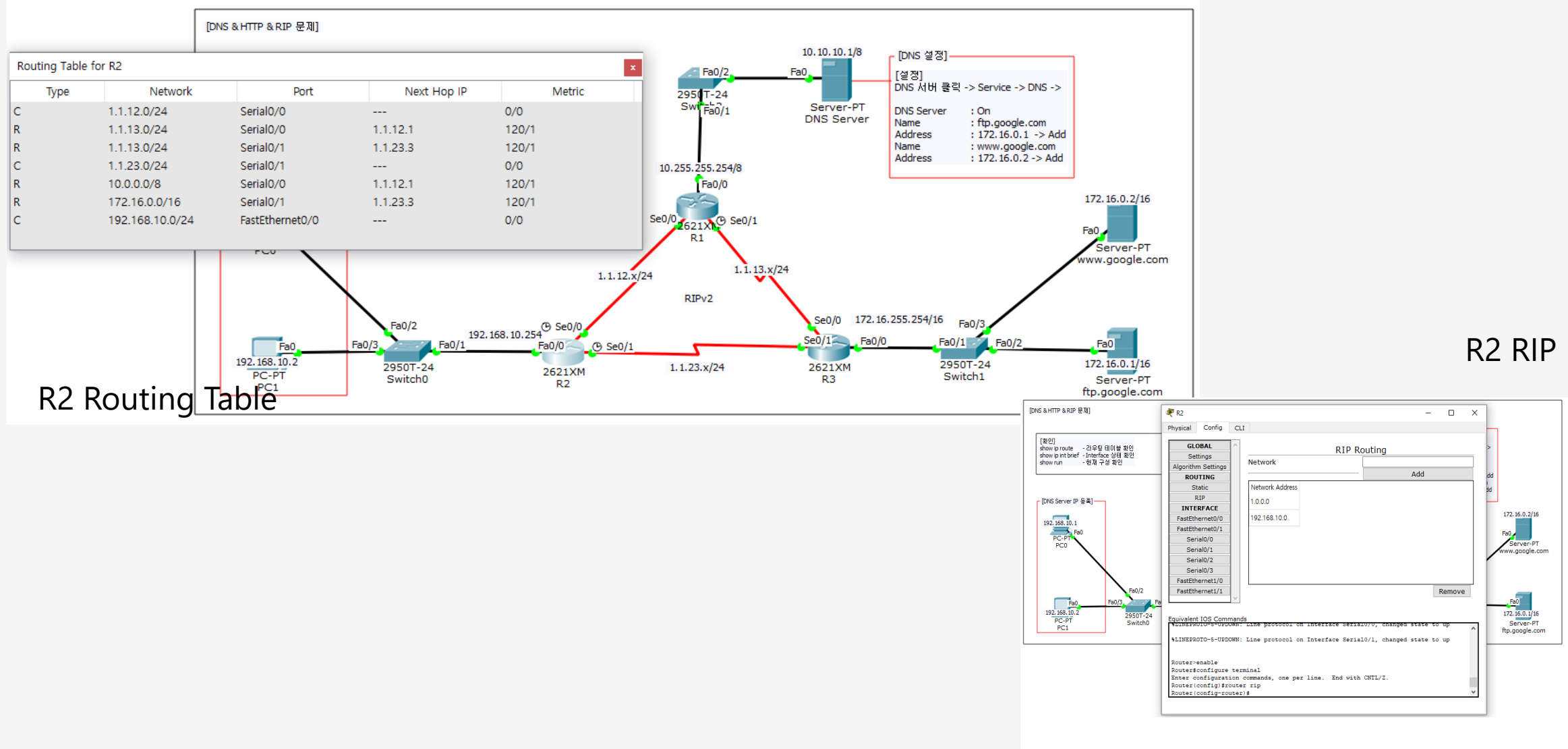
## 문제 2) RIP & DNS – RIP & Routing Table



