

# AI스피커를 이용한 LoRa모듈제어

## [GitHub Link]

2019. 01. 26 토요일  
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Python 3.x 설치

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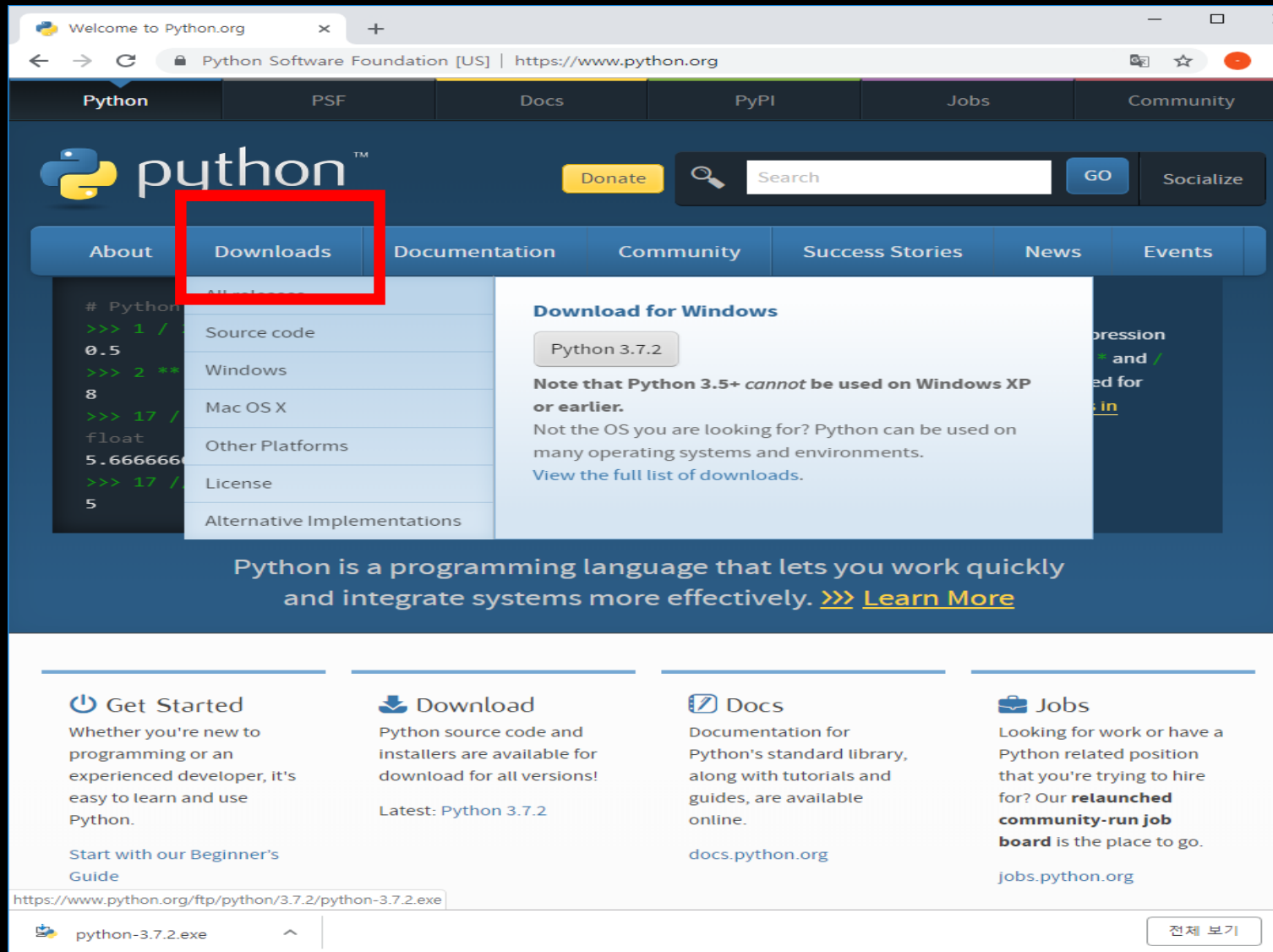
Wemos D1보드 설정

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Q & A



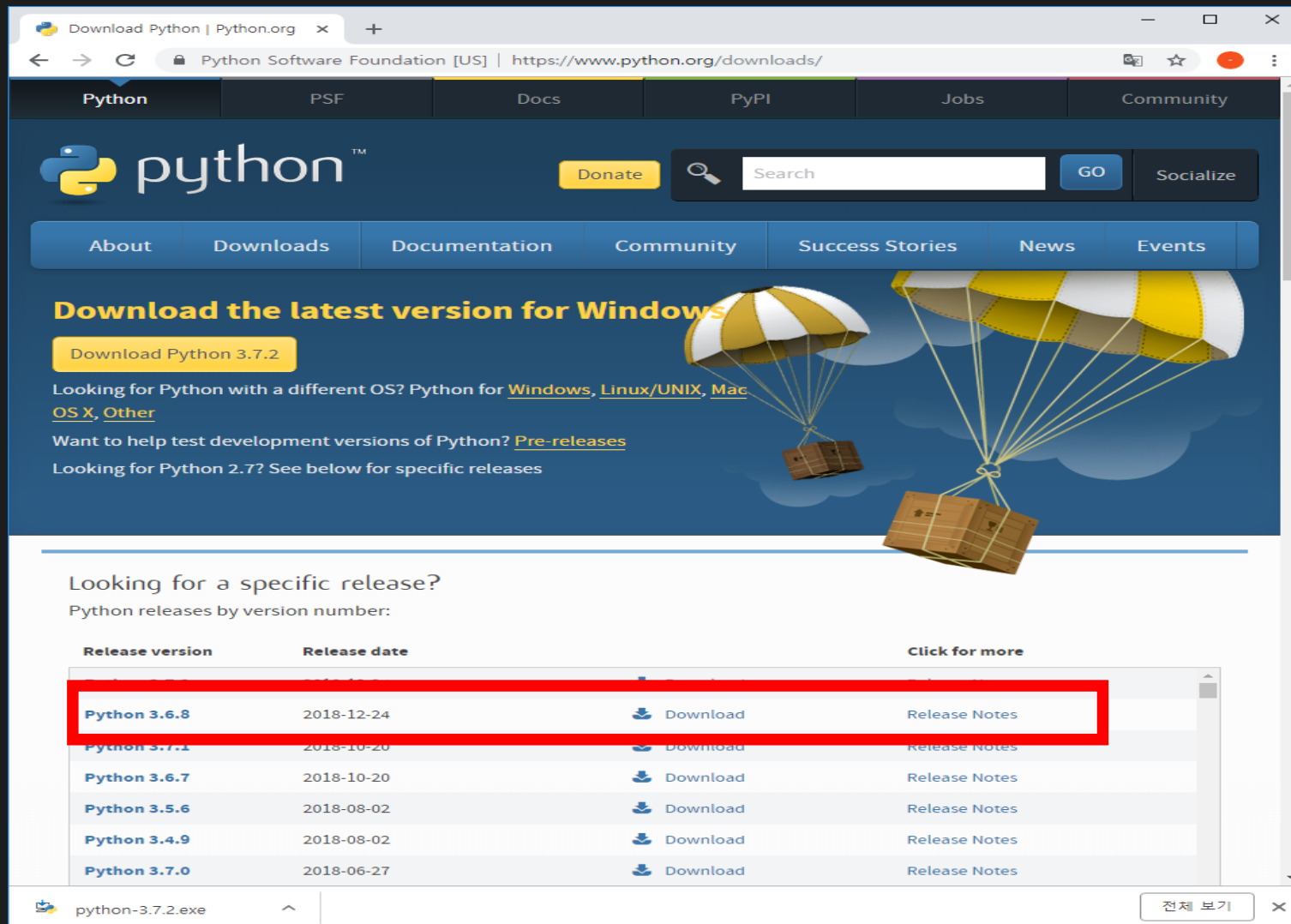
# 01. python 설치



The screenshot shows the Python.org website. The 'Downloads' link in the main navigation bar is highlighted with a red rectangle. A dropdown menu is visible under 'Downloads' with the following options: Source code, Windows, Mac OS X, Other Platforms, License, and Alternative Implementations. The 'Windows' option is selected, leading to the 'Download for Windows' section. This section displays 'Python 3.7.2' and includes a note: 'Note that Python 3.5+ cannot be used on Windows XP or earlier.' Below the note, it states 'Not the OS you are looking for? Python can be used on many operating systems and environments. View the full list of downloads.' At the bottom of the page, there are four columns: 'Get Started', 'Download', 'Docs', and 'Jobs'. The 'Download' column mentions 'Python source code and installers are available for download for all versions!' and 'Latest: Python 3.7.2'. The 'Docs' column mentions 'Documentation for Python's standard library, along with tutorials and guides, are available online.' and provides the link 'docs.python.org'. The 'Jobs' column mentions 'Looking for work or have a Python related position that you're trying to hire for? Our relaunched community-run job board is the place to go.' and provides the link 'jobs.python.org'. The 'Get Started' column mentions 'Whether you're new to programming or an experienced developer, it's easy to learn and use Python.' and provides the link 'Start with our Beginner's Guide'. The URL bar at the bottom shows 'https://www.python.org/ftp/python/3.7.2/python-3.7.2.exe'.

<https://www.python.org/>

# 01. python 설치



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Python Software Foundation [US] | <https://www.python.org/downloads/>

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Looking for a specific release?

Python releases by version number:

Release version	Release date	Click for more	
Python 3.6.8	2018-12-24	<a href="#">Download</a>	<a href="#">Release Notes</a>
Python 3.7.1	2018-10-20	<a href="#">Download</a>	<a href="#">Release Notes</a>
Python 3.6.7	2018-10-20	<a href="#">Download</a>	<a href="#">Release Notes</a>
Python 3.5.6	2018-08-02	<a href="#">Download</a>	<a href="#">Release Notes</a>
Python 3.4.9	2018-08-02	<a href="#">Download</a>	<a href="#">Release Notes</a>
Python 3.7.0	2018-06-27	<a href="#">Download</a>	<a href="#">Release Notes</a>

python-3.7.2.exe ^ 전제 보기 X

# 01. python 설치

Python Release Python 3.6.8 | P x +

Python Software Foundation [US] | <https://www.python.org/downloads/release/python-368/>

earlier versions of 3.6.x with the 10.6 variant should continue to work with either 3.6.8 variant without recompilation.

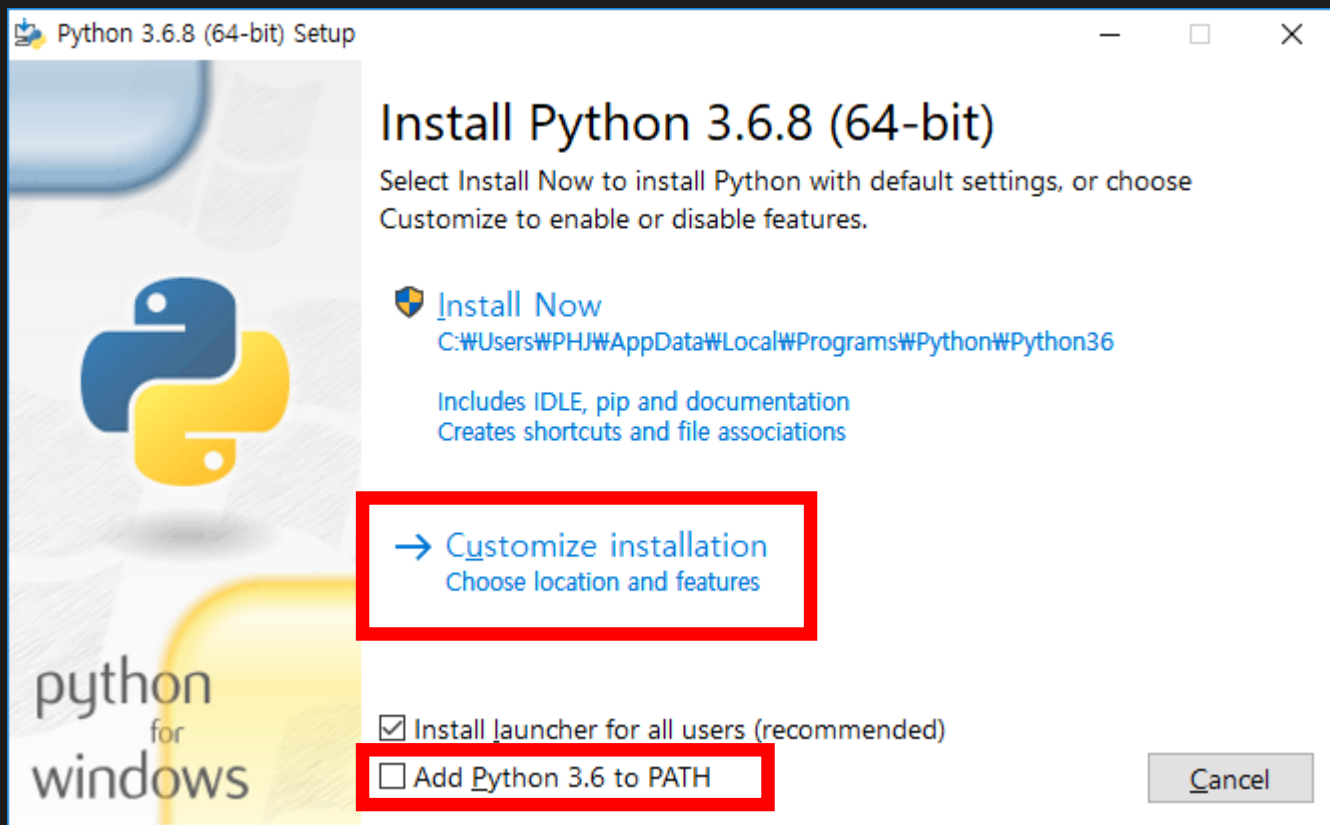
- Both python.org installer variants include private copies of OpenSSL 1.0.2. Please carefully read the Important Information displayed during installation for information about SSL/TLS certificate validation and the Install Certificates.command.

[Full Changelog](#)

## Files

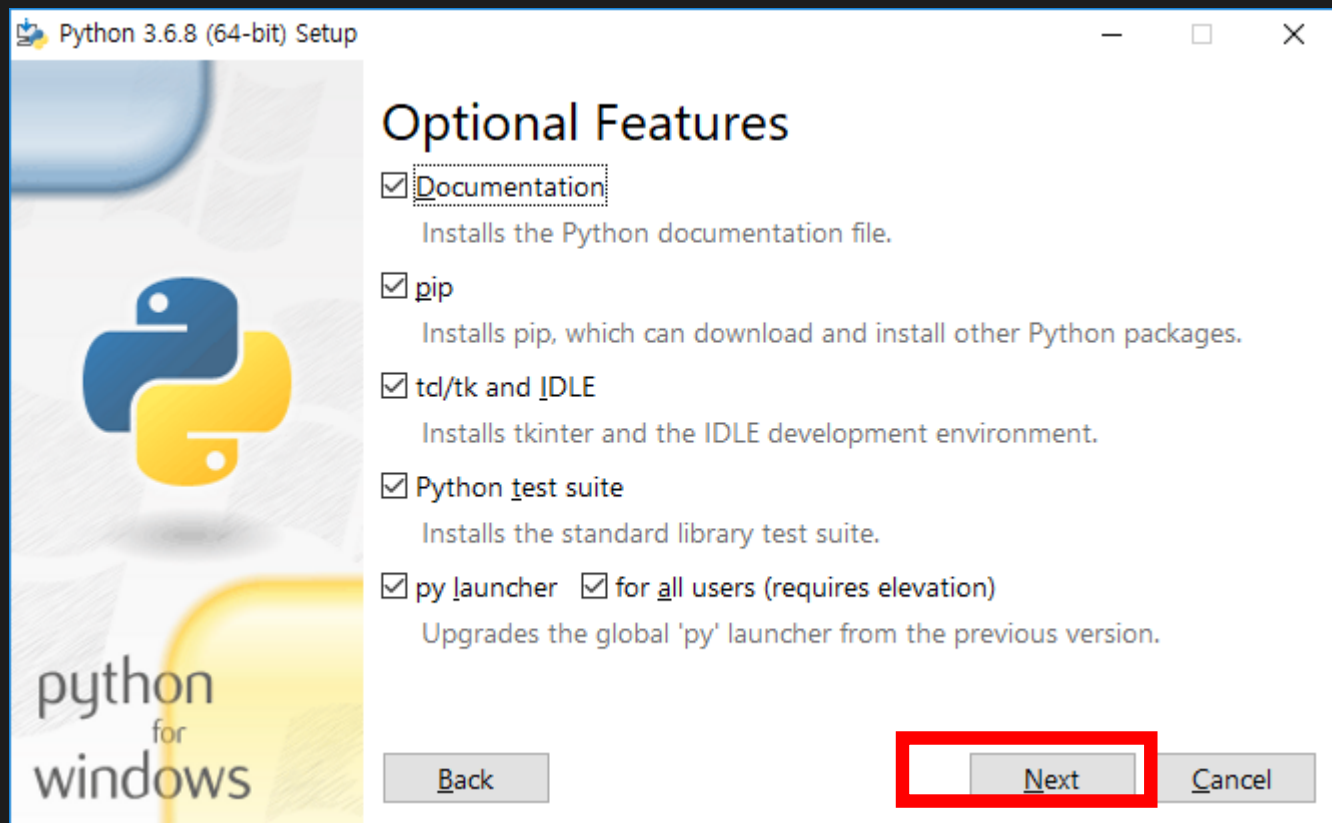
Version	Operating System	Description	MD5 Sum	File Size	GPG
<a href="#">Gzipped source tarball</a>	Source release		48f393a04c2e66c77bfc114e589ec630	23010188	<a href="#">SIG</a>
<a href="#">XZ compressed source tarball</a>	Source release		51aac91bdf8be95ec0a62d174890821a	17212420	<a href="#">SIG</a>
<a href="#">macOS 64-bit/32-bit installer</a>	Mac OS X	for Mac OS X 10.6 and later	eb1a23d762946329c2aa3448d256d421	33258809	<a href="#">SIG</a>
<a href="#">macOS 64-bit installer</a>	Mac OS X	for OS X 10.9 and later	786c4d9183c754f58751d52f509bc971	27073838	<a href="#">SIG</a>
<a href="#">Windows help file</a>	Windows		0b04278f5bdb8ee85ae5ae66af0430b2	7868305	<a href="#">SIG</a>
<a href="#">Windows x86-64 embeddable zip file</a>	Windows	for AMD64/EM64T/x64	73df7cb2f1500ff36d7dbeac3968711	7276004	<a href="#">SIG</a>
<a href="#">Windows x86-64 executable installer</a>	Windows	for AMD64/EM64T/x64	72f37686b7ab240ef70fdb931bdf3cb5	31830944	<a href="#">SIG</a>
<a href="#">Windows x86-64 web-based installer</a>	Windows	for AMD64/EM64T/x64	39dde5f535c16d642e84fc7a69f43e05	1331744	<a href="#">SIG</a>
<a href="#">Windows x86 embeddable zip file</a>	Windows		60470b4cceba52094121d43cd3f6ce3a	6560373	<a href="#">SIG</a>
<a href="#">Windows x86 executable installer</a>	Windows		9c7b1ebdd3a8df0eebfda2f107f1742c	30807656	<a href="#">SIG</a>
<a href="#">Windows x86 web-based installer</a>	Windows		80de96338691698e10a935ecd0bdaacb	1296064	<a href="#">SIG</a>

