Docker 실습

- Ubuntu 기반의 컨테이너 생성

```
G:\>docker pull ubuntu
Using default tag: latest
latest: Pulling from library/ubuntu
Digest: sha256:626ffe58f6e7566e00254b638eb7e0f3b11d4da9675088f4781a50ae288f3322
Status: Image is up to date for ubuntu:latest
docker.io/library/ubuntu:latest

G:\>docker run --name ubuntuServer -it ubuntu
```

- Ubuntu 기반 컨테이너에서 원하는 작업 시행
  - apt-get update
  - apt-get install vim
  - apt repository 서버 변경
    - vim /etc/apt/sources.list

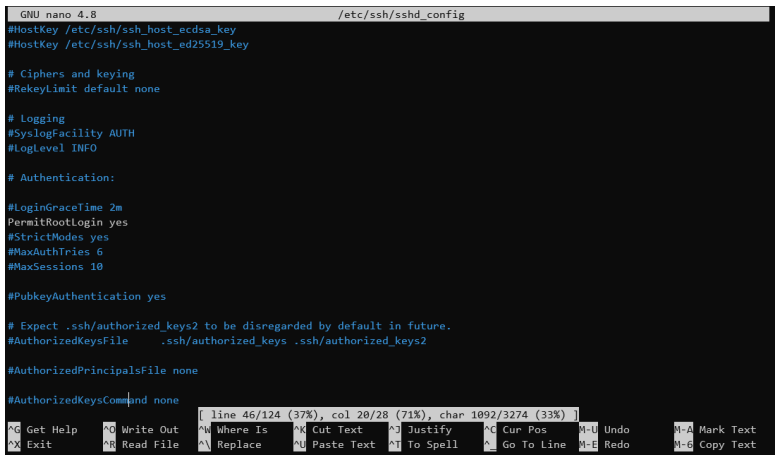
```
# See http://help.ubuntu.com/community/UpgradeNotes for how to upgrade to
# newer versions of the distribution.
deb http://archive.ubuntu.com/ubuntu/ focal main restricted
# deb-src http://archive.ubuntu.com/ubuntu/ focal main restricted

## Major bug fix updates produced after the final release of the
## distribution.
deb http://archive.ubuntu.com/ubuntu/ focal-updates main restricted
# deb-src http://archive.ubuntu.com/ubuntu/ focal-updates main restricted

## N.B. software from this repository is ENTIRELY UNSUPPORTED by the Ubuntu
## team. Also, please note that software in universe WILL NOT receive any
## review or updates from the Ubuntu security team.
deb http://archive.ubuntu.com/ubuntu/ focal universe
# deb-src http://archive.ubuntu.com/ubuntu/ focal universe
deb http://archive.ubuntu.com/ubuntu/ focal-updates universe
# deb-src http://archive.ubuntu.com/ubuntu/ focal-updates universe

## N.B. software from this repository is ENTIRELY UNSUPPORTED by the Ubuntu
## team, and may not be under a free licence. Please satisfy yourself as to
## your rights to use the software. Also, please note that software in
## multiverse WILL NOT receive any review or updates from the Ubuntu
## security team.
deb http://archive.ubuntu.com/ubuntu/ focal multiverse
# deb-src http://archive.ubuntu.com/ubuntu/ focal multiverse
deb http://archive.ubuntu.com/ubuntu/ focal-updates multiverse
# deb-src http://archive.ubuntu.com/ubuntu/ focal-updates multiverse

## N.B. software from this repository may not have been tested as
:%s/archive.ubuntu.com/mirror.kakao.com
```

vim을 이용하여 repository 서버 주소 변경

```
root@875ca5868a52:/# apt update
Get:1 http://mirror.kakao.com/ubuntu focal InRelease [265 kB]
Get:2 http://mirror.kakao.com/ubuntu focal-updates InRelease [114 kB]
Get:3 http://mirror.kakao.com/ubuntu focal-backports InRelease [108 kB]
Get:4 http://mirror.kakao.com/ubuntu focal-security InRelease [114 kB]
Get:5 http://mirror.kakao.com/ubuntu focal/main amd64 Packages [1275 kB]
Get:6 http://mirror.kakao.com/ubuntu focal/universe amd64 Packages [11.3 MB]
Get:7 http://mirror.kakao.com/ubuntu focal/multiverse amd64 Packages [177 kB]
Get:8 http://mirror.kakao.com/ubuntu focal/restricted amd64 Packages [33.4 kB]
Get:9 http://mirror.kakao.com/ubuntu focal-updates/restricted amd64 Packages [784 kB]
Get:10 http://mirror.kakao.com/ubuntu focal-updates/main amd64 Packages [1743 kB]
Get:11 http://mirror.kakao.com/ubuntu focal-updates/multiverse amd64 Packages [33.6 kB]
Get:12 http://mirror.kakao.com/ubuntu focal-updates/universe amd64 Packages [1099 kB]
Get:13 http://mirror.kakao.com/ubuntu focal-backports/universe amd64 Packages [21.7 kB]
Get:14 http://mirror.kakao.com/ubuntu focal-backports/main amd64 Packages [50.0 kB]
Get:15 http://mirror.kakao.com/ubuntu focal-security/multiverse amd64 Packages [30.1 kB]
Get:16 http://mirror.kakao.com/ubuntu focal-security/restricted amd64 Packages [726 kB]
Get:17 http://mirror.kakao.com/ubuntu focal-security/universe amd64 Packages [821 kB]
Get:18 http://mirror.kakao.com/ubuntu focal-security/main amd64 Packages [1326 kB]
Fetched 20.1 MB in 1s (14.1 MB/s)
```