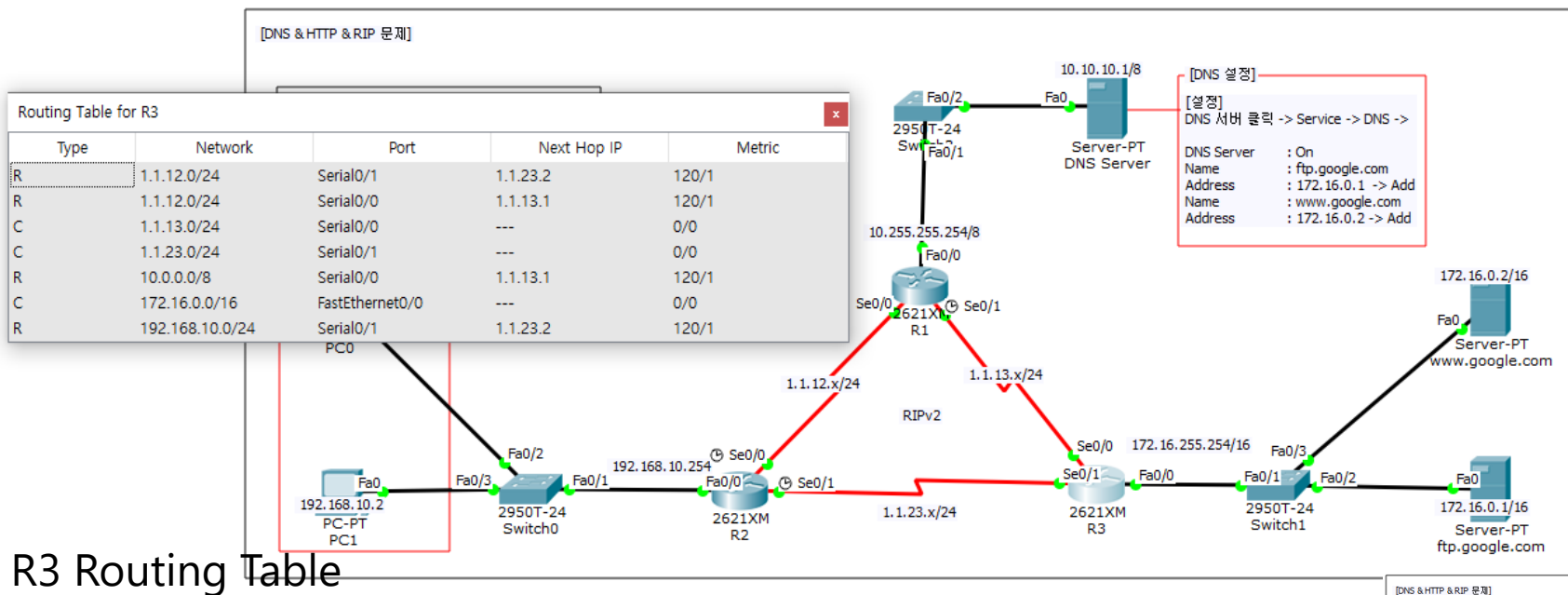
R1 RIP



## 문제 2) RIP & DNS – RIP & Routing Table

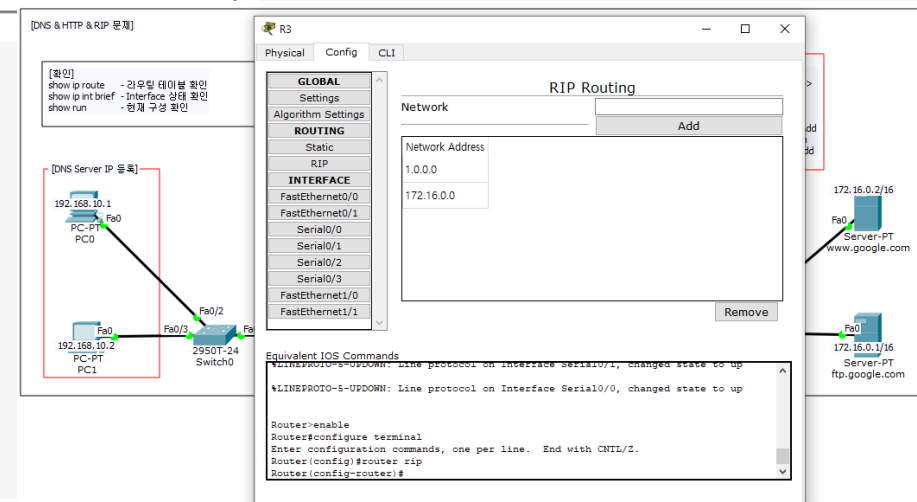


## 문제 2) RIP & DNS – RIP & Routing Table



R3 Routing Table

R3 RIP



## 문제 2) RIP & DNS – DNS Server

[DNS & HTTP & RIP 문제]

[확인]  
show ip route - 라우팅 테이블 확인  
show ip int brief - Interface 상태 확인  
show run - 현재 구성 확인

[DNS Server IP 등록]

DNS Server

Physical Config Services Desktop Custom Interface

**SERVICES**

- HTTP
- DHCP
- DHCPv6
- TFTP
- DNS
- SYSLOG
- AAA
- NTP
- EMAIL
- FTP

**DNS**

DNS Service ☒ On ☐ Off

Resource Records

Name  Type **A Record**

Address

Add Save Remove

No.	Name	Type	Detail
0	ftp.google.com	A Record	172.16.0.1
1	www.google.com	A Record	172.16.0.2

DNS Cache

## 문제 2 ) RIP & DNS – FTP 계정 생성

[DNS & HTTP & RIP 문제]

[확인]  
show ip route - 라우팅 테이블 확인  
show ip int brief - Interface 상태 확인  
show run - 현재 구성 확인

[DNS Server IP 등록]

```
graph LR
    PC0[PC-PT PC0 192.168.10.1] --- Fa0[Fa0]
    Fa0 --- Switch[2950T-24 Switch0]
    Switch --- Fa0_3[Fa0/3]
    Fa0_3 --- PC1[PC-PT PC1 192.168.10.2]
```

ftp.google.com

Physical Config Services Desktop Custom Interface

SERVICES

- HTTP
- DHCP
- DHCPv6
- TFTP
- DNS
- SYSLOG
- AAA
- NTP
- EMAIL
- FTP

FTP

Service ☒ On ☐ Off

User Setup

Username korea Password korea

☒ Write ☒ Read ☒ Delete ☒ Rename ☒ List

	Username	Password	Permission
1	cisco	cisco	RWDNL
2	korea	korea	RWDNL

Add Save Remove

File

- 1 asa842-k8.bin
- 2 c1841-advipservicesk9-mz.124-15.T1.bin
- 3 c1841-ipbase-mz.123-14.T7.bin
- 4 c1841-ipbasek9-mz.124-12.bin

Remove

```
graph LR
    Server1[Server-PT www.google.com 172.16.0.2/16] --- Fa0_1[Fa0]
    Server2[Server-PT ftp.google.com 172.16.0.1/16] --- Fa0_2[Fa0]
```



## 문제 2) RIP & DNS – IP

### PC0 IP

[DNS & HTTP & RIP 문제]

[확인]  
show ip route - 라우팅 테이블 확인  
show ip int brief - Interface 상태 확인  
show run - 현재 구성 확인

[DNS Server IP 등록]

IP Configuration

☐ DHCP ☒ Static

IP Address: 192.168.10.1

Subnet Mask: 255.255.255.0

Default Gateway: 192.168.10.254

DNS Server: 10.10.10.1

IPv6 Configuration

☐ DHCP ☐ Auto Config ☒ Static

IPv6 Address:

Link Local Address: FE80::250:FFF:FE79:E59A

IPv6 Gateway:

IPv6 DNS Server:

### PC1 IP

[DNS & HTTP & RIP 문제]

[확인]  
show ip route - 라우팅 테이블 확인  
show ip int brief - Interface 상태 확인  
show run - 현재 구성 확인

[DNS Server IP 등록]

IP Configuration

☐ DHCP ☒ Static

IP Address: 192.168.10.2

Subnet Mask: 255.255.255.0

Default Gateway: 192.168.10.254

DNS Server: 10.10.10.1

IPv6 Configuration

☐ DHCP ☐ Auto Config ☒ Static

IPv6 Address:

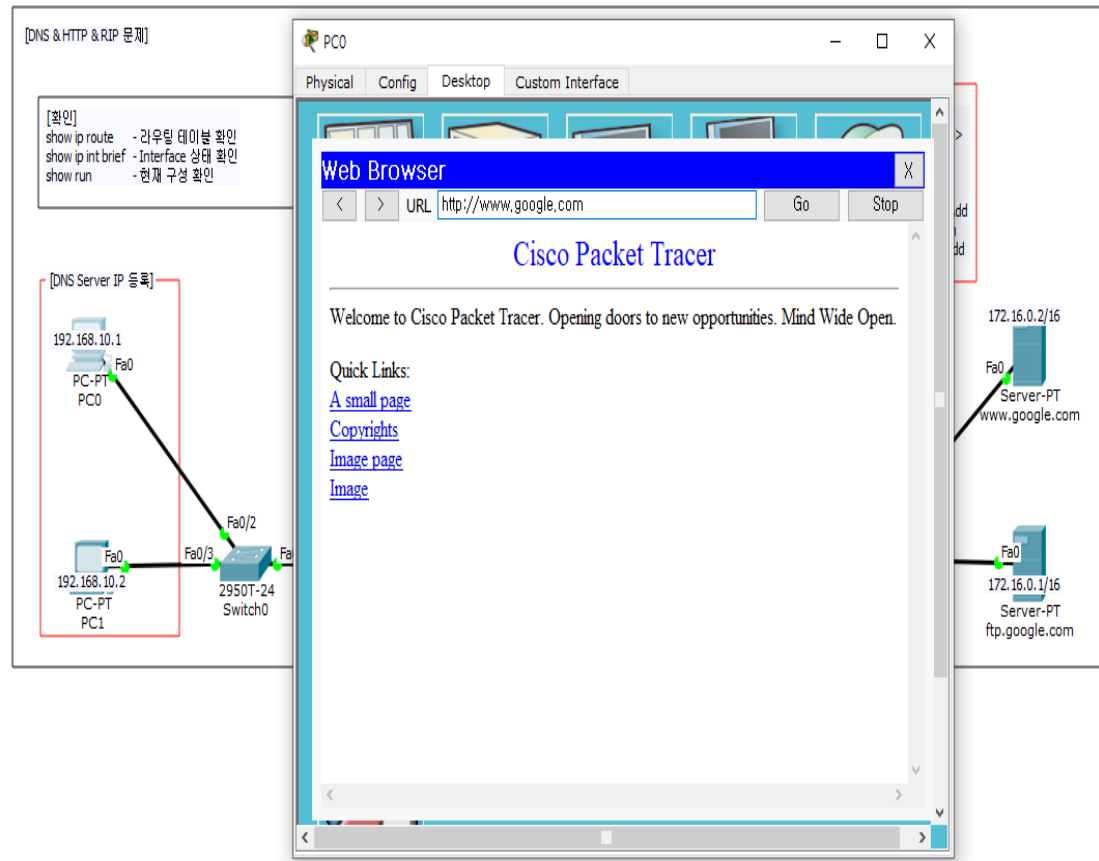
Link Local Address: FE80::230:F2FF:FE31:586B