## 01. python 설치

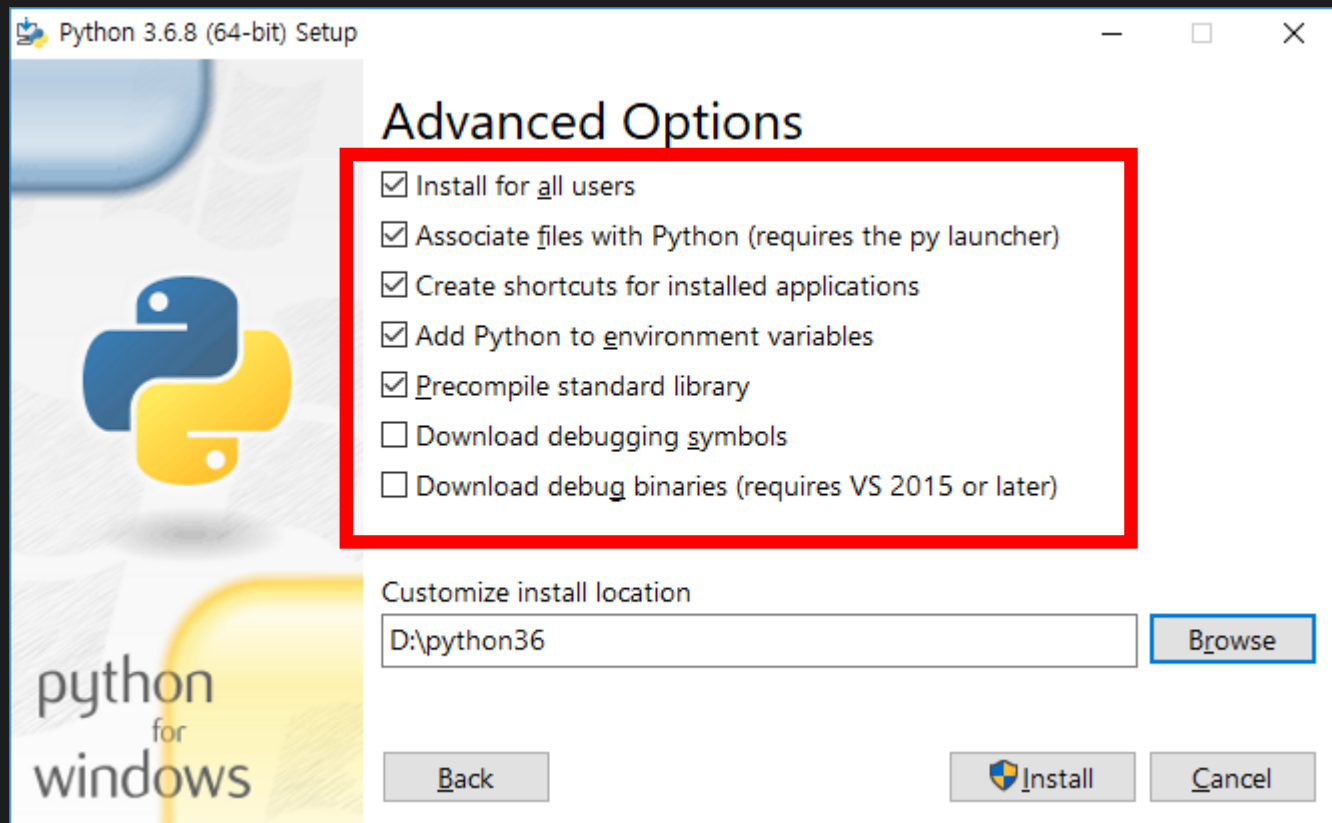


체크후 넘어갑니다.

## 01. python 설치



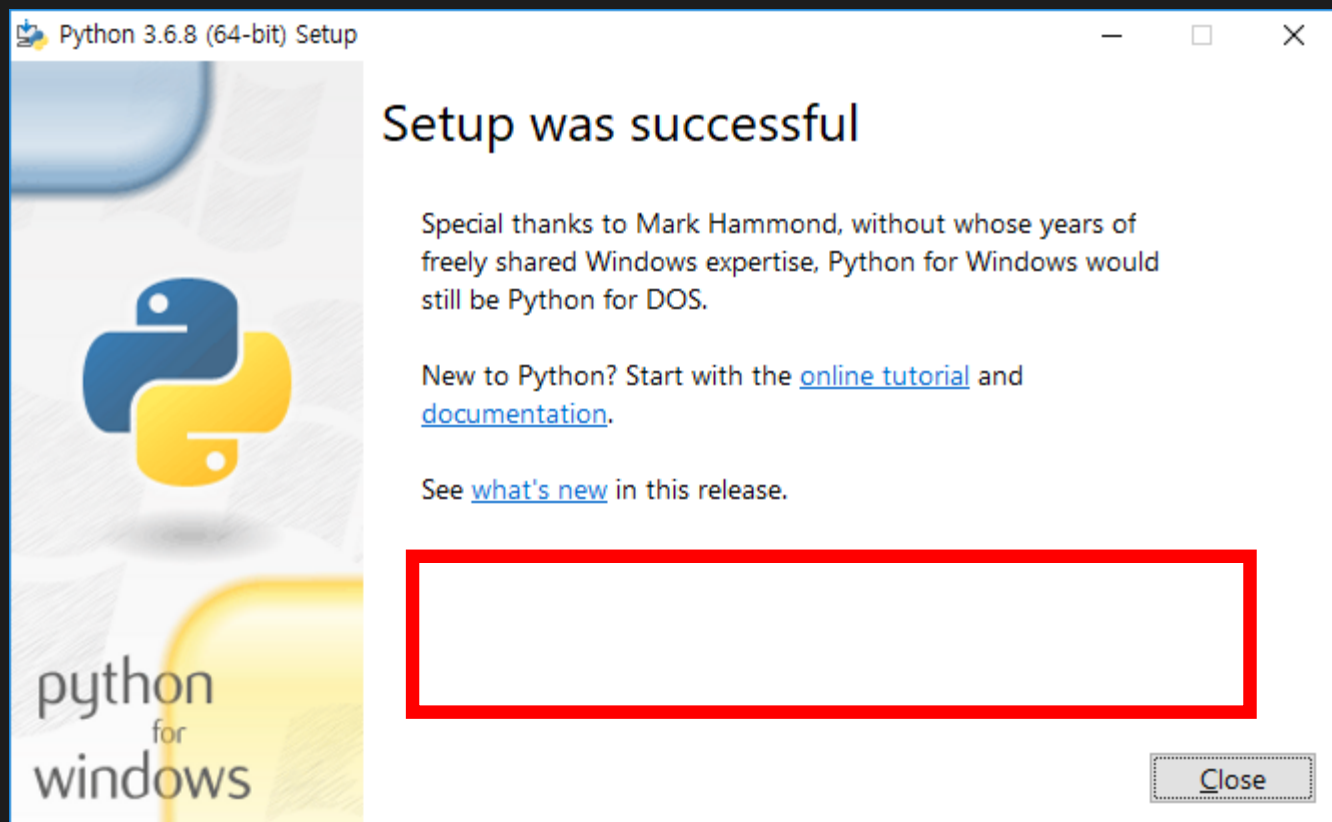
## 01. python 설치



Environment var 나 install for all user  
잘 확인후 다음



## 01. python 설치



네모칸에 disable limit 뜨면 클릭

# 01. python 설치

C:\WINDOWS\system32\cmd.exe - python

Microsoft Windows [Version 10.0.17134.523]  
(c) 2018 Microsoft Corporation. All rights reserved.

```
C:\Users\PHJ>python
Python 3.6.8 (tags/v3.6.8:3c6b436a57, Dec 24 2018, 00:16:47) [MSC v.1916 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>> exit
Use exit() or Ctrl-Z plus Return to exit
>>>
```

➤ Python

명령어를 입력하여 인터프리터로 잘변하면

성공

## 02. 패키지 설치

```
C:\WINDOWS\system32\cmd.exe - pip install google-cloud-speech
Microsoft Windows [Version 10.0.17134.523]
(c) 2018 Microsoft Corporation. All rights reserved.

C:\Users\PHJ>pip install google-cloud-speech
Collecting google-cloud-speech
  Downloading https://files.pythonhosted.org/packages/d8/4d/f43a89ef3ce0c8a56eeea4beef61be0cc350586e2d7cbcd2183ce7d8617
/google_cloud_speech-0.36.2-py2.py3-none-any.whl (60kB)
    100% |#####| 61kB 561kB/s
Collecting google-api-core[grpc]<2.0.0dev,>=1.6.0 (from google-cloud-speech)
  Downloading https://files.pythonhosted.org/packages/8b/01/13758ff9b970008ccf9e0dcc3b86d0e01937d74859a2c6142c9c2bdb4da
/google_api_core-1.7.0-py2.py3-none-any.whl (64kB)
    100% |#####| 64kB 1.5MB/s
Collecting googleapis-common-protos!=1.5.4,<2.0dev,>=1.5.3 (from google-api-core[grpc]<2.0.0dev,>=1.6.0->google-cloud-sp
eech)
  Downloading https://files.pythonhosted.org/packages/61/29/1549f61917eadd11650e42b78b4afcf9cb467157af4510ab8cb59535f14
/googleapis-common-protos-1.5.6.tar.gz
Requirement already satisfied: setuptools>=34.0.0 in d:\python36\lib\site-packages (from google-api-core[grpc]<2.0.0dev,
>=1.6.0->google-cloud-speech) (40.6.2)
Collecting six>=1.10.0 (from google-api-core[grpc]<2.0.0dev,>=1.6.0->google-cloud-speech)
  Downloading https://files.pythonhosted.org/packages/73/fb/00a976f728d0d1fecfe898238ce23f502a721c0ac0ecfedb80e0d88c64e9
/six-1.12.0-py2.py3-none-any.whl
Collecting google-auth<2.0dev,>=0.4.0 (from google-api-core[grpc]<2.0.0dev,>=1.6.0->google-cloud-speech)
  Downloading https://files.pythonhosted.org/packages/4e/85/71b2dfbf5b4241cd031cc333ed71f90a271074a97cb2c517bb65f07a1a90
/google_auth-1.6.2-py2.py3-none-any.whl (73kB)
    100% |#####| 81kB 1.5MB/s
```

패키지 설치

`pip install google-cloud-speech`

## 02. 패키지 설치

```
C:\#WINDOWS\system32\cmd.exe

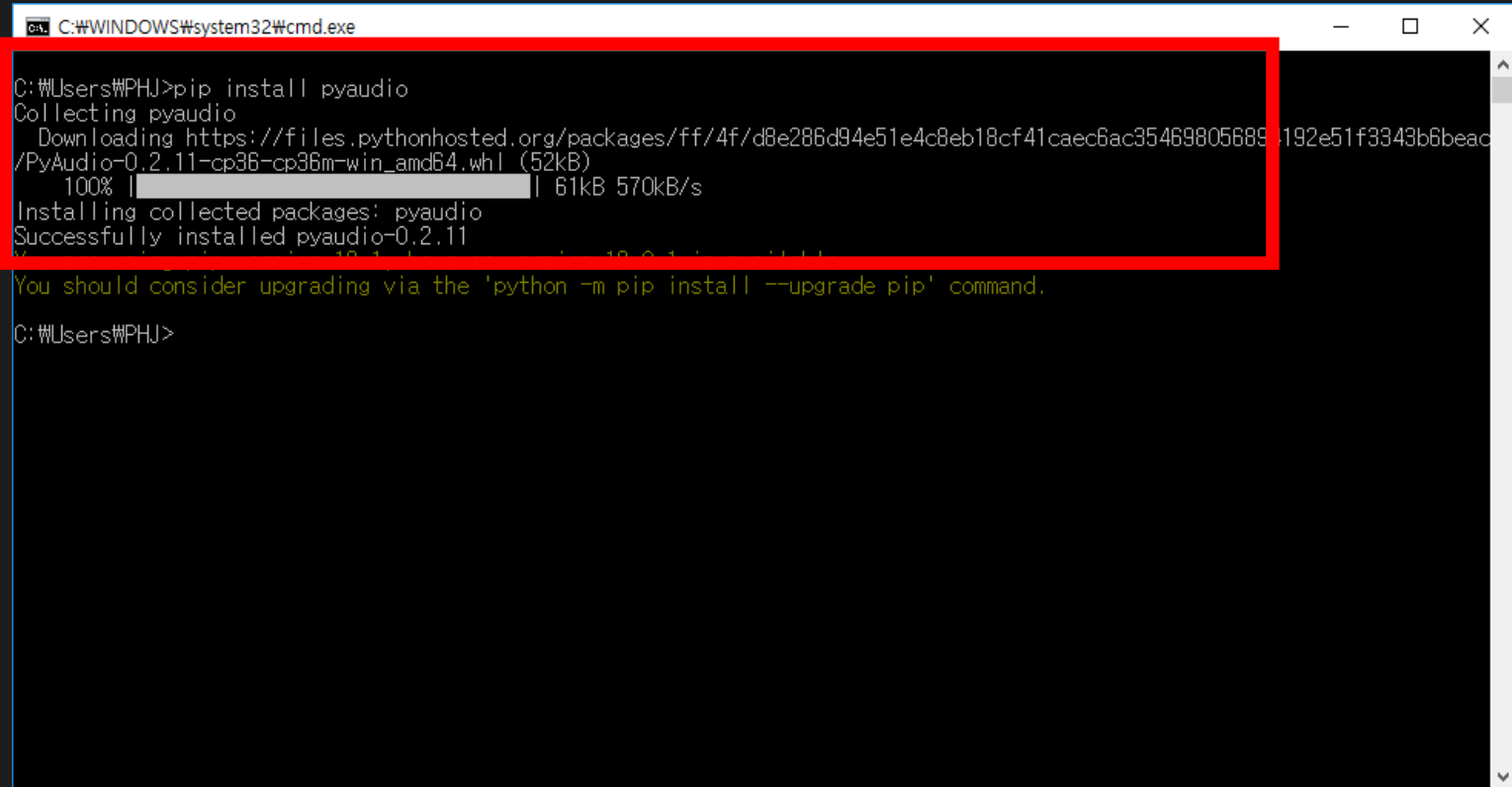
C:\Users\PHJ>pip install pyaudio
Collecting pyaudio
  Downloading https://files.pythonhosted.org/packages/ff/4f/d8e286d94e51e4c8eb18cf41caec6ac35469805689192e51f3343b6bead/PyAudio-0.2.11-cp36-cp36m-win_amd64.whl (52kB)
    100% |#####| 61kB 570kB/s
Installing collected packages: pyaudio
Successfully installed pyaudio-0.2.11
You should consider upgrading via the 'python -m pip install --upgrade pip' command.

C:\Users\PHJ>
```

패키지 설치

pip install pyaudio

## 02. 패키지 설치

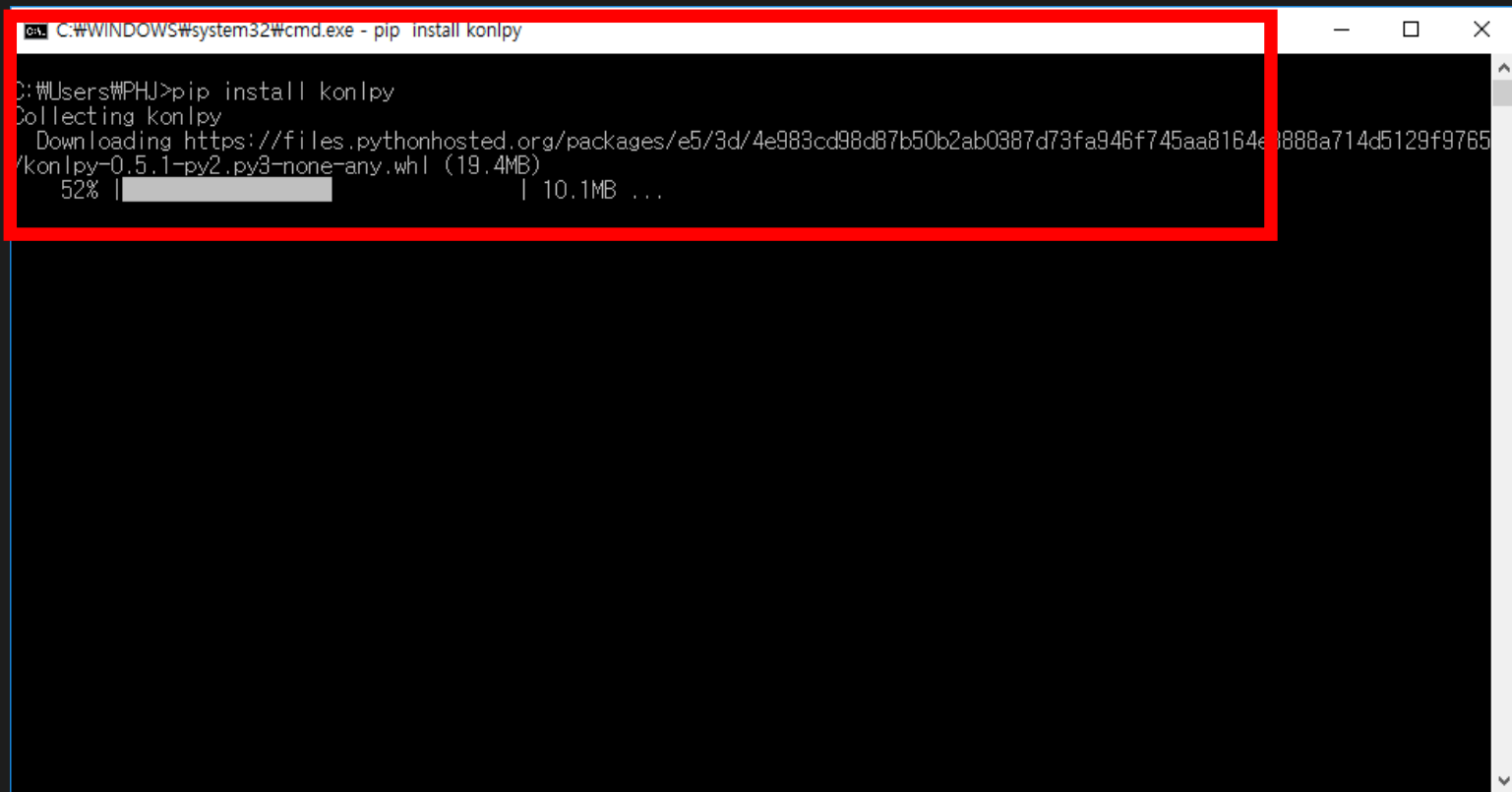


```
C:\WINDOWS\system32\cmd.exe
C:\Users\PHJ>pip install pyaudio
Collecting pyaudio
  Downloading https://files.pythonhosted.org/packages/ff/4f/d8e286d94e51e4c8eb18cf41caec6ac35469805689192e51f3343b6bead/PyAudio-0.2.11-cp36-cp36m-win_amd64.whl (52kB)
    100% |#####| 61kB 570kB/s
Installing collected packages: pyaudio
Successfully installed pyaudio-0.2.11
You should consider upgrading via the 'python -m pip install --upgrade pip' command.
C:\Users\PHJ>
```

패키지 설치

pip install pyaudio

## 02. 패키지 설치



```
C:\> C:\WINDOWS\system32\cmd.exe - pip install konlpy

C:\Users\PHJ>pip install konlpy
Collecting konlpy
  Downloading https://files.pythonhosted.org/packages/e5/3d/4e983cd98d87b50b2ab0387d73fa946f745aa8164e0888a714d5129f9765/konlpy-0.5.1-py2.py3-none-any.whl (19.4MB)
    52% |██████████| 10.1MB ...
```