변경 후, mirror.kakao.com으로 접속

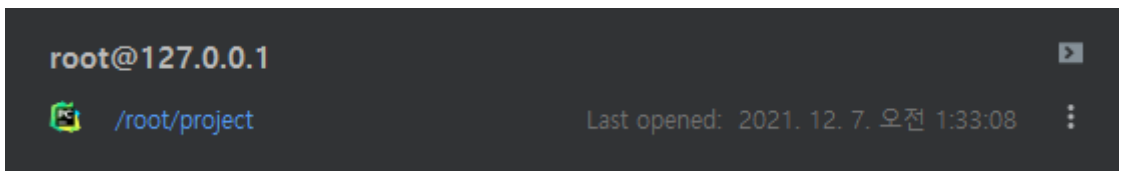
  - apt-get install python3 python3-pip
  - apt-get install openssh-server
  - ssh 설정 (원격 개발을 위한 설정)
    - nano /etc/ssh/sshd_config

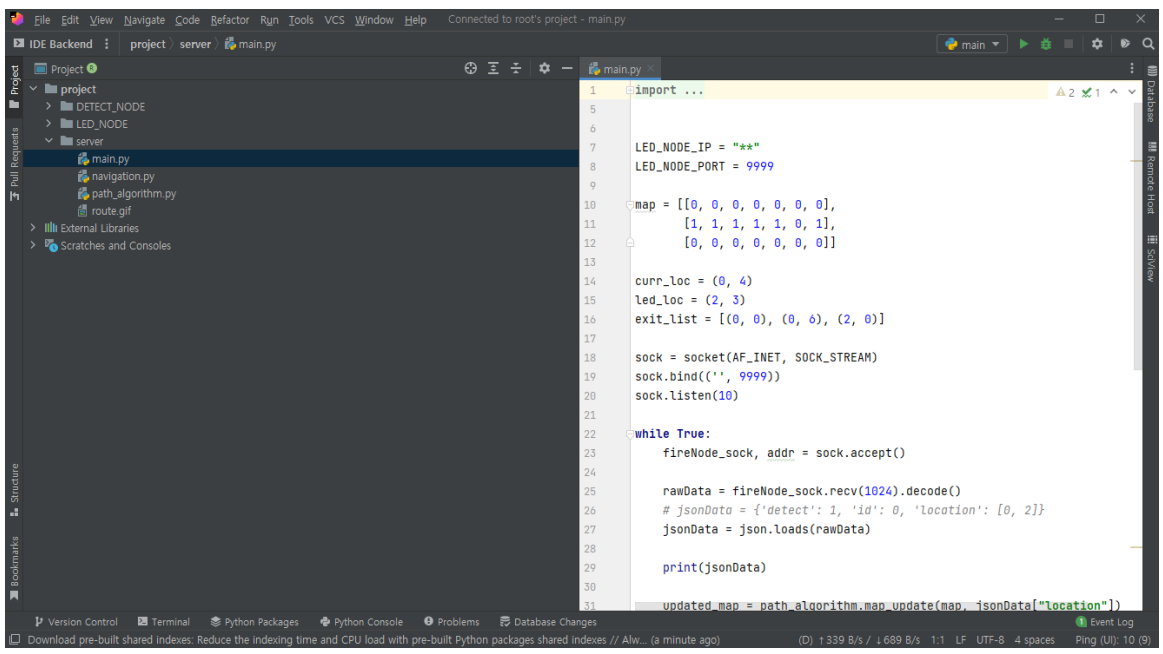


- service ssh start

```
root@875ca5868a52:/# service ssh start
 * Starting OpenBSD Secure Shell server sshd
```

- JetBrains Gateway를 이용한 원격 개발
  - JetBrains사의 Gateway를 이용하여, Docker Container에 SSH를 통하여 접근하며, 원격으로 개발 환경을 구성할 수 있음





Gateway를 이용한 원격 개발 환경

```
root@97b1c69fc428:~/project# ls
DETECT_NODE  LED_NODE  server
root@97b1c69fc428:~/project# cd server
root@97b1c69fc428:~/project/server# python3 main_.py
Run Server
```

개발한 내용 실행

- 도커 이미지 commit 및 저장
  - 앞서 작업한 내용들을 이미지로 snap하기 위해 commit 시행

```
G:\>docker commit server guideserver
sha256:9ec887965790dcfccdc94fb4b57a0c159b4b53749dc7d9ee890bd5169922dc05
```

  - 생성한 이미지를 tar파일로 저장

```
G:\>docker save -o guideserver.tar guideserver
```