IPv6 Gateway:

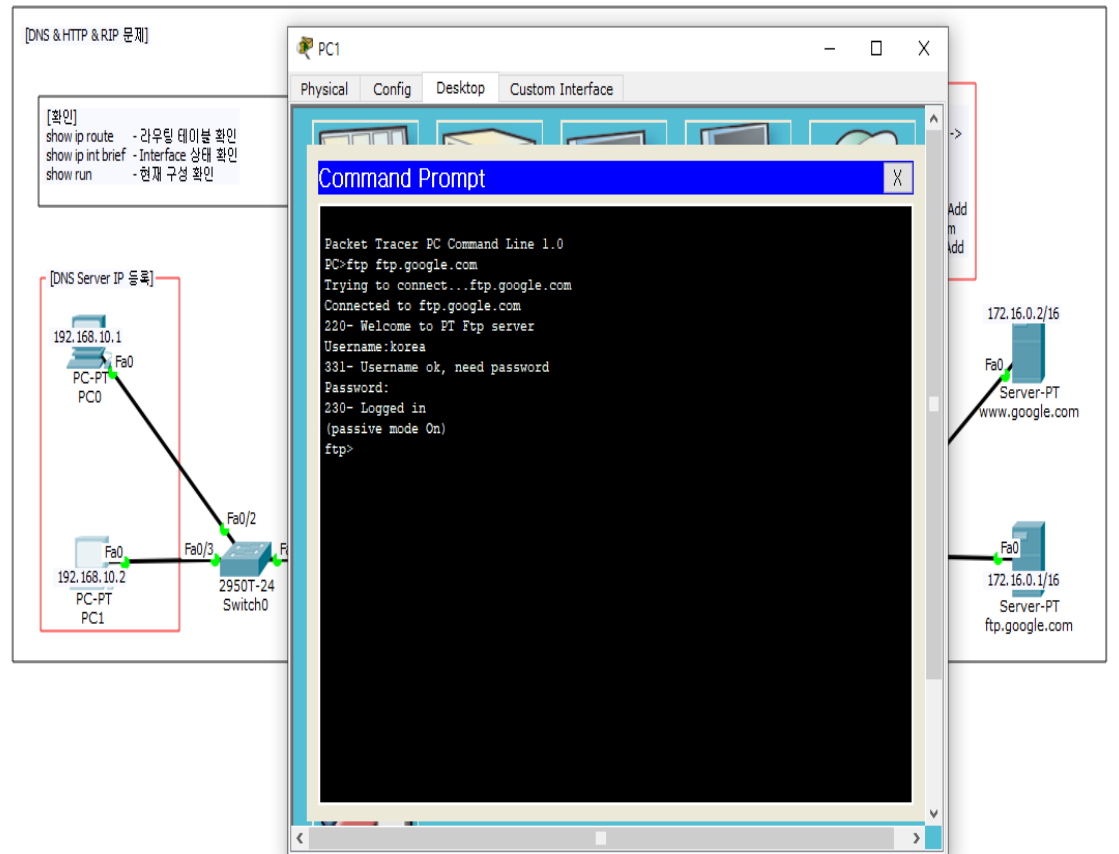
IPv6 DNS Server:

## 문제 2 ) RIP & DNS – Web Browser /FTP 접속

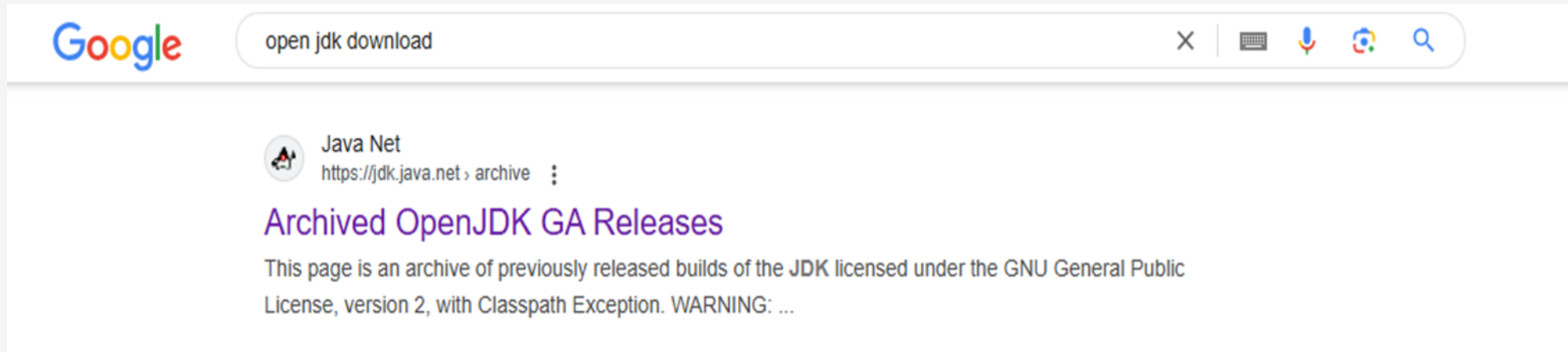
### PC0 Web Browser



### PC1 FTP 접속



## 문제 3) 미들웨어 개발환경 구축 – JDK 설치



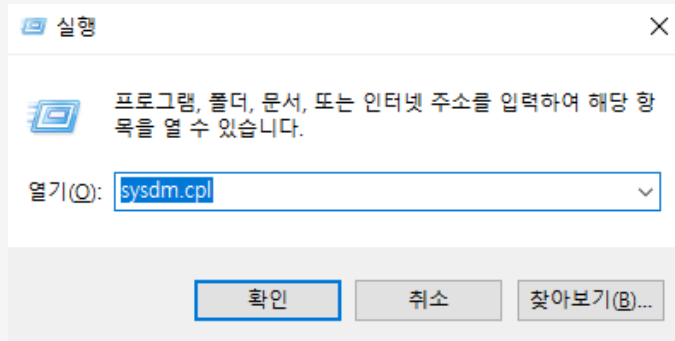
**21.0.2 (build 21.0.2+13)**

<b>Windows</b>	<b>64-bit</b>	<b>zip (sha256) 193M</b>
<b>Mac/AArch64</b>	<b>64-bit</b>	<b>tar.gz (sha256) 189M</b>
<b>Mac/x64</b>	<b>64-bit</b>	<b>tar.gz (sha256) 191M</b>
<b>Linux/AArch64</b>	<b>64-bit</b>	<b>tar.gz (sha256) 193M</b>
<b>Linux/x64</b>	<b>64-bit</b>	<b>tar.gz (sha256) 195M</b>
	<b>Source</b>	<b>Tag jdk-21.0.2-ga</b>