패키지 설치

pip install konlpy

<http://konlpy.org/en/latest/install/#id2>

## 02. 패키지 설치

```
C:\WINDOWS\system32\cmd.exe
copying jpype\pykeywords.py -> build\lib.win-amd64-3.6\jpype
copying jpype\_refdaemon.py -> build\lib.win-amd64-3.6\jpype
copying jpype\_windows.py -> build\lib.win-amd64-3.6\jpype
copying jpype\_init__.py -> build\lib.win-amd64-3.6\jpype
creating build\lib.win-amd64-3.6\jpype\awt
copying jpype\awt\_init__.py -> build\lib.win-amd64-3.6\jpype\awt
creating build\lib.win-amd64-3.6\jpype\awt\event
copying jpype\awt\event\WindowAdapter.py -> build\lib.win-amd64-3.6\jpype\awt\event
copying jpype\awt\event\_init__.py -> build\lib.win-amd64-3.6\jpype\awt\event
creating build\lib.win-amd64-3.6\jpype\pex
copying jpype\_init__.py -> build\lib.win-amd64-3.6\jpype\pex
creating build\lib.win-amd64-3.6\jpype\pex\swing
copying jpype\pex\swing\AbstractAction.py -> build\lib.win-amd64-3.6\jpype\pex\swing
copying jpype\pex\swing\pyutils.py -> build\lib.win-amd64-3.6\jpype\pex\swing
copying jpype\pex\swing\_init__.py -> build\lib.win-amd64-3.6\jpype\pex\swing
running build_ext
building '_jpype' extension
error: Microsoft Visual C++ 14.0 is required. Get it with "Microsoft Visual C++ Build Tools": https://visualstudio.microsoft.com/downloads/

-----
Command "d:\python36\python.exe -u -c "import setuptools, tokenize;__file__='C:\Users\PHJ\AppData\Local\Temp\pip-install-nsu9lf95\JPype1\setup.py';f=getattr(tokenize, 'open', open)(__file__);code=f.read().replace('\r\n', '\n');f.close();exec(compile(code, __file__, 'exec'))" install --record C:\Users\PHJ\AppData\Local\Temp\pip-record-3xzan6x1\install-records.txt --single-version-externally-managed --compile" failed with error code 1 in C:\Users\PHJ\AppData\Local\Temp\pip-install-nsu9lf95\JPype1
You are using pip version 18.1, however version 19.0.1 is available.
You should consider upgrading via the 'python -m pip install --upgrade pip' command.

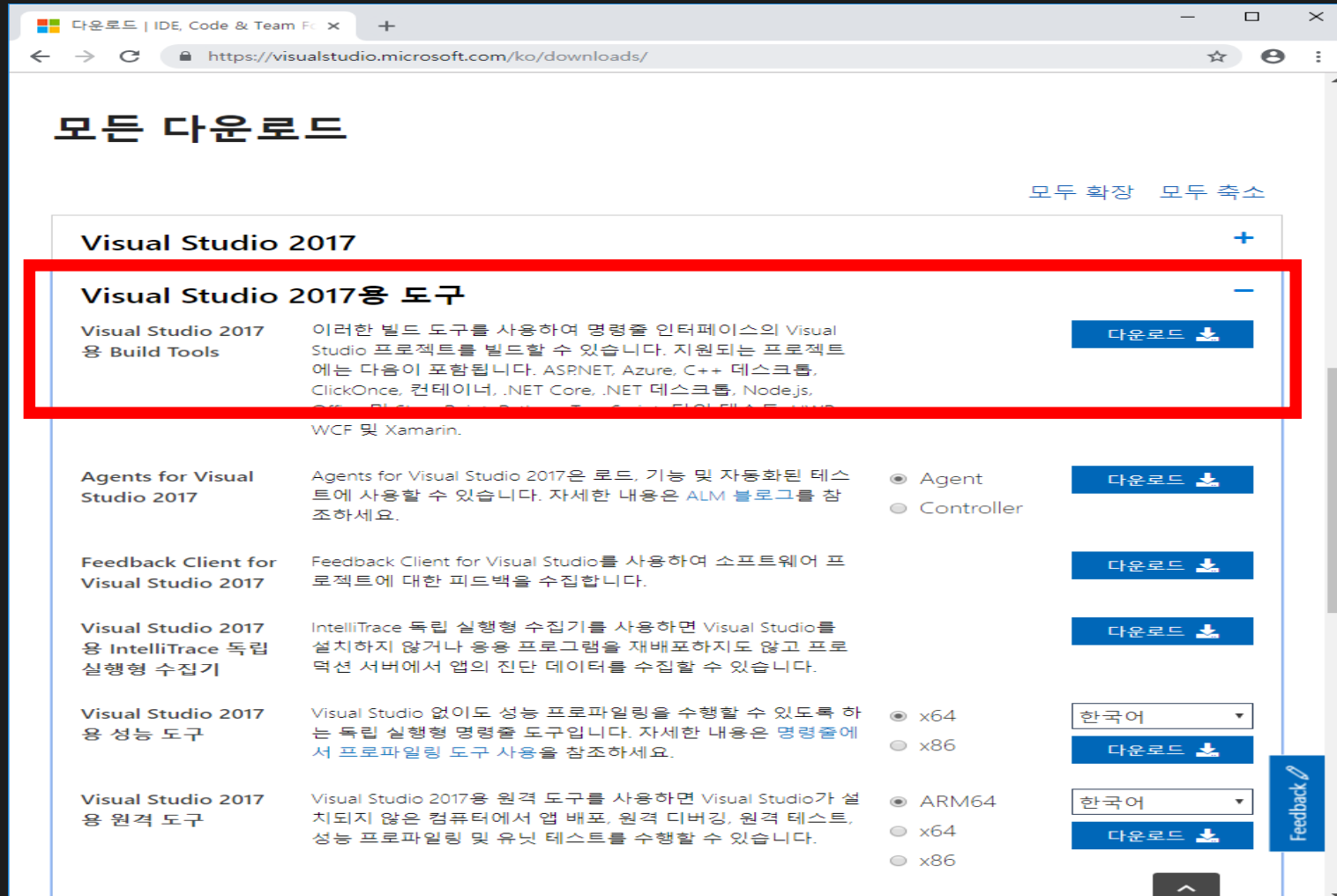
C:\Users\PHJ>python -m pip install --upgrade pip
```

C++ SDK 오류시

<https://visualstudio.microsoft.com/ko/downloads/>

설치

## 02. 패키지 설치



모든 다운로드

모두 확장 모두 축소

### Visual Studio 2017

#### Visual Studio 2017용 도구

Visual Studio 2017용 Build Tools

이러한 빌드 도구를 사용하여 명령줄 인터페이스의 Visual Studio 프로젝트를 빌드할 수 있습니다. 지원되는 프로젝트에는 다음이 포함됩니다. ASP.NET, Azure, C++ 데스크톱, ClickOnce, 컨테이너, .NET Core, .NET 데스크톱, Node.js, WCF 및 Xamarin.

다운로드

Agents for Visual Studio 2017

Agents for Visual Studio 2017은 로드, 기능 및 자동화된 테스트에 사용할 수 있습니다. 자세한 내용은 [ALM 블로그](#)를 참조하세요.

Agent  
Controller

다운로드

Feedback Client for Visual Studio 2017

Feedback Client for Visual Studio를 사용하여 소프트웨어 프로젝트에 대한 피드백을 수집합니다.

다운로드

Visual Studio 2017용 IntelliTrace 독립 실행형 수집기

IntelliTrace 독립 실행형 수집기를 사용하면 Visual Studio를 설치하지 않거나 응용 프로그램을 재배포하지도 않고 프로덕션 서버에서 앱의 진단 데이터를 수집할 수 있습니다.

다운로드

Visual Studio 2017용 성능 도구

Visual Studio 없이도 성능 프로파일링을 수행할 수 있도록 하는 독립 실행형 명령줄 도구입니다. 자세한 내용은 [명령줄에서 프로파일링 도구 사용](#)을 참조하세요.

x64  
x86

한국어  
다운로드

Visual Studio 2017용 원격 도구

Visual Studio 2017용 원격 도구를 사용하면 Visual Studio가 설치되지 않은 컴퓨터에서 앱 배포, 원격 디버깅, 원격 테스트, 성능 프로파일링 및 유닛 테스트를 수행할 수 있습니다.

ARM64  
x64  
x86

한국어  
다운로드

Feedback

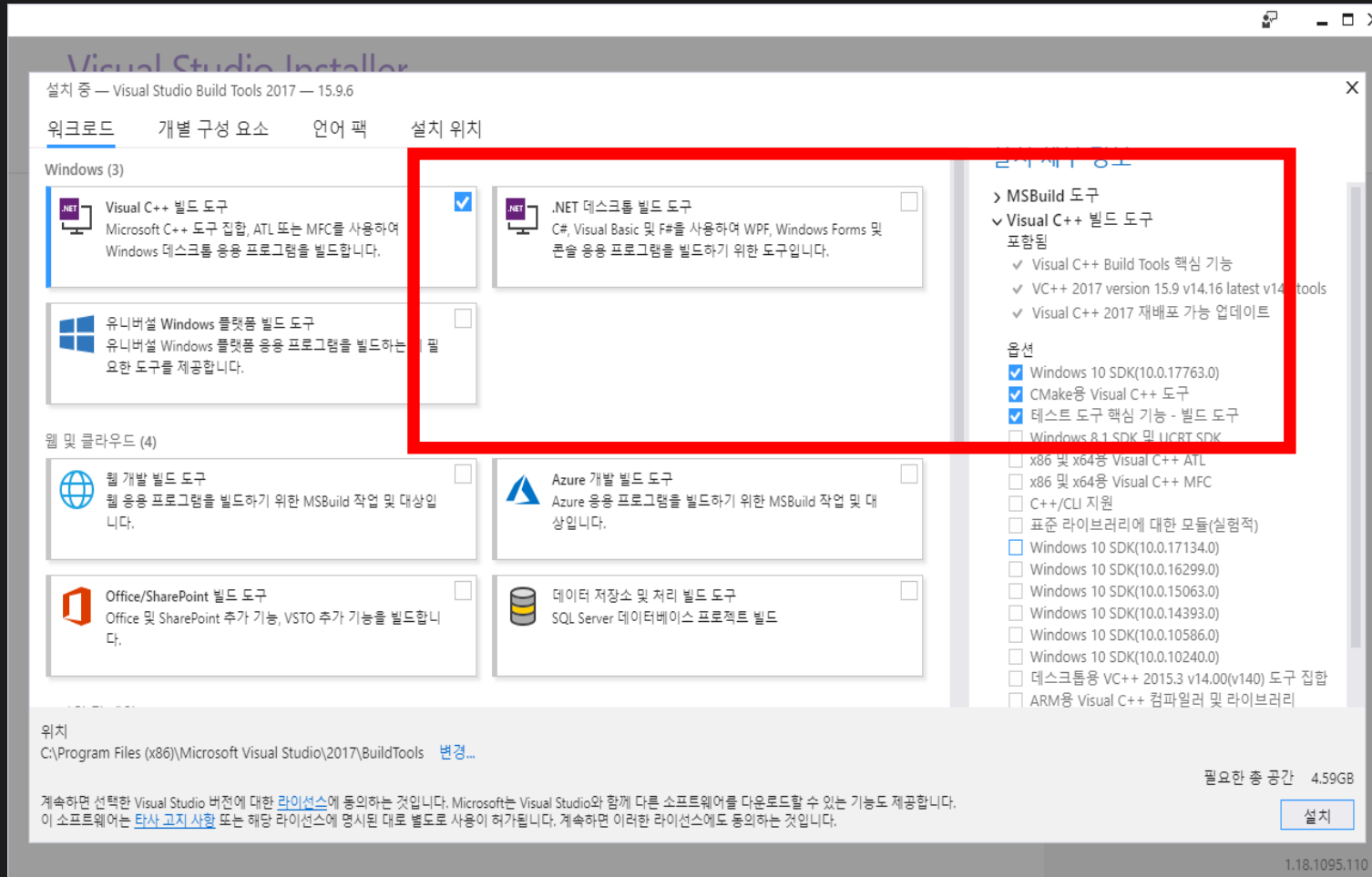
C++ SDK 오류시

<https://visualstudio.microsoft.com/ko/downloads/>

설치



## 02. 패키지 설치



설치시 네모칸 SDK 체크확인

C++ 빌드 도구 설치

## 02. 패키지 설치

The screenshot shows the PyCharm IDE with a project named 'yuhyeon'. The main editor displays a Python script 'AI\_Speaker\_By\_Mic.py'. The script includes a docstring with instructions to install 'pyaudio' and an example usage. Below the script, the 'Run' window shows the execution output. The output indicates that the process finished with exit code 1, and a red box highlights the error message: 'jypype.JVMNotFoundException: No JVM shared library file (jvm.dll) found. Try setting up the JAVA\_HOME environment variable properly.'

```
# -*- coding: utf-8 -*-
# /usr/bin/env python
"""Google Cloud Speech API sample application using the streaming API.

NOTE: This module requires the additional dependency `pyaudio`. To install
using pip:

    pip install pyaudio

Example usage:

    python transcribe_streaming_mic.py
"""
# [START import_libraries]
from __future__ import division
import re
import sys
from google.cloud import speech
from google.cloud.speech import enums
from google.cloud.speech import types
import pyaudio
from six.moves import queue
from konlpy.tag import Twitter
import requests
twitter = Twitter()
# [END import_libraries]
# Audio recording parameters
RATE = 16000
CHUNK = int(RATE / 10) # 100ms
# 명령어 parameters

def main():
    """Main function"""
    # ... (rest of the code) ...

if __name__ == '__main__':
    main()
```

Run: AI\_Speaker\_By\_Mic ×

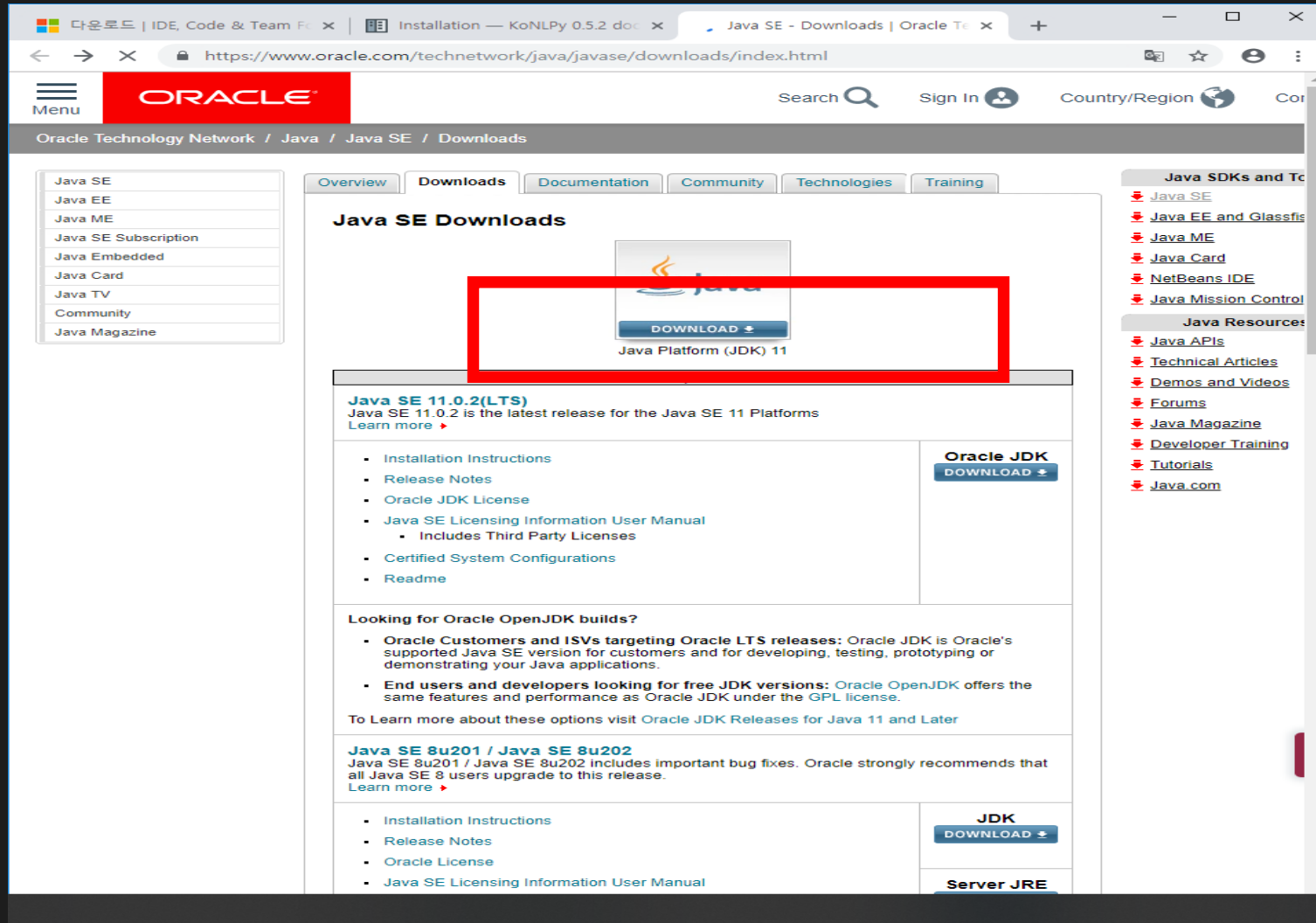
File "D:\python36\lib\site-packages\konlpy\tag\okt.py", line 17, in Twitter  
return Okt(jvm\_path)  
File "D:\python36\lib\site-packages\konlpy\tag\okt.py", line 87, in \_\_init\_\_  
jvm.init\_jvm(jvm\_path, max\_heap\_size)  
File "D:\python36\lib\site-packages\jypype\core.py", line 121, in get\_default\_jvm\_path  
return finder.get\_jvm\_path()  
File "D:\python36\lib\site-packages\jypype\jvmfinder.py", line 153, in get\_jvm\_path  
.format(self.\_libfile))  
jypype.jvmfinder.JVMNotFoundException: No JVM shared library file (jvm.dll) found. Try setting up the JAVA\_HOME environment variable properly.

Process finished with exit code 1

코드 실행해보기

If JVM 오류시

## 02. 패키지 설치



JDK 설치

<https://www.oracle.com/technetwork/java/javase/downloads/index.html>

## 02. 패키지 설치

Oracle Technology Network / Java / Java SE / Downloads

**Java SE Development Kit 11 Downloads**

Thank you for downloading this release of the Java™ Platform, Standard Edition Development Kit (JDK™). The JDK is a development environment for building applications, and components using the Java programming language.

The JDK includes tools useful for developing and testing programs written in the Java programming language and running on the Java platform.

**Important changes in Oracle JDK 11 License**

With JDK 11 Oracle has updated the license terms on which we offer the Oracle JDK. The new Oracle Technology Network License Agreement for Oracle Java SE is substantially different from the licenses under which previous versions of the JDK were offered. Please review the new terms carefully before downloading and using this product.

Oracle also offers this software under the [GPL License](https://www.gnu.org/licenses/gpl-3.0.html) on [jdk.java.net/11](https://jdk.java.net/11)

See also:

- Java Developer Newsletter: From your Oracle account, select **Subscriptions**, expand **Technology**, and subscribe to **Java**.
- Java Developer Day hands-on workshops (free) and other events
- Java Magazine

JDK 11.0.2 checksum

**Java SE Development Kit 11.0.2**

You must accept the [Oracle Technology Network License Agreement for Oracle Java SE](#) to download this software.

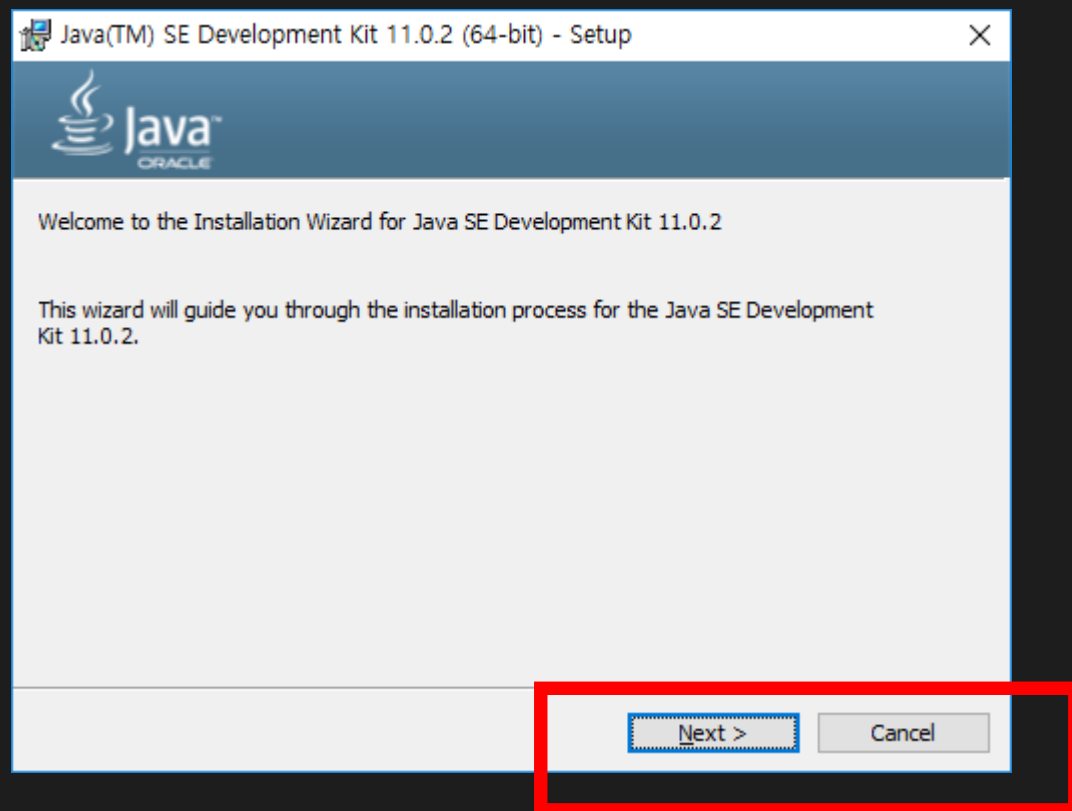
Thank you for accepting the Oracle Technology Network License Agreement for Oracle Java SE; you may now download this software.

Product / File Description	File Size	Download
Linux	147.28 MB	<a href="#">jdk-11.0.2_linux-x64_bin.deb</a>
Linux	154.01 MB	<a href="#">jdk-11.0.2_linux-x64_bin.rpm</a>
Linux	171.32 MB	<a href="#">jdk-11.0.2_linux-x64_bin.tar.gz</a>
macOS	166.13 MB	<a href="#">jdk-11.0.2_osx-x64_bin.dmg</a>
macOS	166.49 MB	<a href="#">jdk-11.0.2_osx-x64_bin.tar.gz</a>
Solaris SPARC	166.78 MB	<a href="#">jdk-11.0.2_solaris-sparcv9_bin.tar.gz</a>
Windows	150.94 MB	<a href="#">jdk-11.0.2_windows-x64_bin.exe</a>
Windows	170.96 MB	<a href="#">jdk-11.0.2_windows-x64_bin.zip</a>