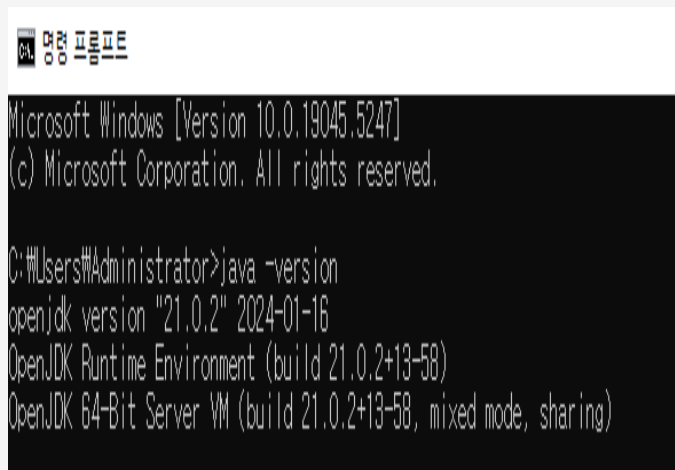
OS에 맞게 버전 설치

# 문제 3) 미들웨어 개발환경 구축 – JDK 설정

## 실행창 sysdm.cpl 검색

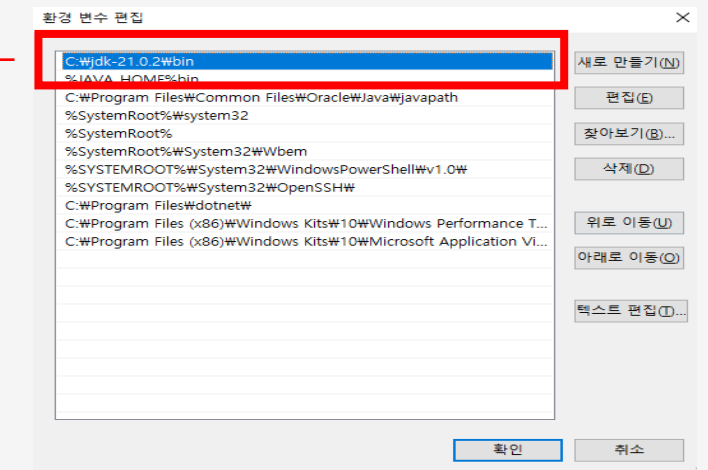
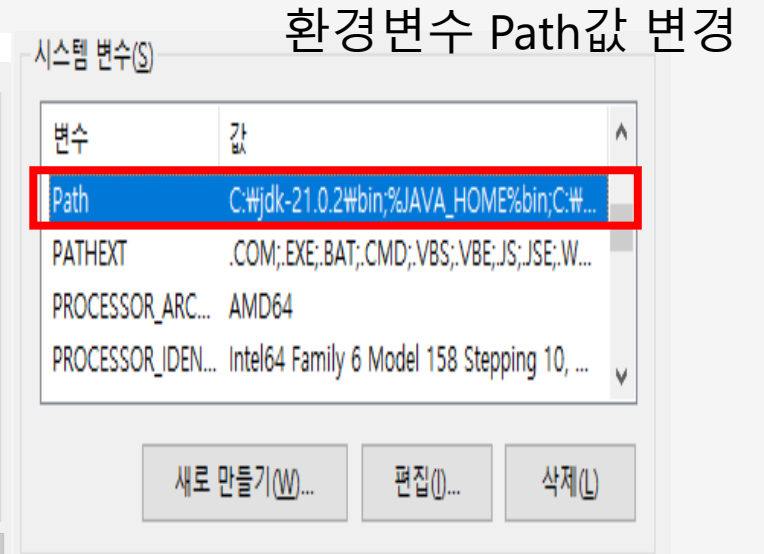


## 설치확인



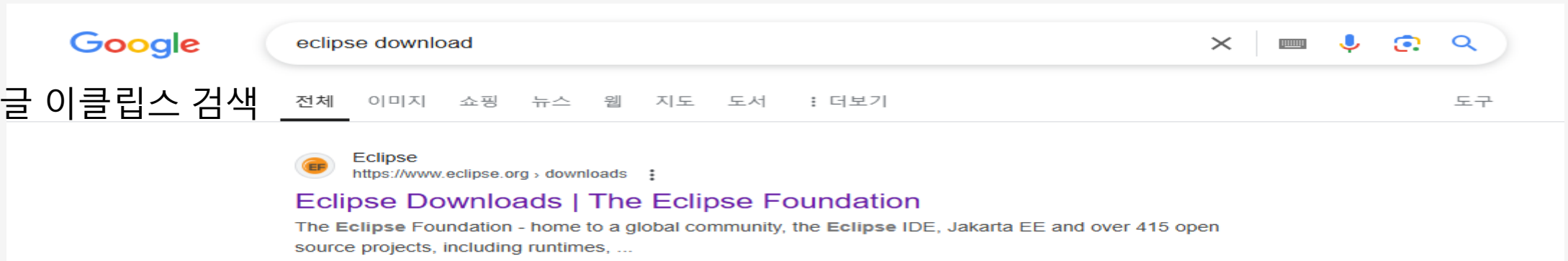
## 설정할 경로

내 PC > Windows (C:) > jdk-21.0.2 > bin



# 문제 3) 미들웨어 개발환경 구축 – 이클립스 설치

구글 이클립스 검색



## Eclipse IDE 2024-12 R Packages

### Eclipse IDE for Enterprise Java and Web Developers

544 MB 98,433 DOWNLOADS

Tools for developers working with Java and Web applications, including a Java IDE, tools for JavaScript, TypeScript, JavaServer Pages and Faces, Yaml, Markdown, Web Services, JPA and Data Tools, Maven and Gradle, Git, and more.

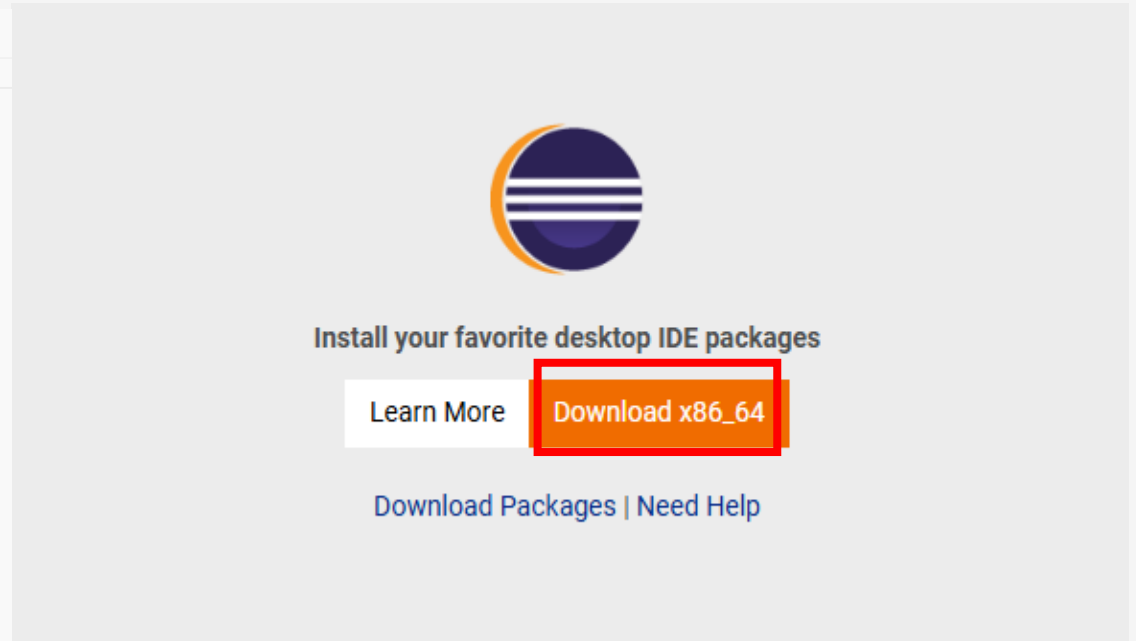


Click [here](#) to raise an issue with the Eclipse Web Tools Platform. Maintainers will move opened issues to the right place.  
Click [here](#) to raise an issue with the Eclipse Platform.  
Click [here](#) to raise an issue with Maven integration for web projects.  
Click [here](#) to raise an issue with Eclipse Wild Web Developer (incubating).

### OS에 맞는 버전 설치



Windows | **x86\_64** | AArch64  
macOS x86\_64 | AArch64  
Linux x86\_64 | AArch64 | riscv64



# 문제 3) 미들웨어 개발환경 구축 – 이클립스 기본 설정

HTML,CSS,JSP도 동일하게 적용

The image shows the Eclipse IDE interface with several settings panels highlighted by red boxes. On the left, the 'Window' menu is open, and 'Preferences' is selected. The 'Preferences' dialog is open to the 'Workspace' section. In the 'Text file encoding' section, the 'Other' radio button is selected, and 'UTF-8' is chosen from the dropdown. To the right, three panels are shown: 'HTML Files', 'CSS Files', and 'JSP Files'. Each panel has a red box around the 'Encoding' dropdown, which is set to 'ISO 10646/Unicode(UTF-8)'. The 'IANA' field is also set to 'UTF-8'.

Workspace 유니코드 UTF-8로 설정

**HTML Files**

Creating files  
Add this suffix (if not specified): `html`  
The following encoding will apply:  
Encoding: `ISO 10646/Unicode(UTF-8)`  
IANA: `UTF-8`

**CSS Files**

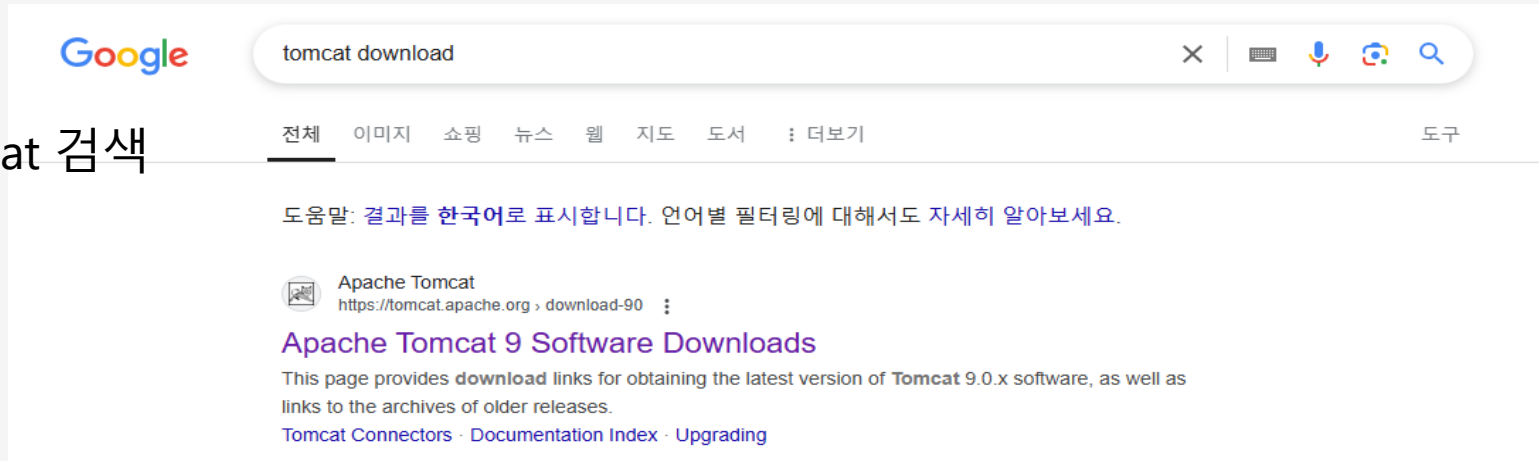
Creating files  
Add this suffix (if not specified): `css`  
The following encoding will apply:  
Encoding: `ISO 10646/Unicode(UTF-8)`  
IANA: `UTF-8`

**JSP Files**

Creating files  
Add this suffix (if not specified): `jsp`  
The following encoding will apply:  
Encoding: `ISO 10646/Unicode(UTF-8)`  
IANA: `UTF-8`

## 문제 3) 미들웨어 개발환경 구축 – 아파치 톰캣 설치

구글 tomcat 검색



9.0.98

Please see the [README](#) file for packaging information. It explains what every distribution contains.

### Binary Distributions

- Core:
  - [zip](#) ([pgp](#), [sha512](#))
  - [tar.gz](#) ([pgp](#), [sha512](#))
  - [32-bit Windows zip](#) ([pgp](#), [sha512](#))
  - [64-bit Windows zip](#) ([pgp](#), [sha512](#))
  - [32-bit/64-bit Windows Service Installer](#) ([pgp](#), [sha512](#))

## 문제 3) 미들웨어 개발환경 구축 – 아파치 설치설정

Apache Tomcat Setup: Java Virtual Machine path selection

**Java Virtual Machine**  
Java Virtual Machine path selection.

Please select the path of a Java 8 or later JRE installed on your system.

드라이브내 jdk경로로 설정

C:\jdk-21.0.2

> 내 PC > Windows (C:) > jdk-21.0.2 > bin

Nullsoft Install System v3.10

< Back Next > Cancel

Apache Tomcat Setup: Configuration Options

**Configuration**  
Tomcat basic configuration.

Server Shutdown Port -1

HTTP/1.1 Connector Port 8080

Windows Service Name Tomcat9

Create shortcuts for all users ☐ 유저네임 패스워드 설정

Tomcat Administrator Login (optional)

User Name admin

Password .....