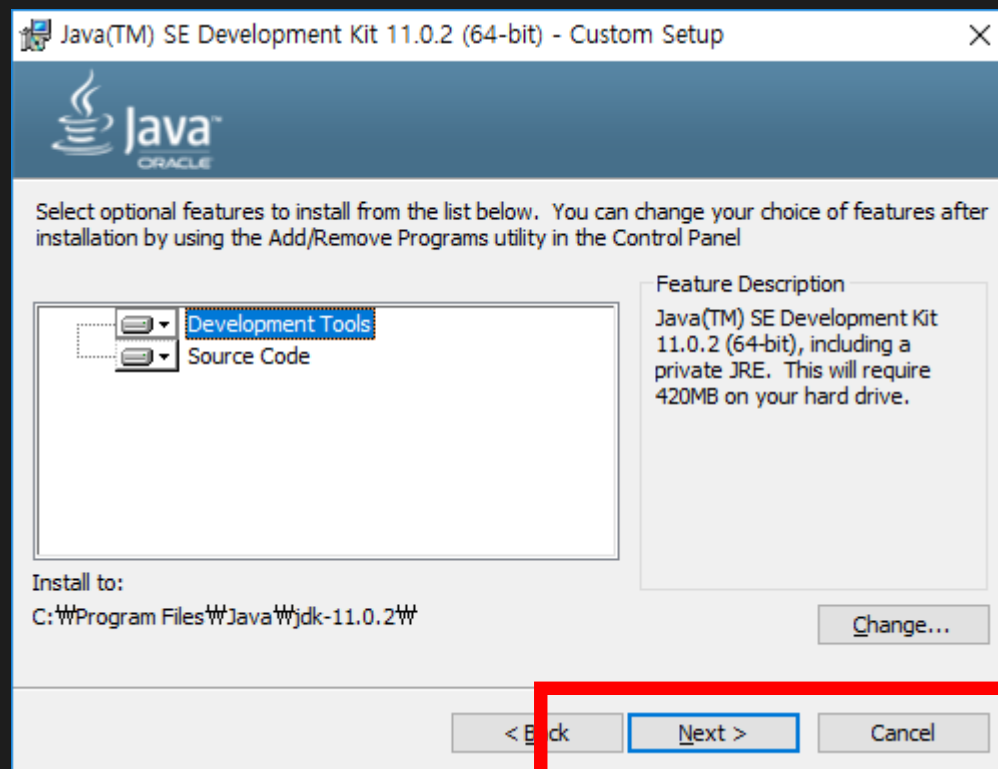
Accept 라디오버튼 누른후  
Exe파일 다운로드

## 02. 패키지 설치

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## 02. 패키지 설치

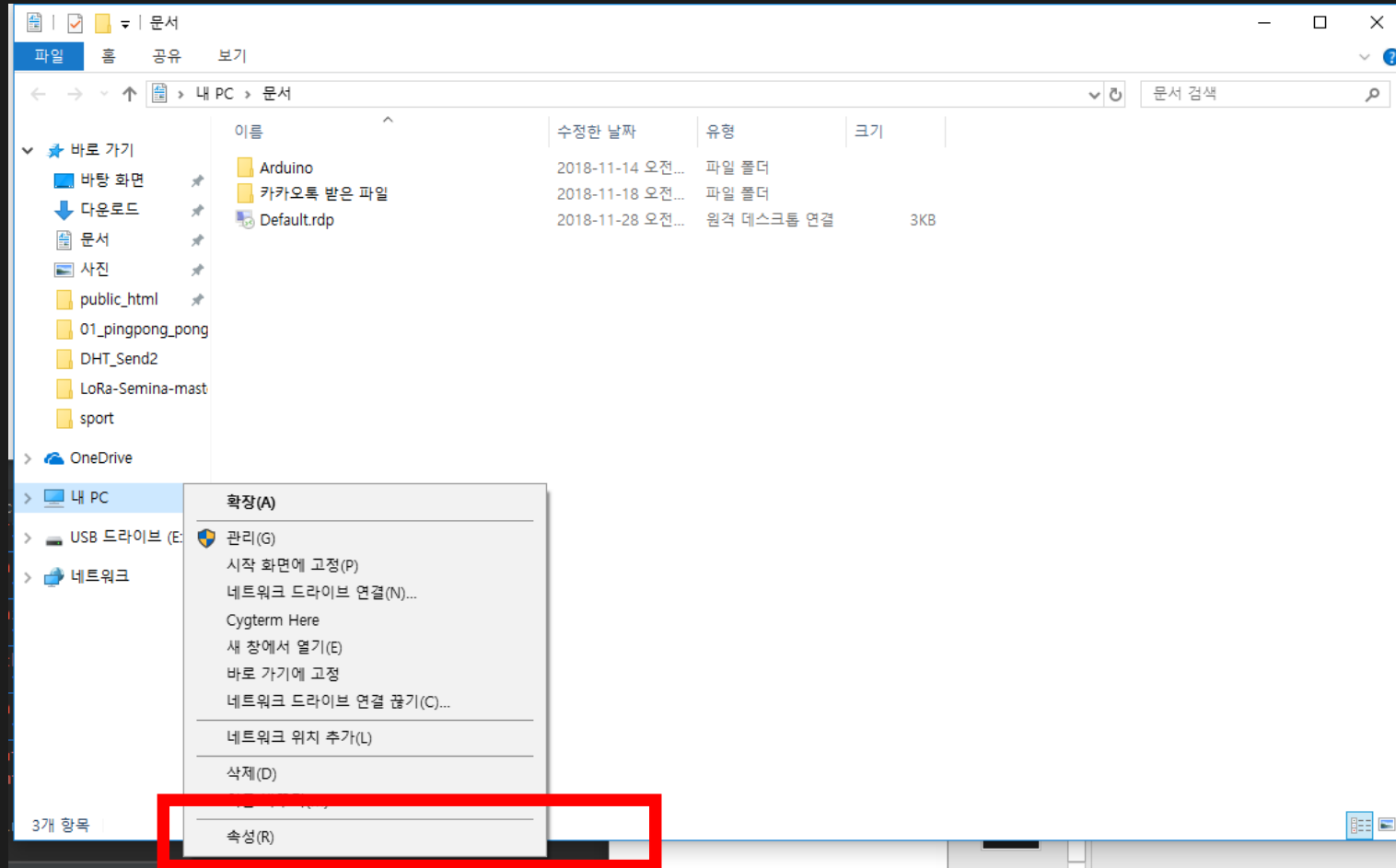


## 02. 패키지 설치

---



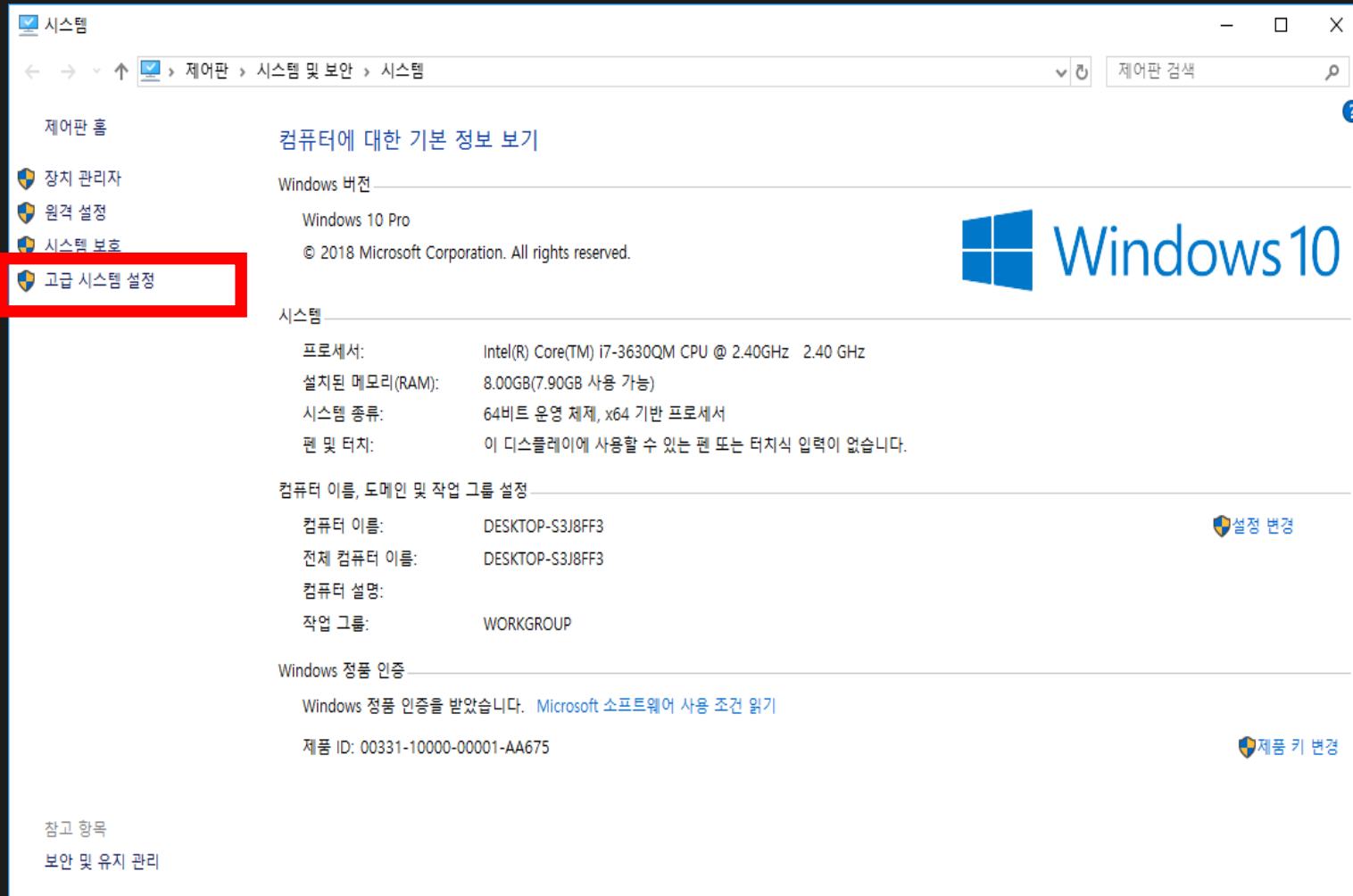
## 02. 패키지 설치



환경변수 추가

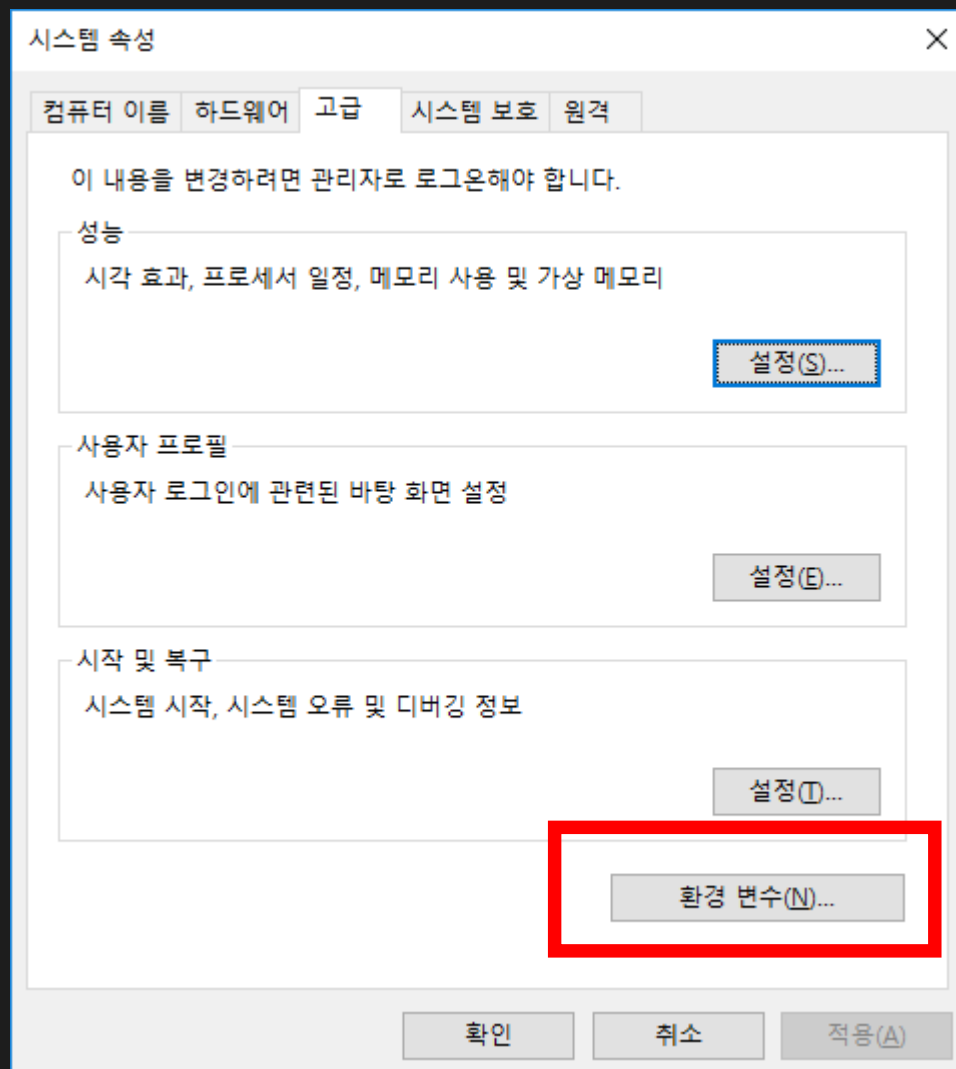


## 02. 패키지 설치

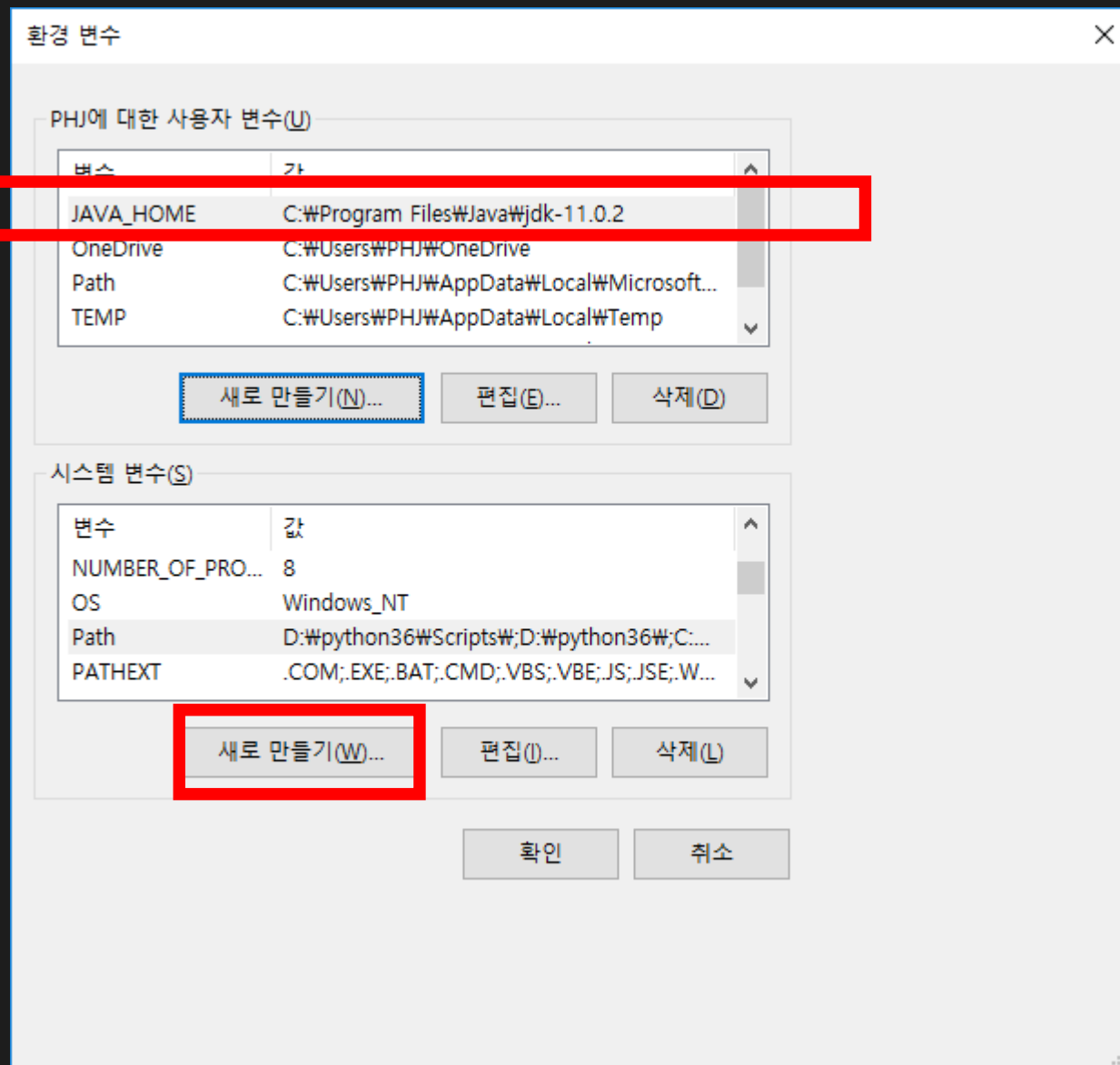


환경변수 추가

## 02. 패키지 설치



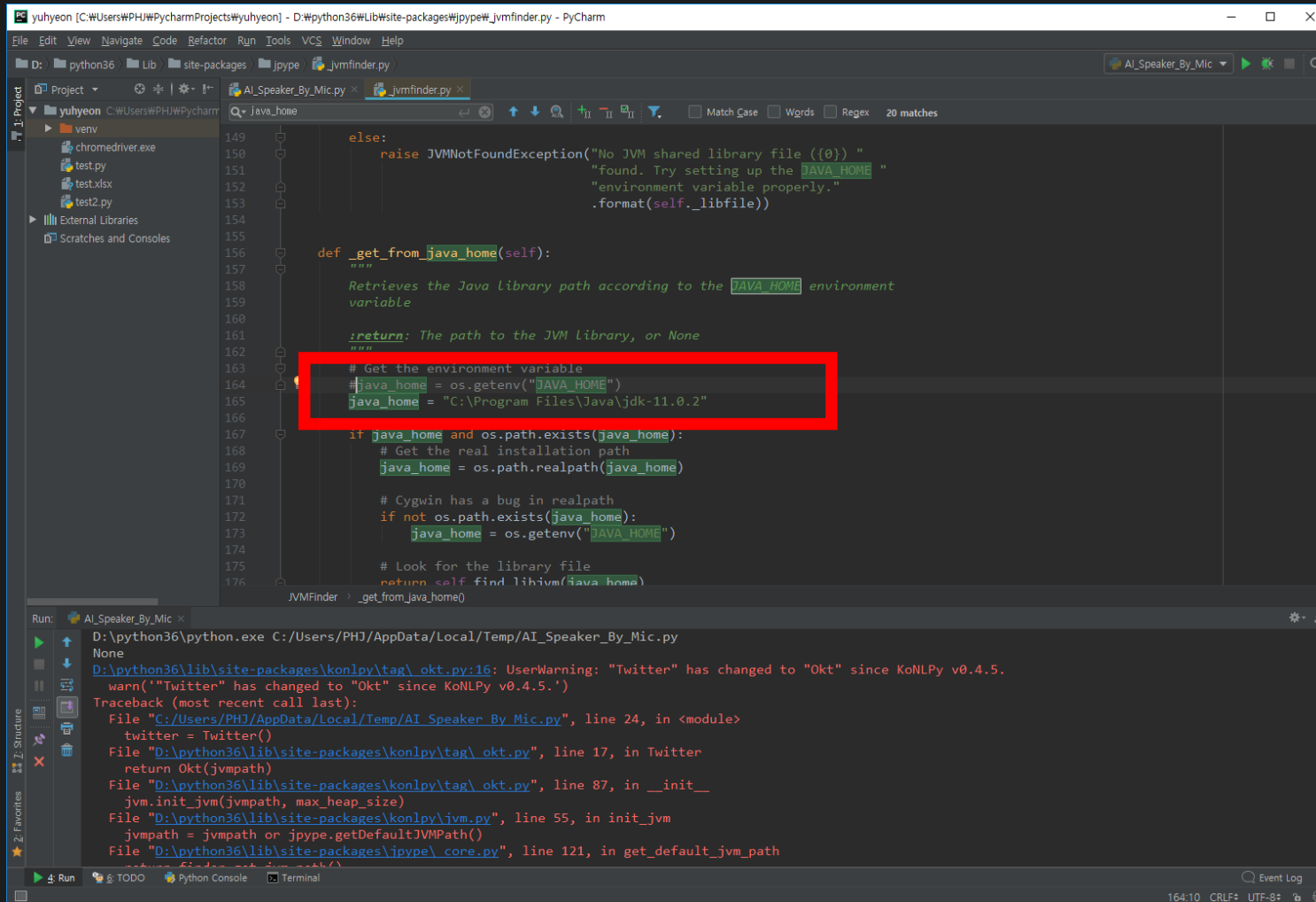
## 02. 패키지 설치



환경변수 추가

아래 시스템 변수에도 동일하게

## 02. 패키지 설치



```
File Edit View Navigate Code Refactor Run Tools VCS Window Help
D:\python36\Lib\site-packages\jpype\_jvmfinder.py
Project
venv
chromedriver.exe
test.py
test.xlsx
test2.py
External Libraries
Scratches and Consoles
149
150
151
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else:
    raise JVMNotFoundException("No JVM shared library file ({0}) "
                                "found. Try setting up the JAVA_HOME "
                                "environment variable properly."
                                .format(self._libfile))

def _get_from_java_home(self):
    """
    Retrieves the Java library path according to the JAVA_HOME environment
    variable

    :return: The path to the JVM library, or None
    """
    # Get the environment variable
    # java_home = os.getenv("JAVA_HOME")
    java_home = "C:\Program Files\Java\jdk-11.0.2"

    if java_home and os.path.exists(java_home):
        # Get the real installation path
        java_home = os.path.realpath(java_home)

        # Cygwin has a bug in realpath
        if not os.path.exists(java_home):
            java_home = os.getenv("JAVA_HOME")

    # Look for the library file
    return self.find_libjvm(java_home)

JVMFinder._get_from_java_home()
```

Run: AI\_Speaker\_By\_Mic x

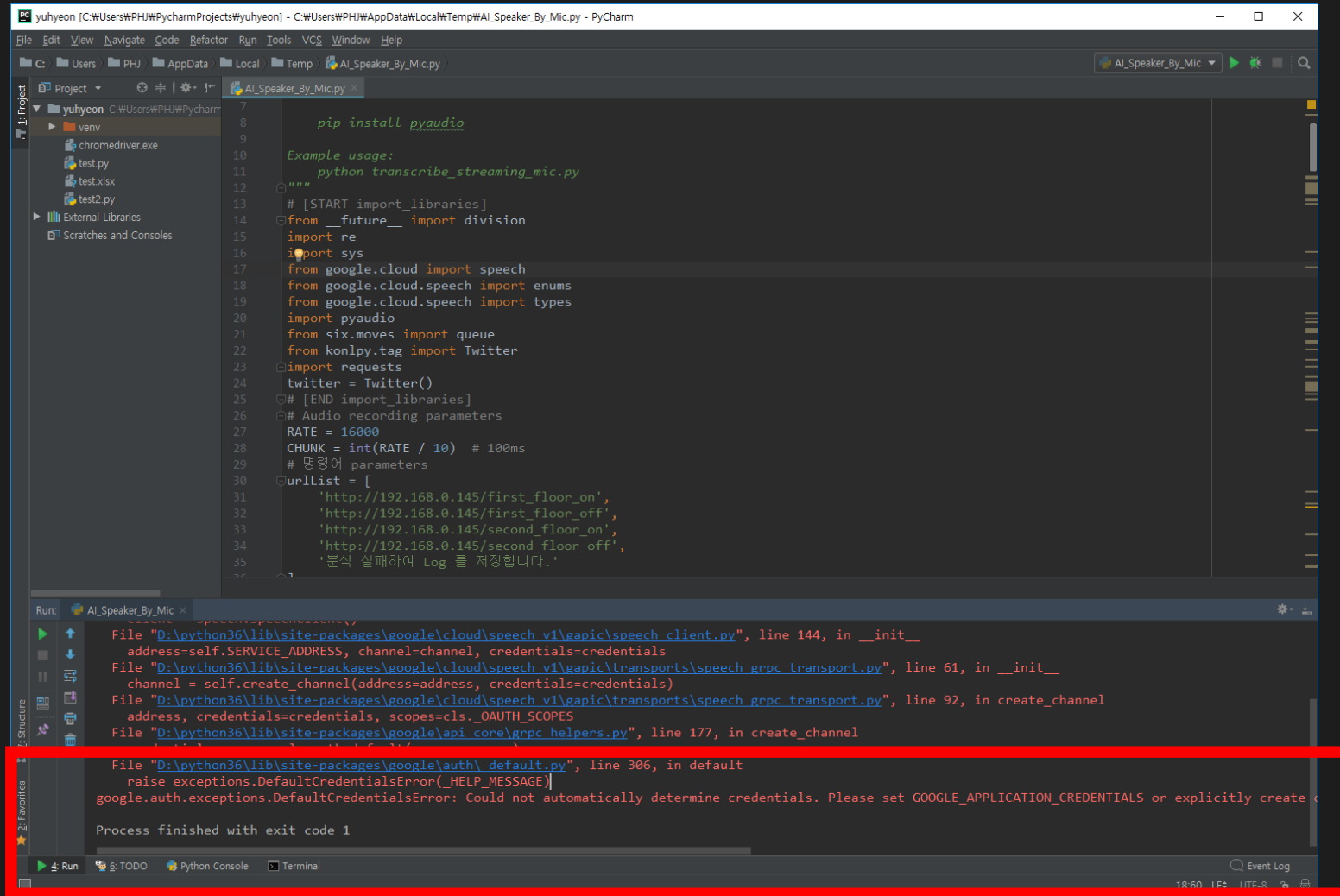
```
D:\python36\python.exe C:/Users/PHJ/AppData/Local/Temp/AI_Speaker_By_Mic.py
None
D:\python36\lib\site-packages\konlpy\tag\ okt.py:16: UserWarning: "Twitter" has changed to "Okt" since KoNLPy v0.4.5.
warn("Twitter" has changed to "Okt" since KoNLPy v0.4.5.")
Traceback (most recent call last):
  File "C:/Users/PHJ/AppData/Local/Temp/AI_Speaker_By_Mic.py", line 24, in <module>
    twitter = Twitter()
  File "D:\python36\lib\site-packages\konlpy\tag\ okt.py", line 17, in Twitter
    return Okt(jvmpath)
  File "D:\python36\lib\site-packages\konlpy\tag\ okt.py", line 87, in __init__
    jvm.init_jvm(jvmpath, max_heap_size)
  File "D:\python36\lib\site-packages\konlpy\jvm.py", line 55, in init_jvm
    jvmpath = jvmpath or jpype.getDefaultJVMPath()
  File "D:\python36\lib\site-packages\jpype\core.py", line 121, in get_default_jvm_path
    return finder.get_jvm_path()
```

그래도 안되면 ?

Jpype/\_jvmfinder.py 에  
164번줄에

직접 경로추가

### 03. 구글 SDK 설치



The image shows a PyCharm IDE window with a Python script named `AI_Speaker_By_Mic.py` and its execution output in the Run console. The script is a Python 3 program that uses the Google Cloud Speech API and PyAudio for audio processing. It includes imports for `pip`, `pyaudio`, and various Google Cloud libraries. The script defines constants for `RATE` and `CHUNK`, and a list of URLs for testing. The Run console shows the execution of the script, which results in a `DefaultCredentialsError` from the `google.auth` module. The error message states: "Could not automatically determine credentials. Please set GOOGLE\_APPLICATION\_CREDENTIALS or explicitly create and set Credentials." The error is highlighted with a red box.

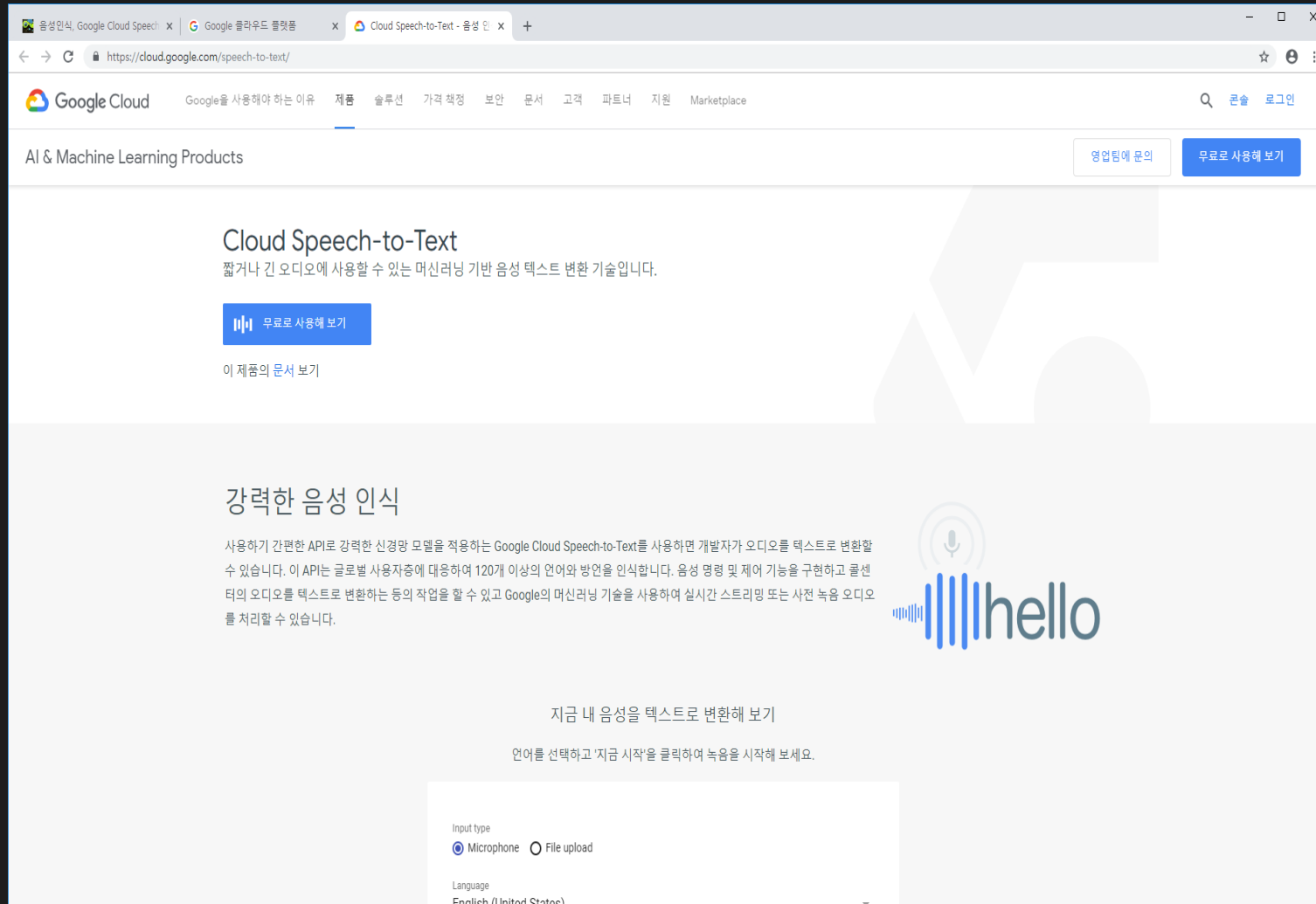
```
File "D:\python36\lib\site-packages\google\cloud\speech_v1\gapic\speech_client.py", line 144, in __init__
address=self.SERVICE_ADDRESS, channel=channel, credentials=credentials
File "D:\python36\lib\site-packages\google\cloud\speech_v1\gapic\transports\speech_grpc_transport.py", line 61, in __init__
channel = self.create_channel(address=address, credentials=credentials)
File "D:\python36\lib\site-packages\google\cloud\speech_v1\gapic\transports\speech_grpc_transport.py", line 92, in create_channel
address, credentials=credentials, scopes=cls._OAUTH_SCOPES
File "D:\python36\lib\site-packages\google\api_core\grpc_helpers.py", line 177, in create_channel
File "D:\python36\lib\site-packages\google\auth\default.py", line 306, in default
raise exceptions.DefaultCredentialsError(_HELP_MESSAGE)
google.auth.exceptions.DefaultCredentialsError: Could not automatically determine credentials. Please set GOOGLE_APPLICATION_CREDENTIALS or explicitly create and set Credentials.
Process finished with exit code 1
```

실행해봐서

If Google auth error :

<https://cloud.google.com/docs/authentication/getting-started>

## 03. 구글 SDK 설치



가이드 문서 접속

## 03. 구글 SDK 설치

The screenshot shows the Google Cloud documentation page for 'Getting Started with Authentication'. The page is titled 'Getting Started with Authentication' and is part of the 'Authentication' documentation series. It includes a table of contents on the left, a main content area with a 'Creating a service account' section, and a 'Setting the environment variable' section at the bottom. The 'Creating a service account' section is divided into 'GCP CONSOLE' and 'COMMAND LINE' tabs. The 'GCP CONSOLE' tab is active, showing a list of steps to create a service account. A note indicates that the 'Role' field authorizes the service account to access resources, and that more granular permissions can be specified by using the 'Project > Owner' role. The 'COMMAND LINE' tab is also visible, showing the steps to create a service account using the command line.

Getting Started with Authentication

This article shows the recommended way to authenticate to a [Cloud API](#).

*Authentication* refers to the process of determining a client's identity. *Authorization* refers to the process of determining what permissions an authenticated client has for a set of resources. That is, authentication refers to who you are, and authorization refers to what you can do.

For authentication, we recommend using a *service account*: a Google account that is associated with your GCP project, as opposed to a specific user. Service accounts can be used for authentication regardless of where your code runs (locally, Compute Engine, App Engine, on premises, etc.). For more information about other authentication types, see [authentication overview](#).

### Creating a service account

**GCP CONSOLE**    COMMAND LINE

1. In the GCP Console, go to the **Create service account key** page.

[GO TO THE CREATE SERVICE ACCOUNT KEY PAGE](#)

2. From the **Service account** drop-down list, select **New service account**.
3. In the **Service account name** field, enter a name .
4. From the **Role** drop-down list, select **Project > Owner**.

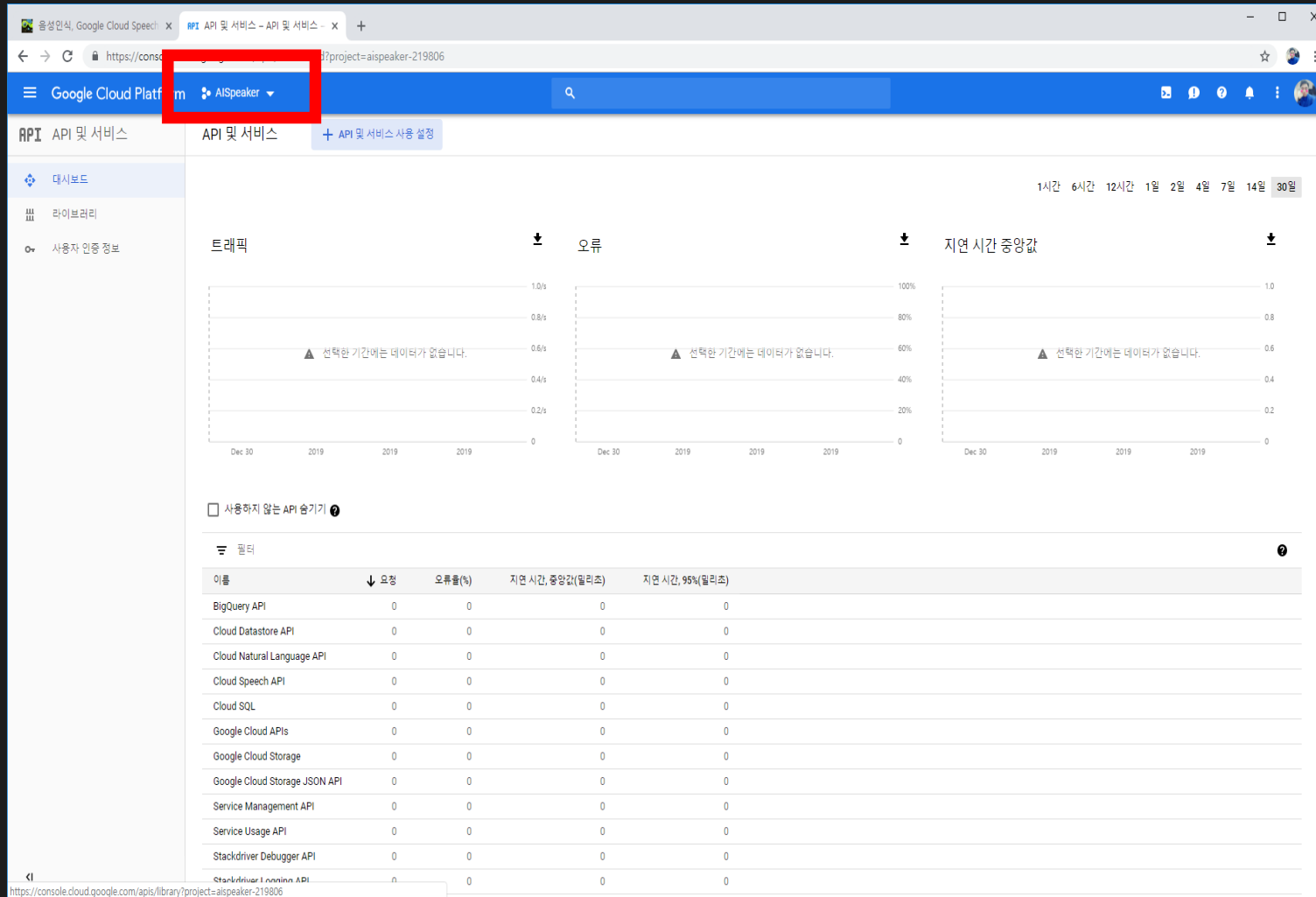
**Note:** The **Role** field authorizes your service account to access resources. You can view and change this field later by using [GCP Console](#). If you are developing a production app, specify more granular permissions than **Project > Owner**. For more information, see [granting roles to service accounts](#).