Roles manager-gui

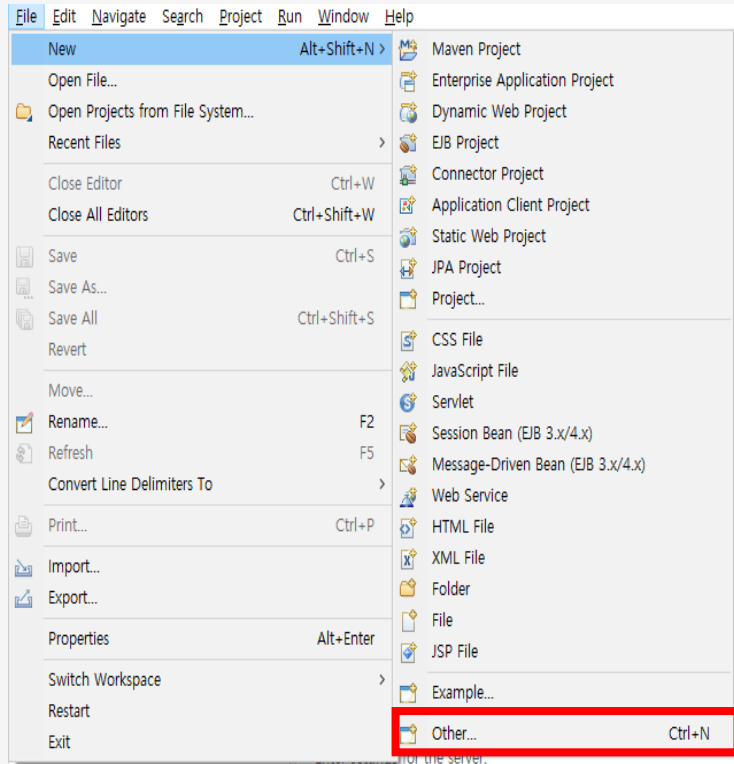
Nullsoft Install System v3.10

< Back Next > Cancel

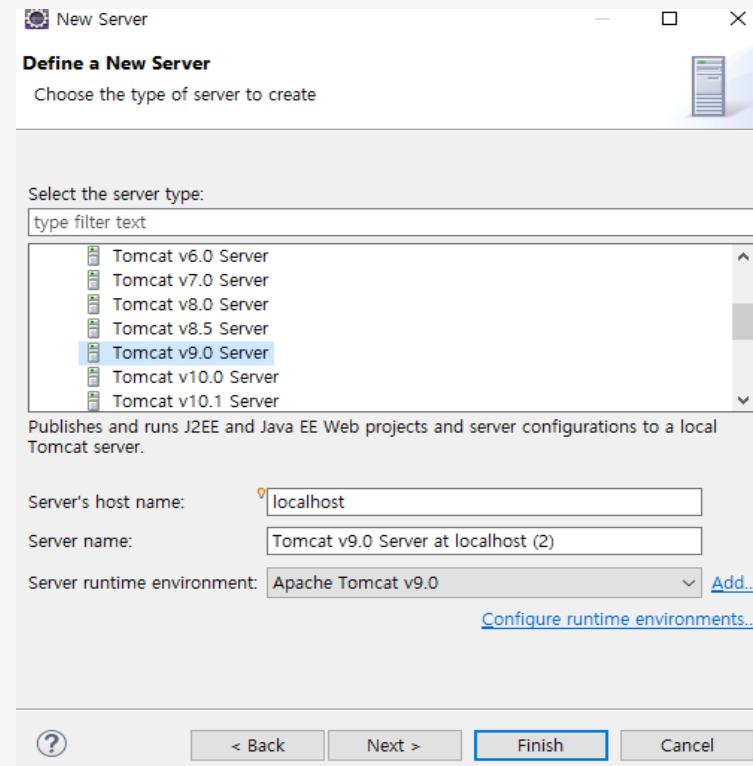


# 문제 3) 미들웨어 개발환경 구축 – 이클립스 내 톰캣 서버설정

상단UI바 Files -> Other 선택 후 Server 생성



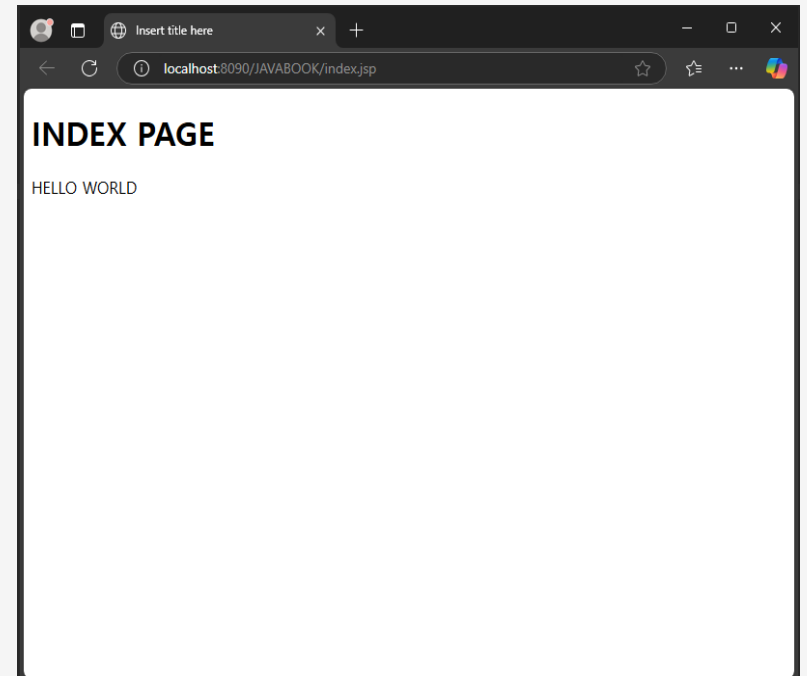
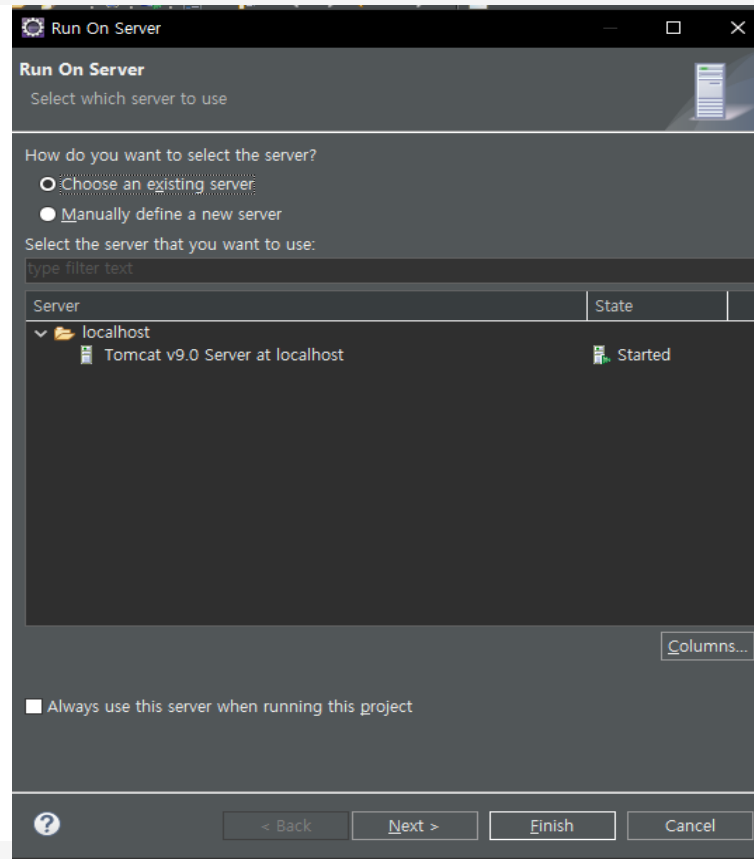
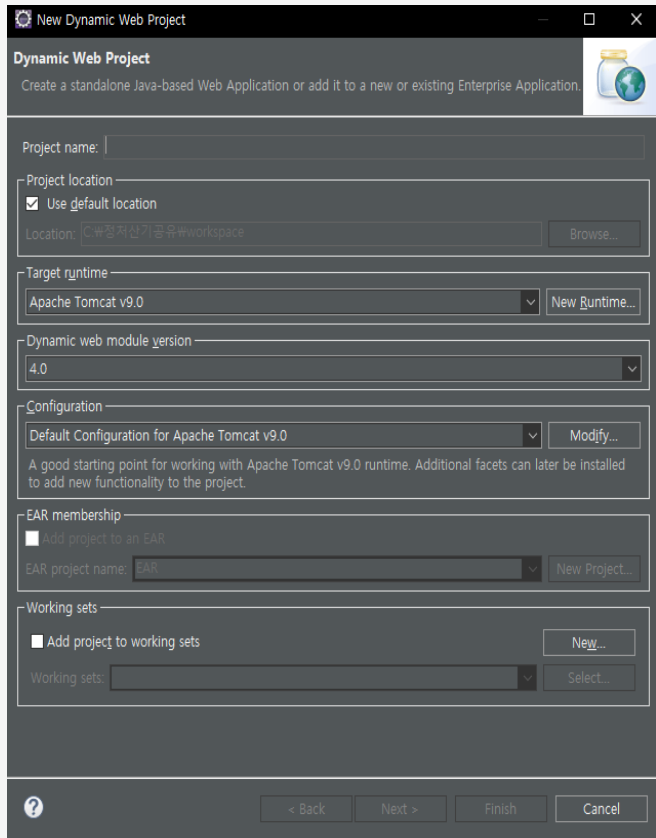
설치 후 포트 넘버 설정