5. Click **Create**. A JSON file that contains your key downloads to your computer.

### Setting the environment variable

Getting started 문서 참조

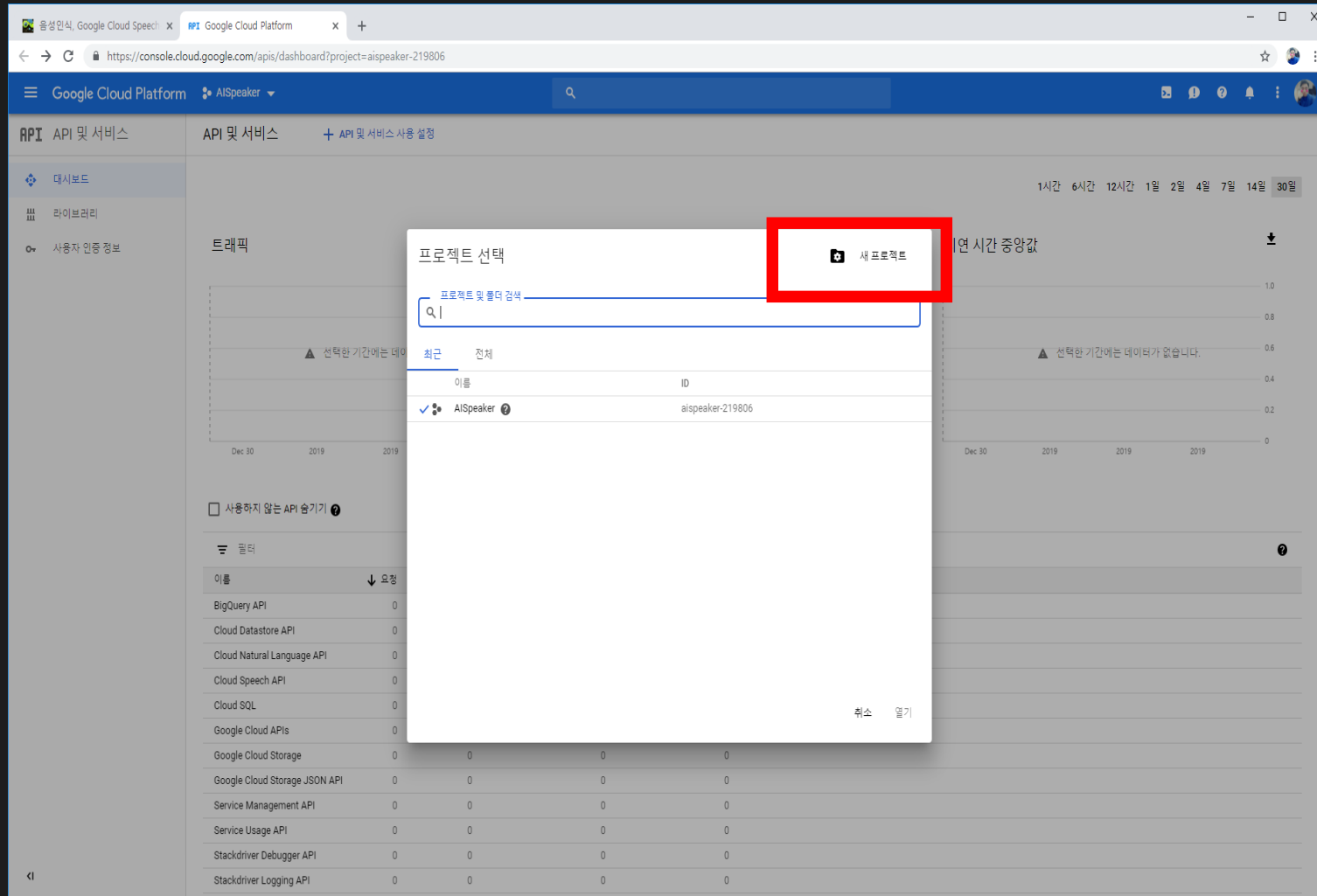
### 03. 구글 SDK 설치



클릭후 프로젝트 탭으로

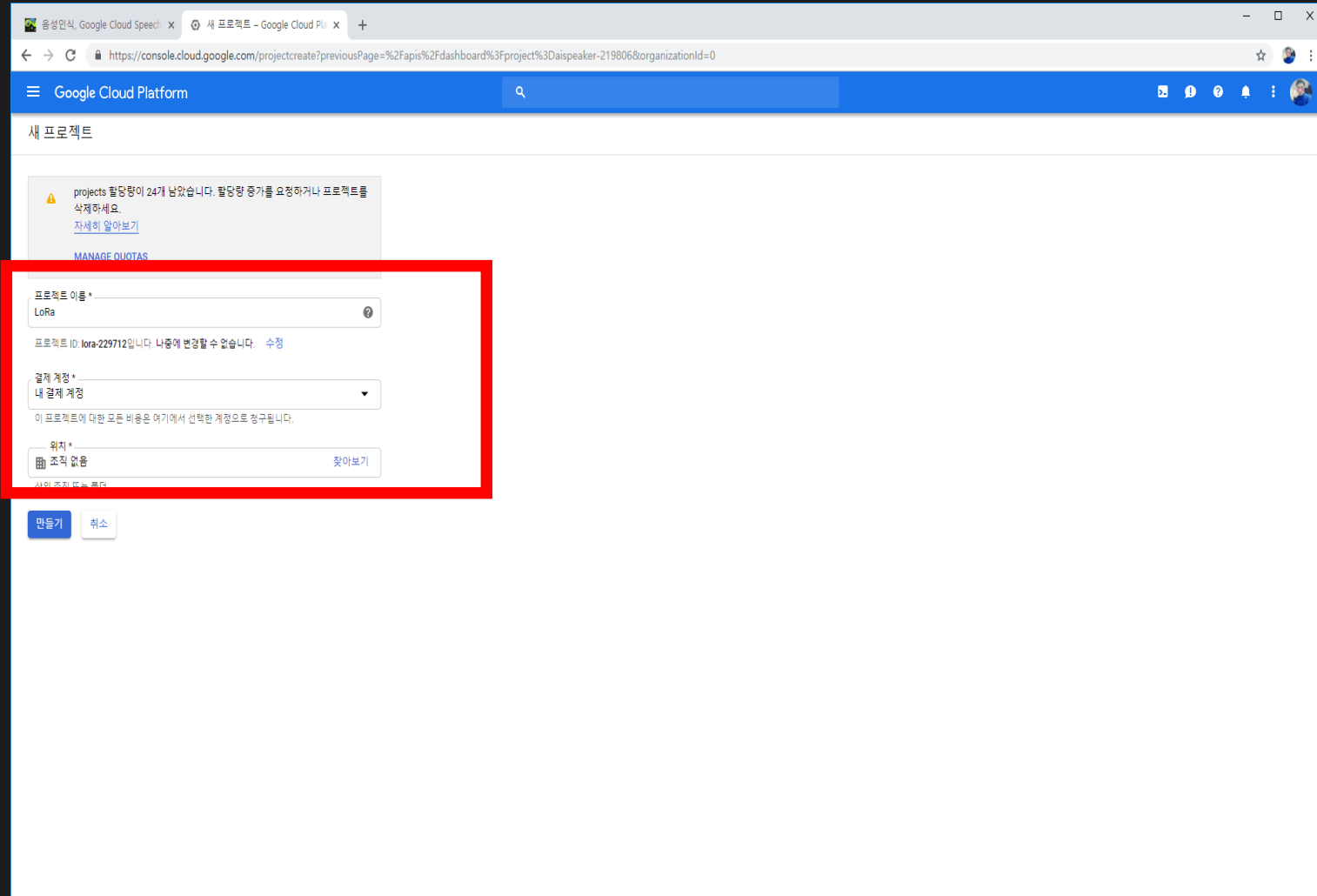


## 03. 구글 SDK 설치



새프로젝트 만들기

## 03. 구글 SDK 설치



음성인식, Google Cloud Speech x 새 프로젝트 - Google Cloud Pl x

← → ↺ <https://console.cloud.google.com/projectcreate?previousPage=%2Fapis%2Fdashboard%3Fproject%3Daispeaker-219806&organizationId=0> ☆ 👤 ⋮

Google Cloud Platform 🔍

새 프로젝트

⚠ projects 할당량이 24개 남았습니다. 할당량 증가를 요청하거나 프로젝트를 삭제하세요.  
[자세히 알아보기](#)  
[MANAGE QUOTAS](#)

프로젝트 이름 \*  
LoRa ⓘ

프로젝트 ID: lora-229712입니다. 나중에 변경할 수 없습니다. [수정](#)

결제 계정 \*  
내 결제 계정 ▼

이 프로젝트에 대한 모든 비용은 여기에서 선택한 계정으로 청구됩니다.

위치 \*  
조직 없음 [찾아보기](#)

이 위치가 맞습니까?

만들기 취소

항목대로 기입

만약 결제계정입력필요시

입력필요

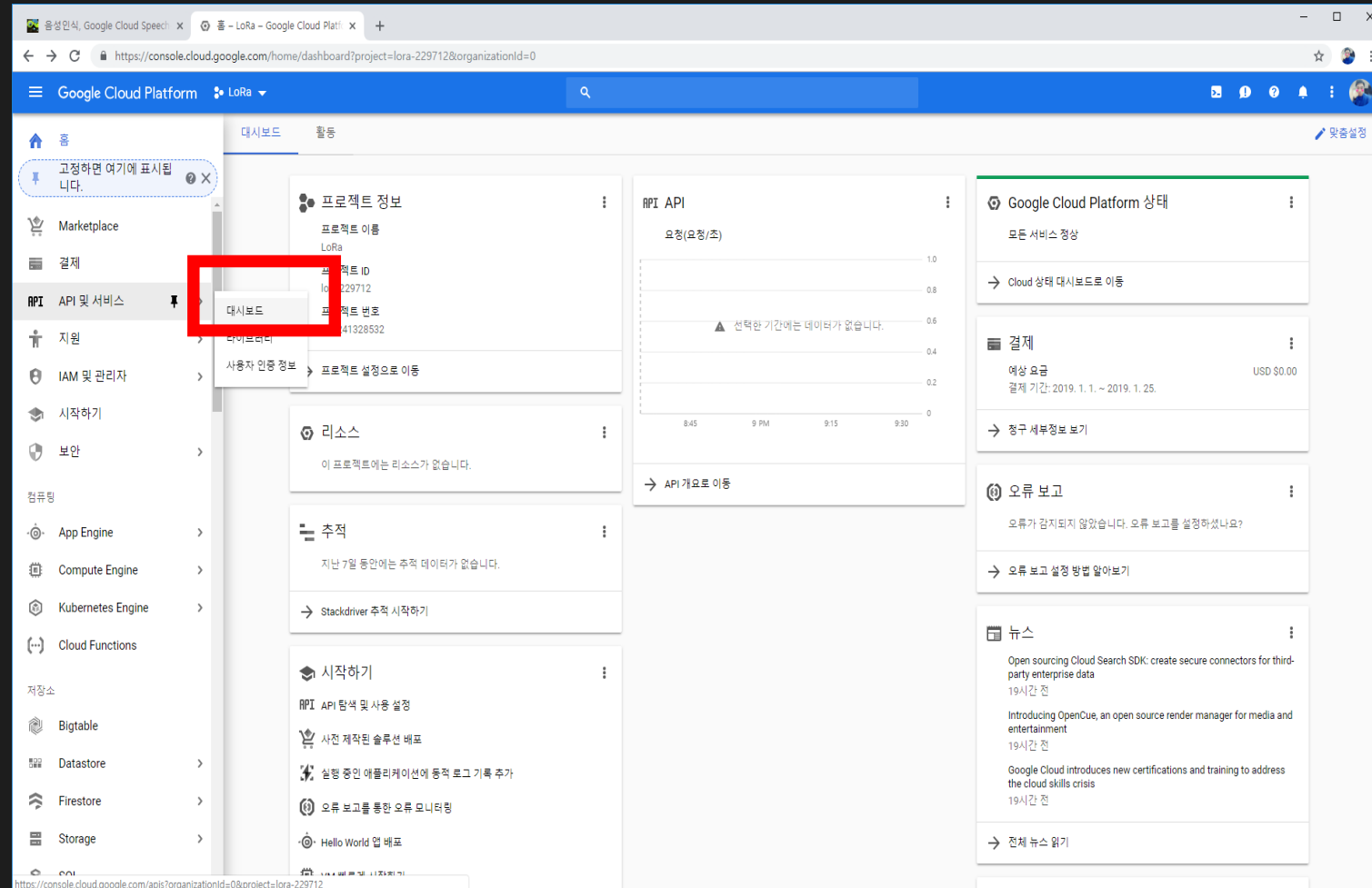
## 03. 구글 SDK 설치

The screenshot shows the Google Cloud Platform console interface. The left sidebar contains a list of services, with 'APIs and Services' highlighted by a red box. The main content area displays project information, resource usage, and a list of APIs. The 'APIs and Services' section is currently selected, showing a list of APIs and a 'Get API key' button.

Google Cloud Platform console interface showing the 'APIs and Services' section highlighted in the left sidebar. The main content area displays project information, resource usage, and a list of APIs.

클릭

### 03. 구글 SDK 설치



클릭

### 03. 구글 SDK 설치

Google Cloud Platform API 및 서비스

+ API 및 서비스 사용 설정

트래픽

오류

지연 시간 증감값

선택한 기간에는 데이터가 없습니다.

선택한 기간에는 데이터가 없습니다.

선택한 기간에는 데이터가 없습니다.

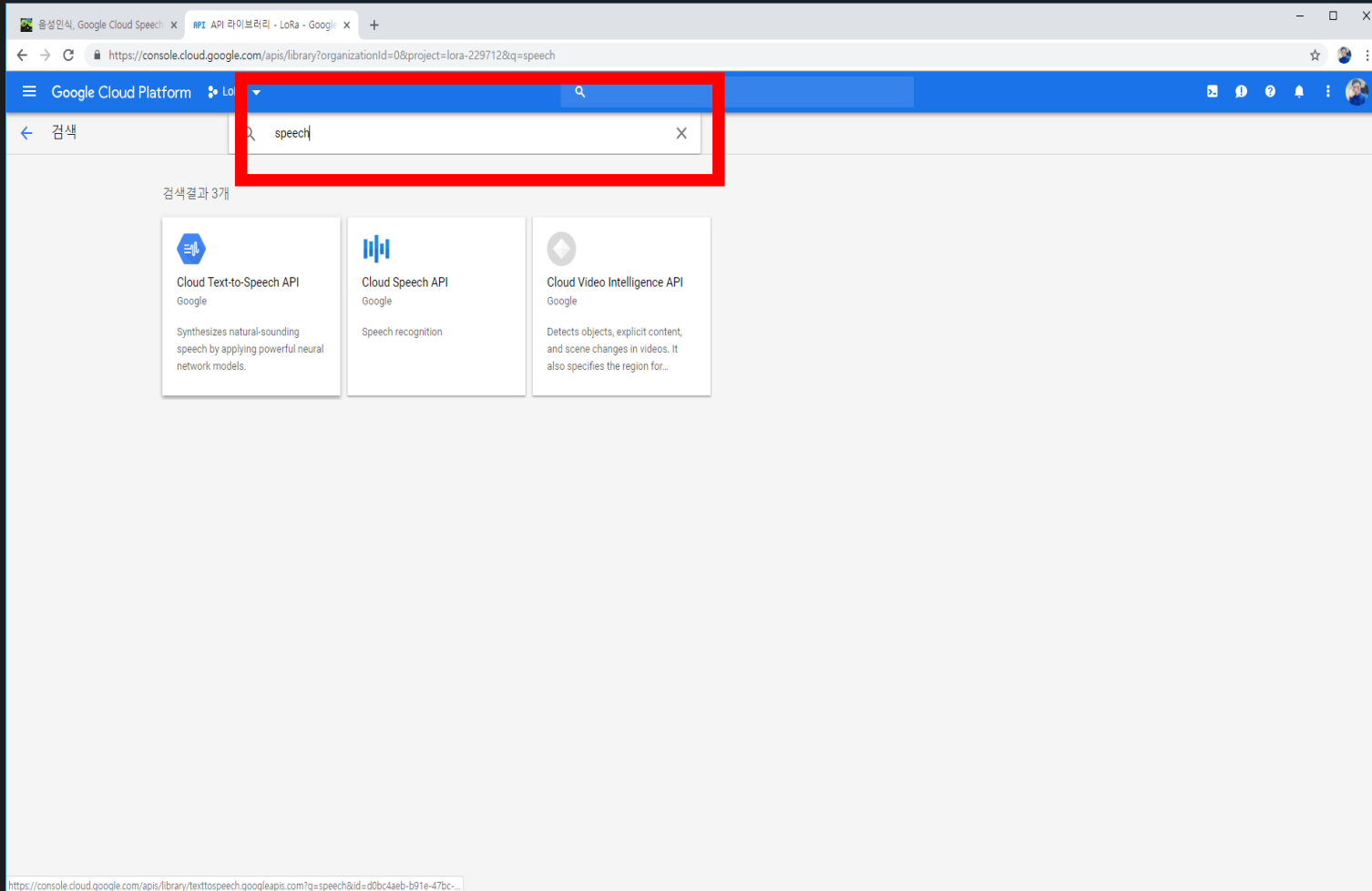
☐ 사용하지 않는 API 숨기기

필터

이름	↓ 요청	오류율(%)	지연 시간, 중앙값(밀리초)	지연 시간, 95%(밀리초)
BigQuery API	0	0	0	0
Cloud Datastore API	0	0	0	0
Cloud SQL	0	0	0	0
Google Cloud APIs	0	0	0	0
Google Cloud Storage	0	0	0	0
Google Cloud Storage JSON API	0	0	0	0
Service Management API	0	0	0	0
Service Usage API	0	0	0	0
Stackdriver Debugger API	0	0	0	0
Stackdriver Logging API	0	0	0	0
Stackdriver Monitoring API	0	0	0	0
Stackdriver Trace API	0	0	0	0