Port Name  
Tomcat admin port  
HTTP/1.1

Port Number  
8091  
8090

## 문제 3) 미들웨어 개발환경 구축 – 웹페이지 동작 확인(index.html)



## 문제 4) 데이터베이스 & 계층형 데이터베이스의 특징 & DBMS

---

### (1) 데이터베이스 :

- 공용으로 활용하기 위해 통합하여 저장한 운영 데이터의 집합

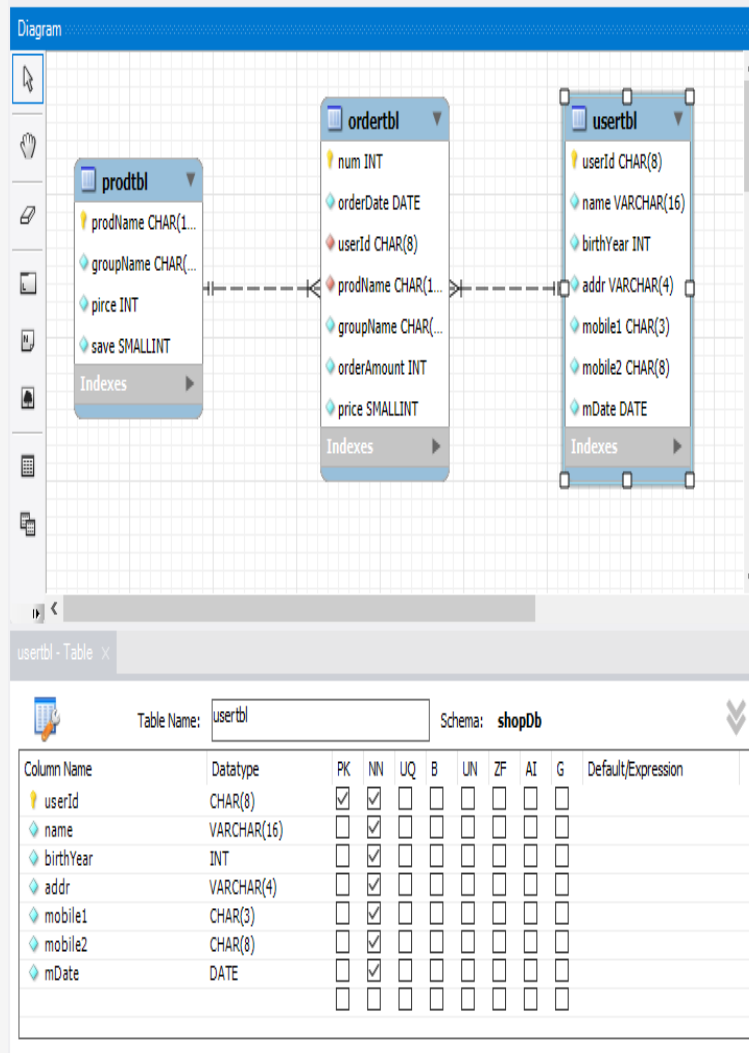
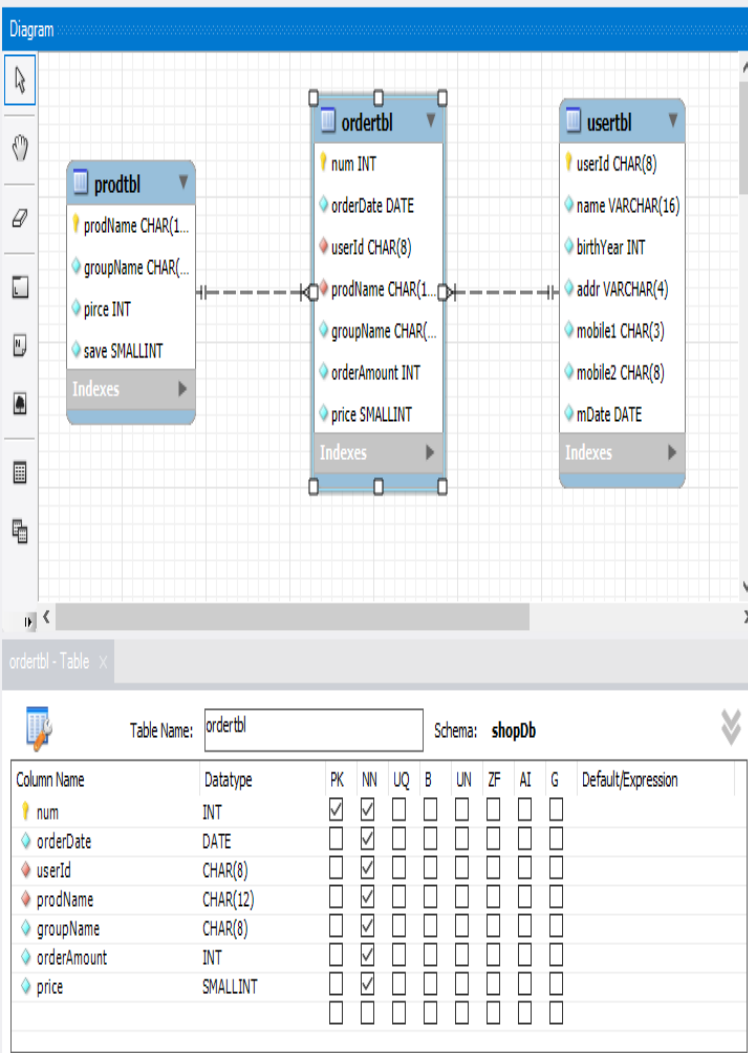
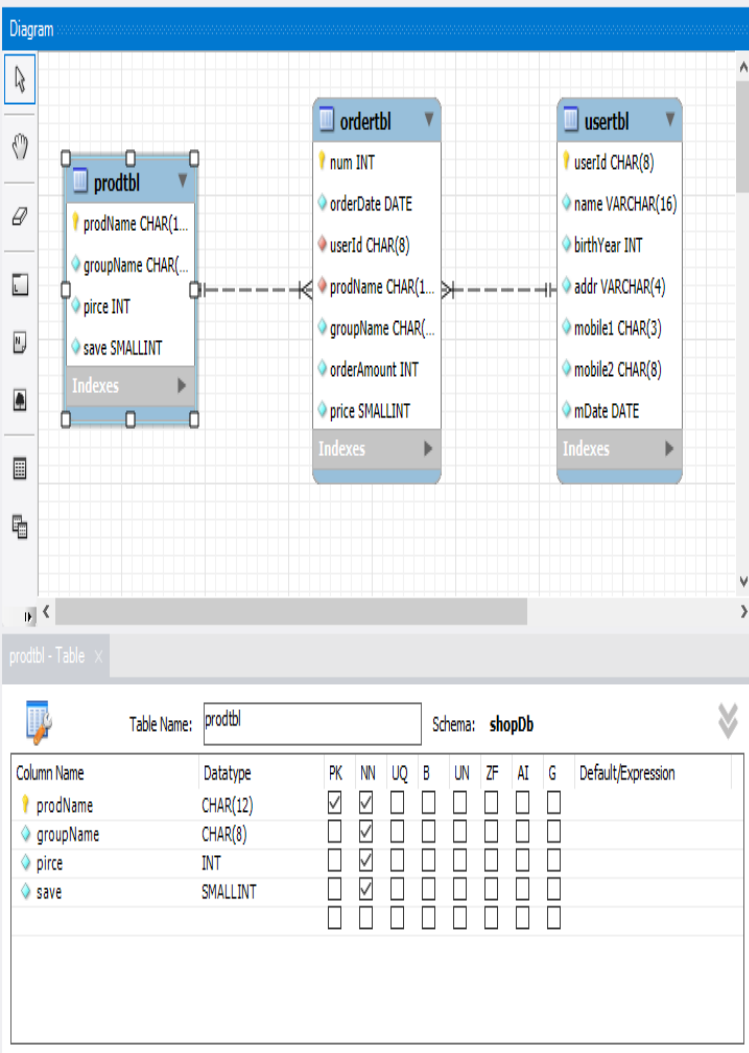
### (2) 계층형 데이터베이스의 특징 :