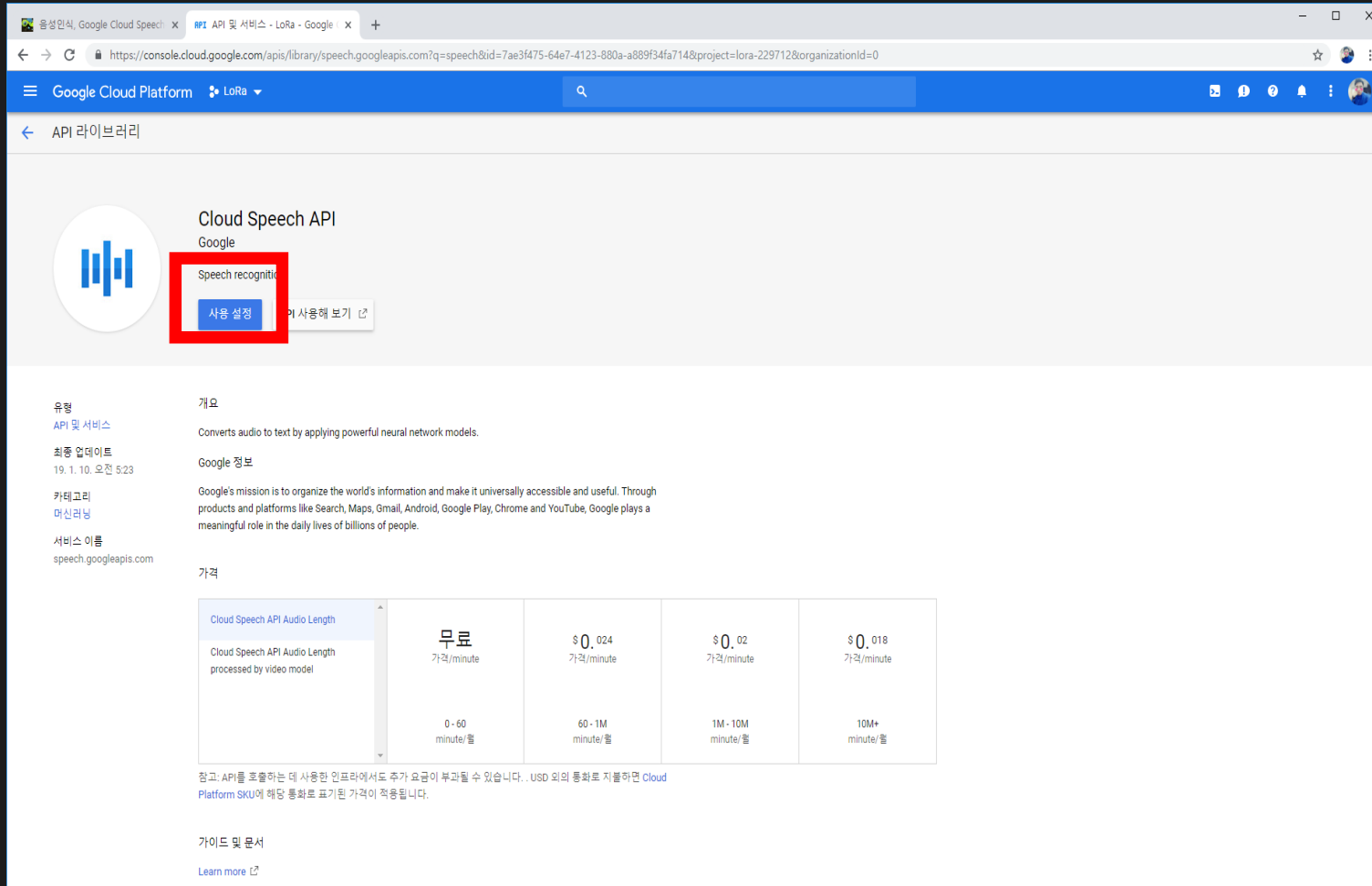
클릭

## 03. 구글 SDK 설치



Speech 검색

## 03. 구글 SDK 설치

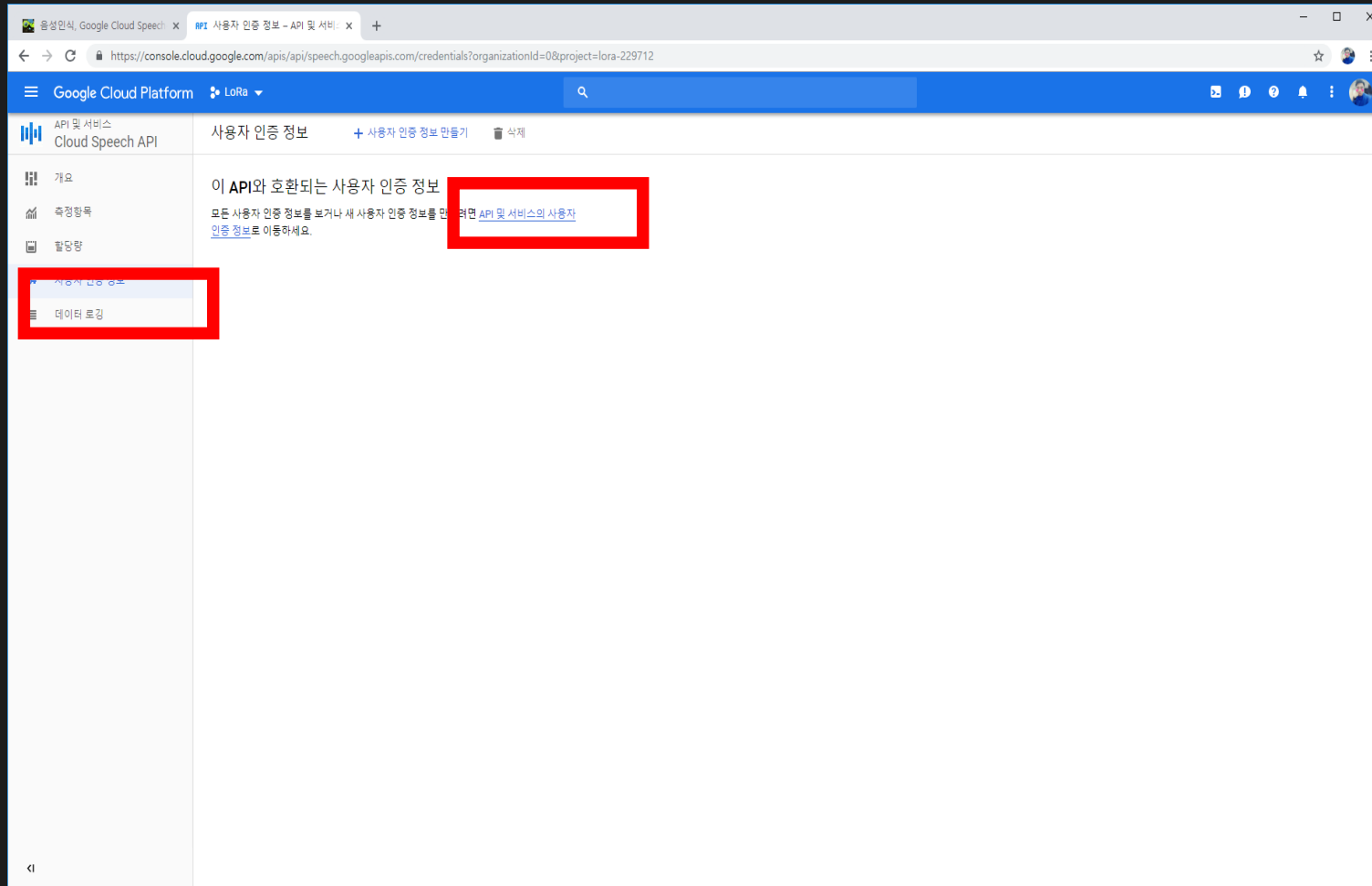


The screenshot shows the Google Cloud Platform console interface. The top navigation bar includes the Google Cloud Platform logo and a search bar. The main content area displays the 'Cloud Speech API' page. A red box highlights the '사용 설정' (Get started) button, which is located next to the 'Speech recognition' service name. Below this, there is a section for '유형' (Type) and 'API 및 서비스' (APIs and services). The '가격' (Pricing) section is also visible, showing a table of rates for different audio lengths.

Cloud Speech API Audio Length	가격/minute
0 - 60 minute/월	무료
60 - 1M minute/월	\$0.024
1M - 10M minute/월	\$0.02
10M+ minute/월	\$0.018