- 한 레코드는 필드로 구성되며 다른 레코드들의 포인터로 구성
- 빠른 접근 속도
- 데이터 변화에 대한 유연성 낮음

### (3) DBMS :


- 다수의 응용소프트웨어 및 사용자가 데이터베이스에 접근하여 원활하게 사용할 수 있도록 중간에서 관리해주는 시스템

## 문제 5) ERD - tbl



## 문제 5) ERD – FK 옵션

ordertbl - Table ×

 Table Name:  Schema: **shopDb**


Foreign Key Name	Referenced Table	Column	Referenced Column
fk_ordertbl_prodtbl	`shopDb`.`prodtbl`	<input type="checkbox"/> num	
fk_ordertbl_usertbl1	`shopDb`.`usertbl`	<input type="checkbox"/> orderDate	
		<input type="checkbox"/> userId	

Foreign Key Options

On Update:  ▼

On Delete:  ▼

ordertbl - Table ×

 Table Name:  Schema: **shopDb**

Foreign Key Name	Referenced Table	Column	Referenced Column
fk_ordertbl_prodtbl	`shopDb`.`prodtbl`	<input type="checkbox"/> num	
fk_ordertbl_usertbl1	`shopDb`.`usertbl`	<input type="checkbox"/> orderDate	
		<input checked="" type="checkbox"/> userId	userId
		<input type="checkbox"/> prodName	

Foreign Key Options

On Update:  ▼

On Delete:  ▼

## 문제 5) ERD Table 작성

The image displays three sequential screenshots of the SQL Server Enterprise Manager interface, illustrating the process of creating tables for an ERD. Each screenshot shows the 'Schemas' pane on the left, the 'Query 1' window in the center, and the 'Information' pane at the bottom.

**Screenshot 1: Creating ordertbl**

- Navigator:** The 'shopdb' database is selected, and the 'Tables' folder is expanded. 'ordertbl' is highlighted.
- Query 1:** The SQL statement is `SELECT * FROM shopdb.ordertbl;`
- Information:** The 'Table: usertbl' information is displayed, showing columns: `userId` (char(8) PK), `name` (varchar(16)), `birthYear` (int), `addr` (varchar(4)), `mobile1` (char(3)), and `mobile2` (char(8)).

**Screenshot 2: Creating prodtbl**

- Navigator:** The 'shopdb' database is selected, and the 'Tables' folder is expanded. 'prodtbl' is highlighted.
- Query 1:** The SQL statement is `SELECT * FROM shopdb.prodtbl;`
- Information:** The 'Table: usertbl' information is displayed, showing columns: `userId` (char(8) PK), `name` (varchar(16)), `birthYear` (int), `addr` (varchar(4)), `mobile1` (char(3)), and `mobile2` (char(8)).

**Screenshot 3: Creating usertbl**

- Navigator:** The 'shopdb' database is selected, and the 'Tables' folder is expanded. 'usertbl' is highlighted.
- Query 1:** The SQL statement is `SELECT * FROM shopdb.usertbl;`
- Information:** The 'Table: usertbl' information is displayed, showing columns: `userId` (char(8) PK), `name` (varchar(16)), `birthYear` (int), `addr` (varchar(4)), `mobile1` (char(3)), and `mobile2` (char(8)).

**Result Grid:** The bottom of each screenshot shows a 'Result Grid' with columns: `num`, `ord`, `prodNa`, `userId`, `name`, `birthYear`, `addr`, `mobile1`, `mobile2`, and `mDate`. The first row of data is shown with NULL values.

감사합니다. 이상 4조 었습니다.