클릭

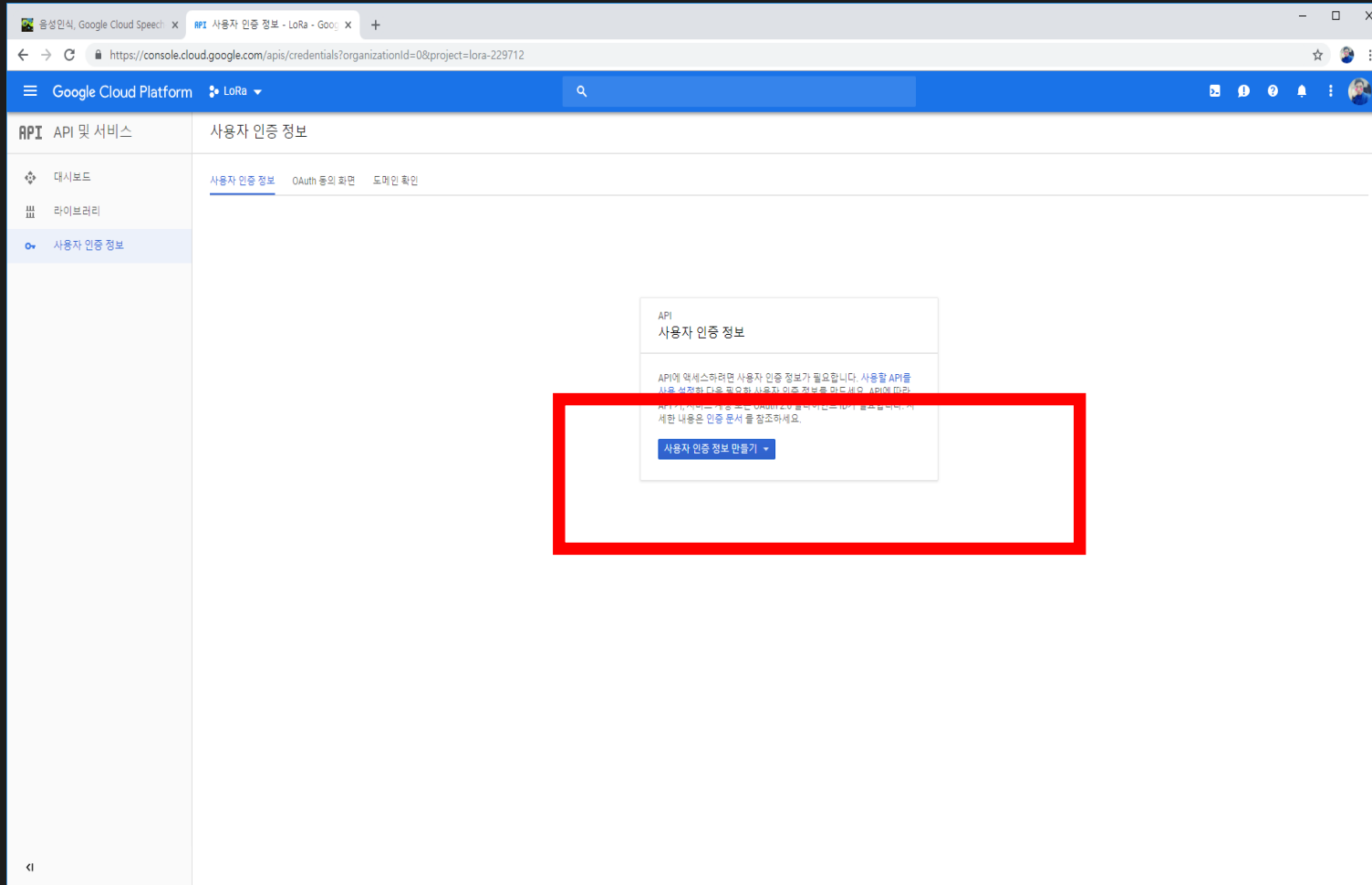
## 03. 구글 SDK 설치



사용자 인증 정보로

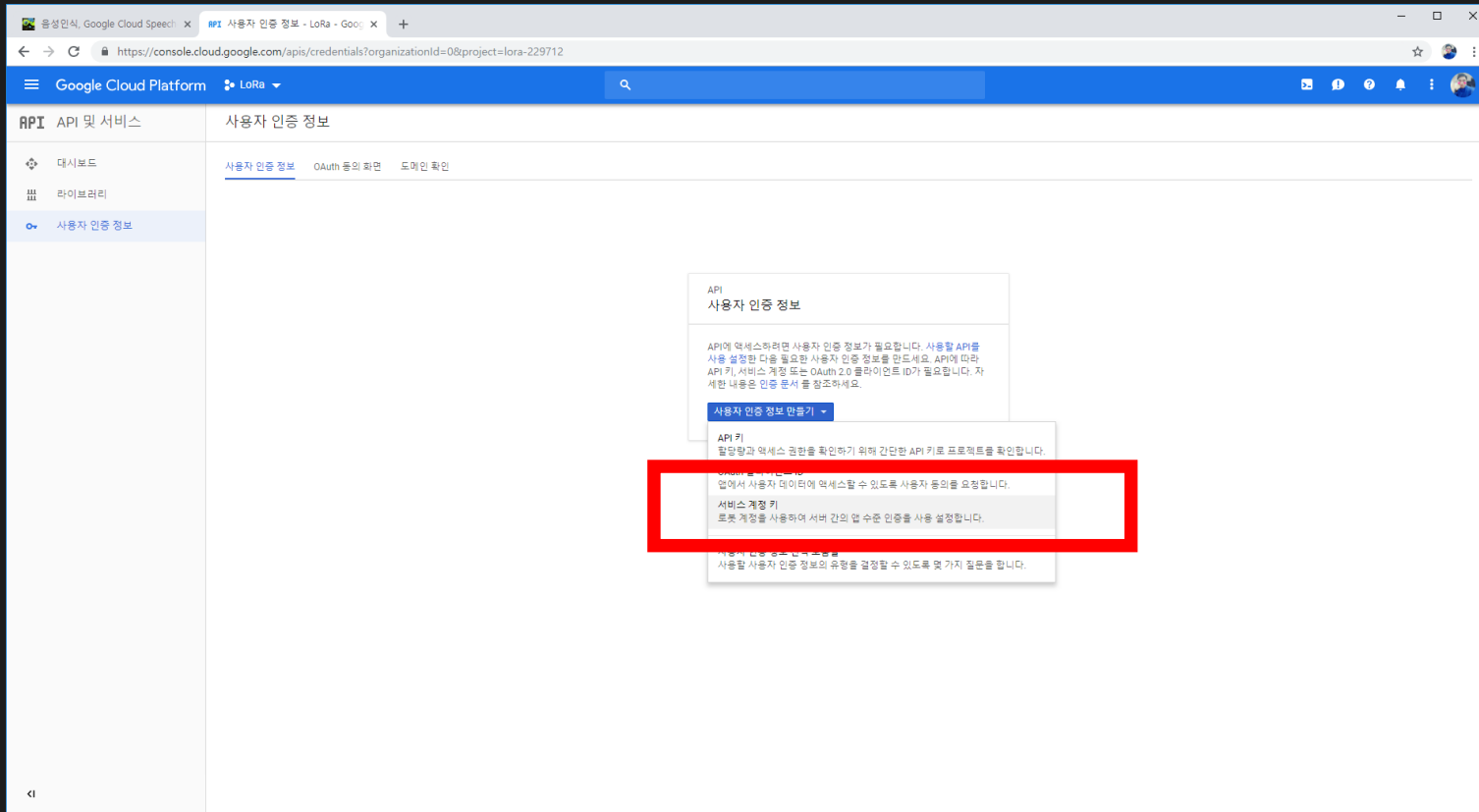


## 03. 구글 SDK 설치



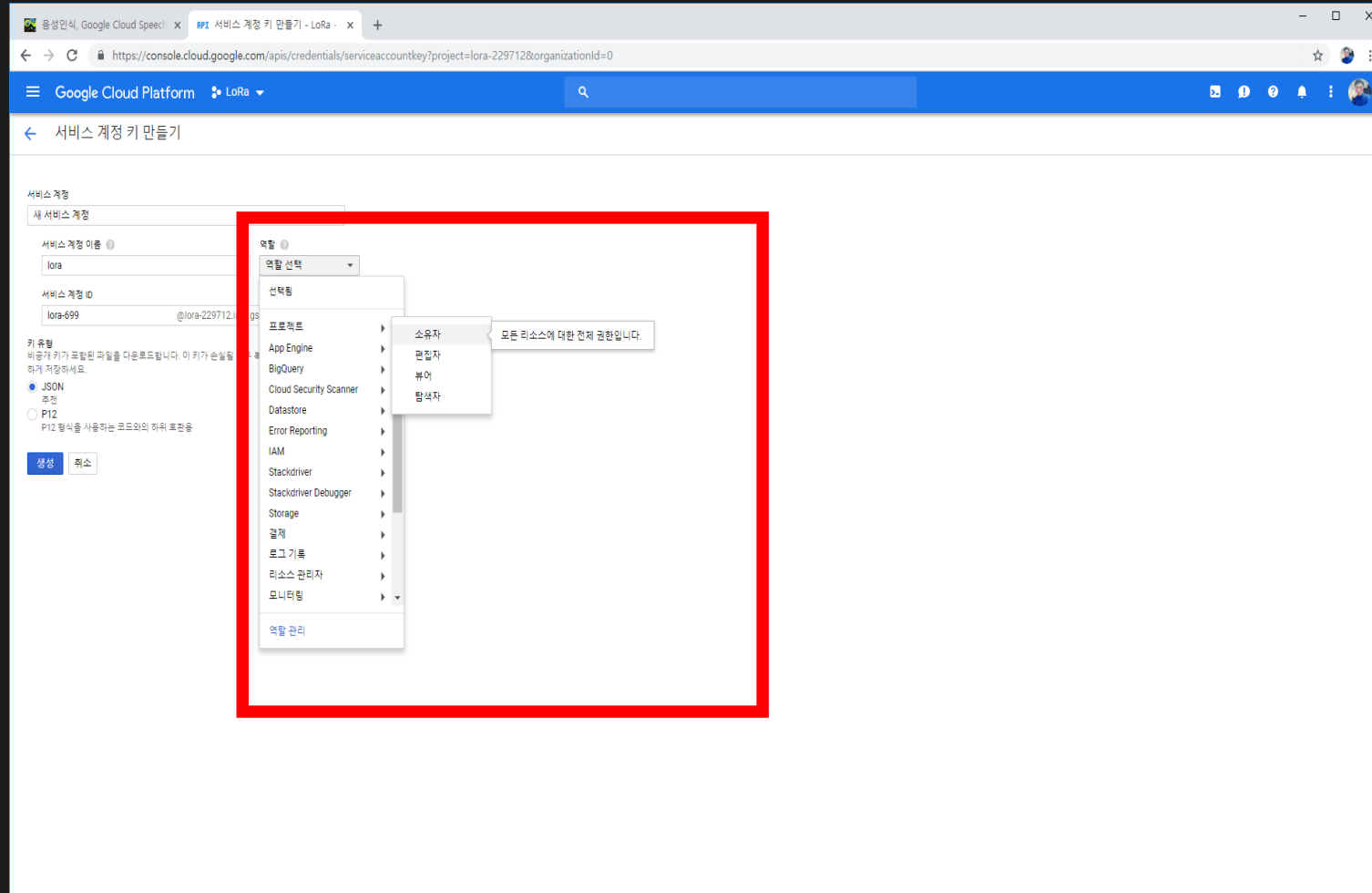
새로 키 만들기 클릭

## 03. 구글 SDK 설치



서비스 계정 키 옵션 클릭

## 03. 구글 SDK 설치

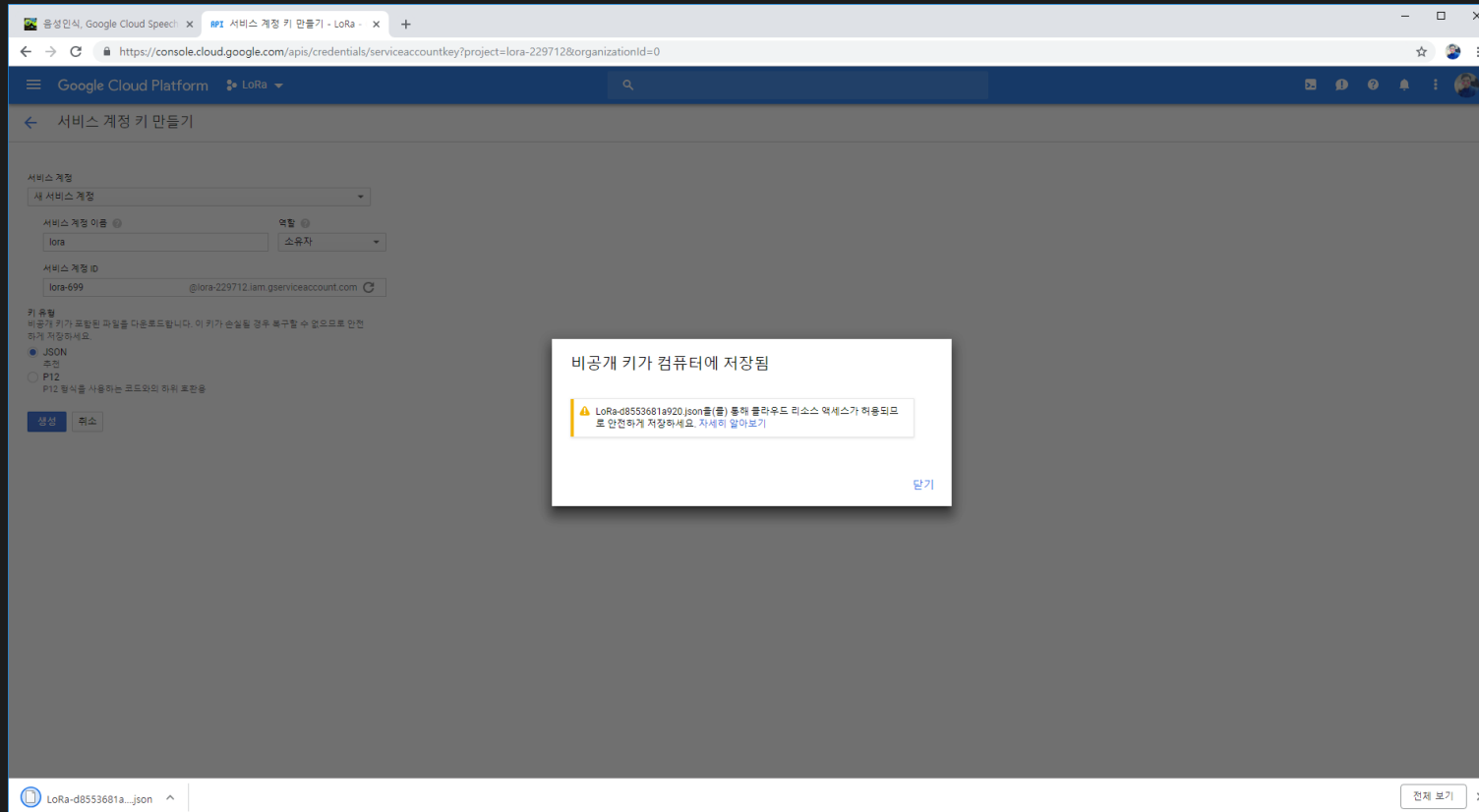


역할을

프로젝트 - 소유자로 선택 후

Json 으로 발급

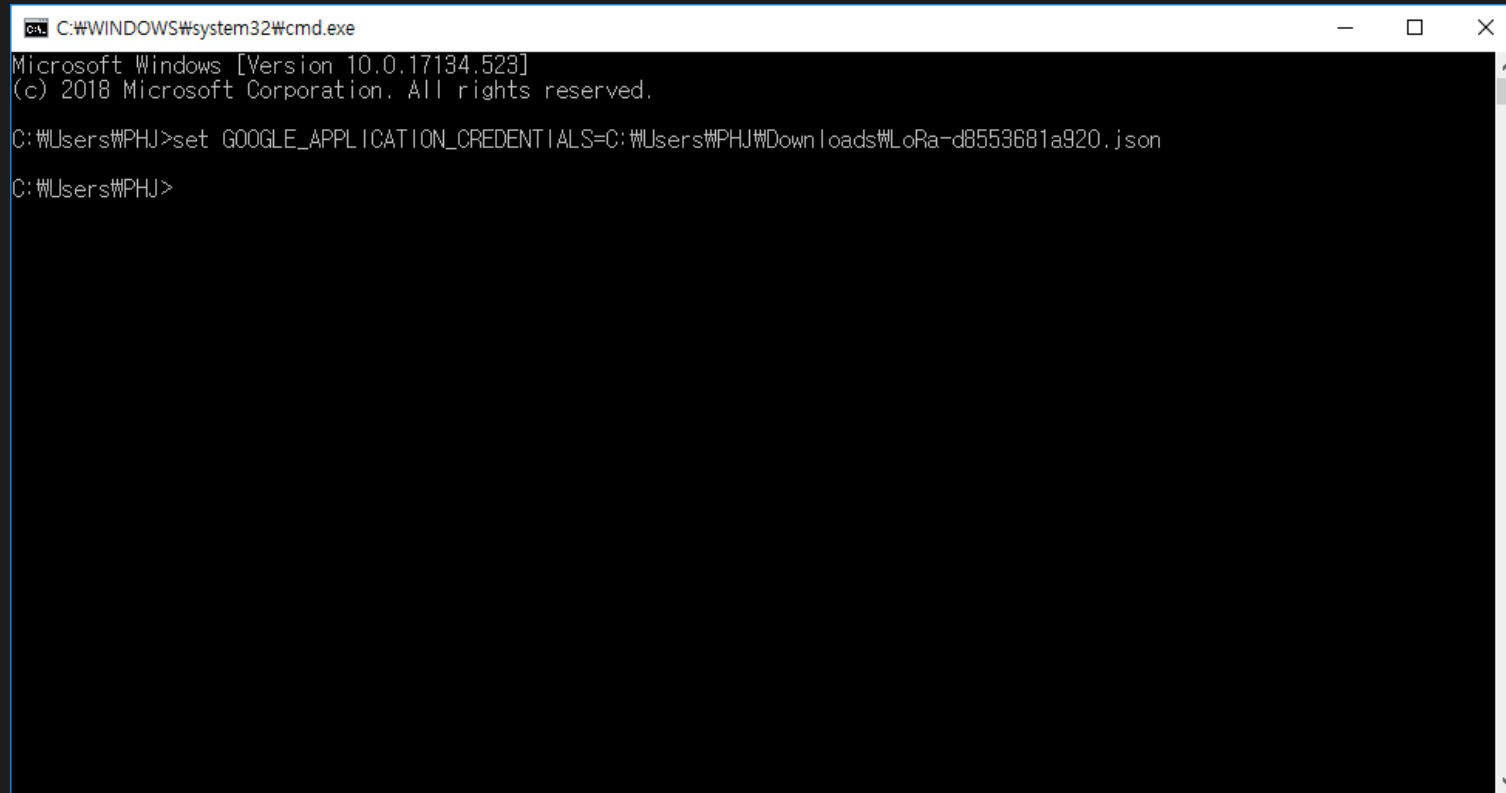
## 03. 구글 SDK 설치



컴퓨터에 저장되지니

경로 기억해두기 !

## 03. 구글 SDK 설치



```
C:\WINDOWS\system32\cmd.exe
Microsoft Windows [Version 10.0.17134.523]
(c) 2018 Microsoft Corporation. All rights reserved.

C:\Users\PHJ>set GOOGLE_APPLICATION_CREDENTIALS=C:\Users\PHJ\Downloads\LoRa-d8553681a920.json
C:\Users\PHJ>
```

커맨드에

```
set
GOOGLE_APPLICATION_CREDENTIALS=
C:\Users\PHJ\Downloads\LoRa-
d8553681a920.json
```

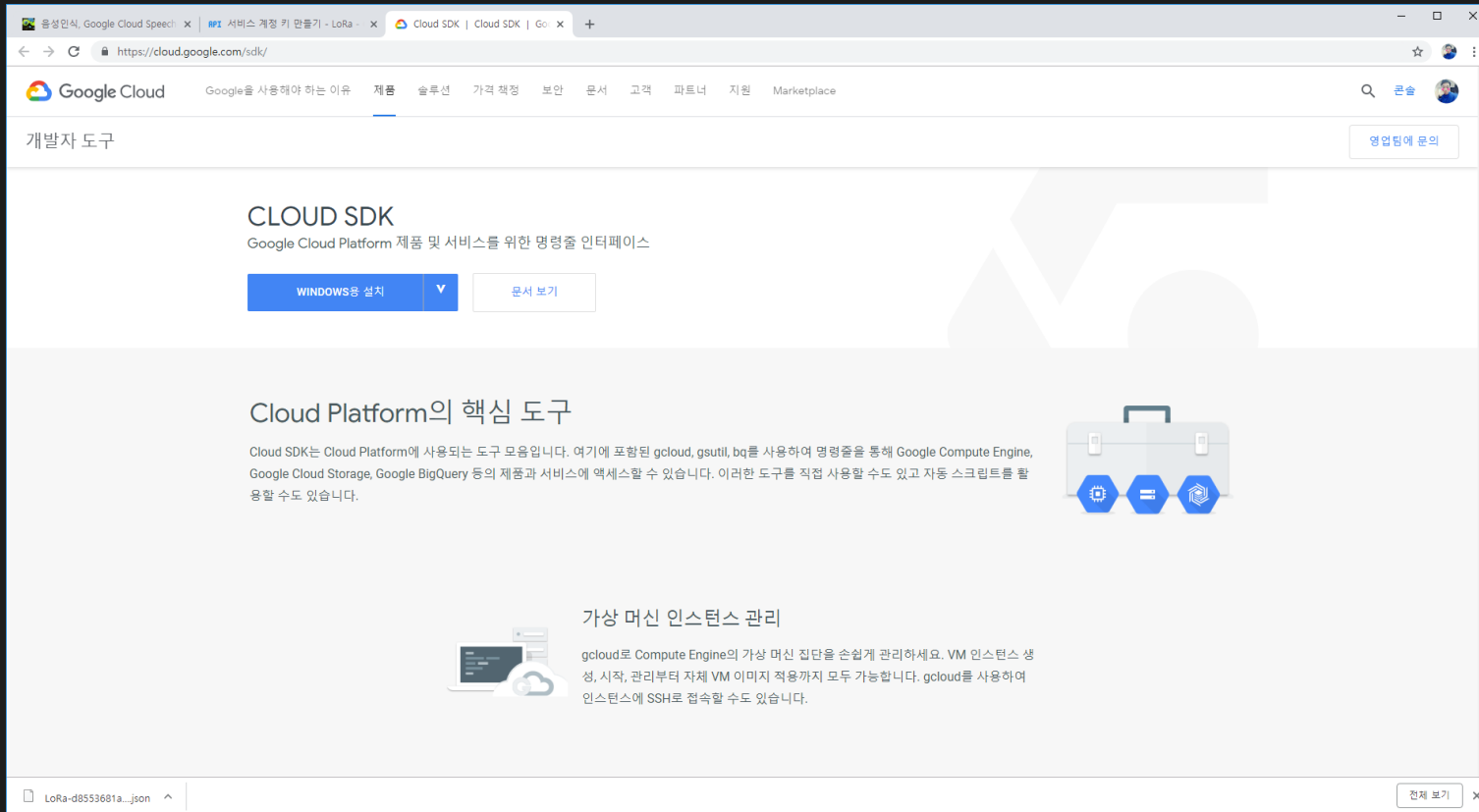
명령어 입력

또는

환경변수 추가!



## 03. 구글 SDK 설치



### 구글 SDK 설치

<https://cloud.google.com/sdk/>

## 03. 구글 SDK 설치

The screenshot shows the Google Cloud SDK quickstart page for Windows. The page title is "Windows 빠른 시작" (Windows Quickstart). The main content area lists the steps to get started:

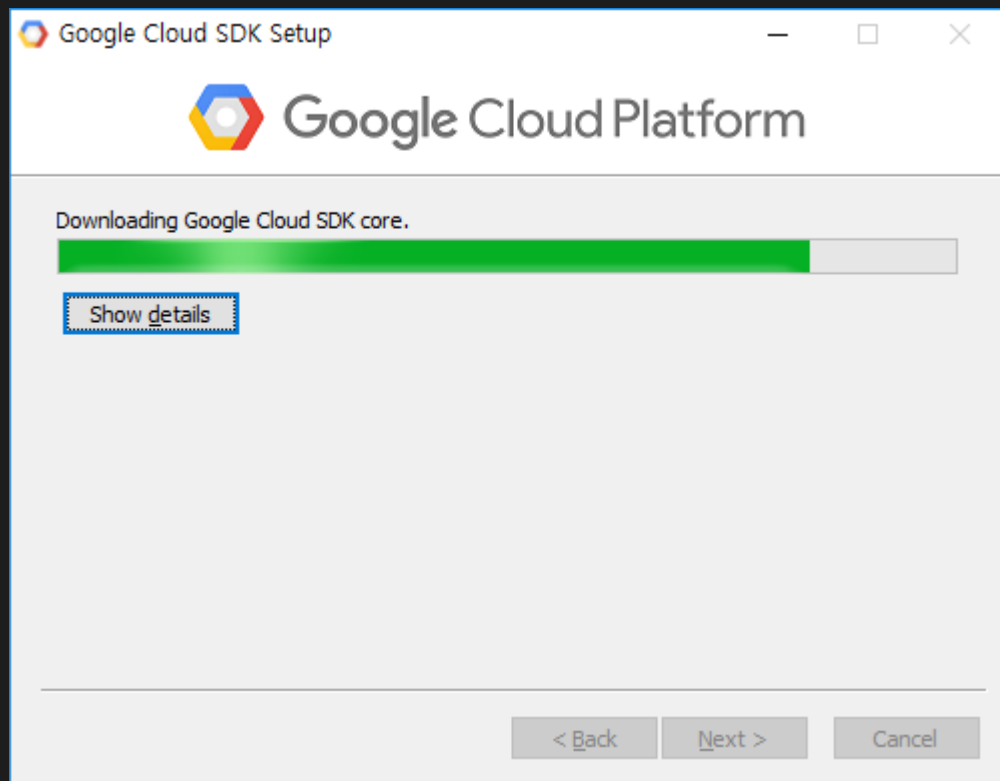
- 1. Google Cloud SDK 설치 프로그램을 다운로드합니다.
- 2. 설치 프로그램을 실행하고 안내 메시지를 따릅니다.
- 3. 설치가 완료되면 설치 프로그램은 몇 가지 옵션을 제공합니다.

A red box highlights the first two steps. Below the list is a screenshot of the "Completing the Google Cloud SDK Setup Wizard" window, which shows the Google Cloud Platform logo and the text "Google Cloud SDK has been installed on your computer. Click Finish to close this wizard." The "Finish" button is highlighted.

Below the screenshot, the text says: "다음 항목이 선택되었는지 확인합니다." (Verify the following items are selected).

클릭해서 다운로드

### 03. 구글 SDK 설치



계속 Next 후 기본 옵션으로 설치



## 03. 구글 SDK 설치

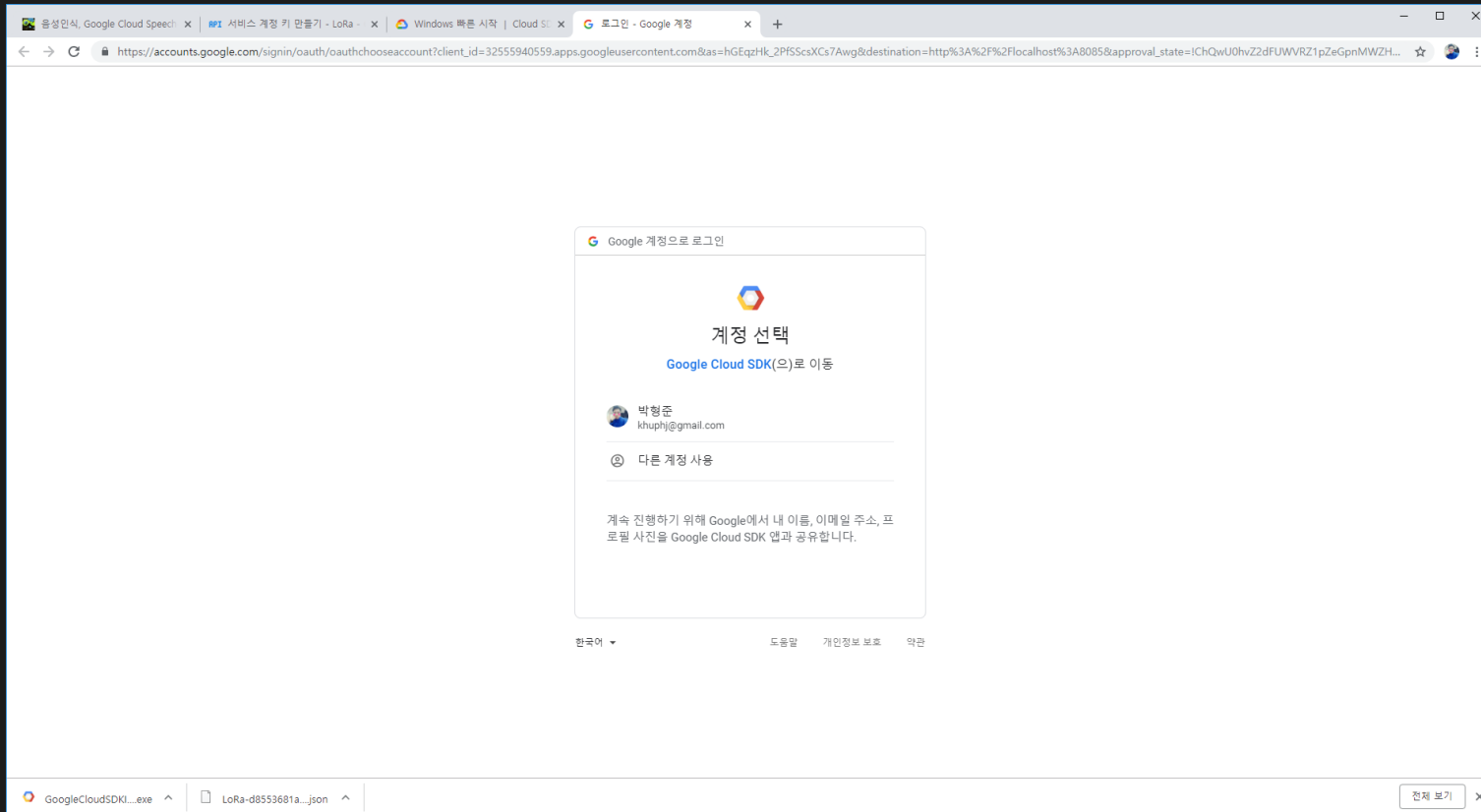
```
C:\WINDOWS#SYSTEM32#cmd.exe - gcloud init
Welcome to the Google Cloud SDK! Run "gcloud -h" to get the list of available commands.
-----
Welcome! This command will take you through the configuration of gcloud.
Your current configuration has been set to: [default]
You can skip diagnostics next time by using the following flag:
  gcloud init --skip-diagnostics
Network diagnostic detects and fixes local network connection issues.
Checking network connection...done.
Reachability Check passed.
Network diagnostic passed (1/1 checks passed).
You must log in to continue. Would you like to log in (Y/n)? _
```

끝나면 자동 실행되거나 안되면

gcloud init 입력

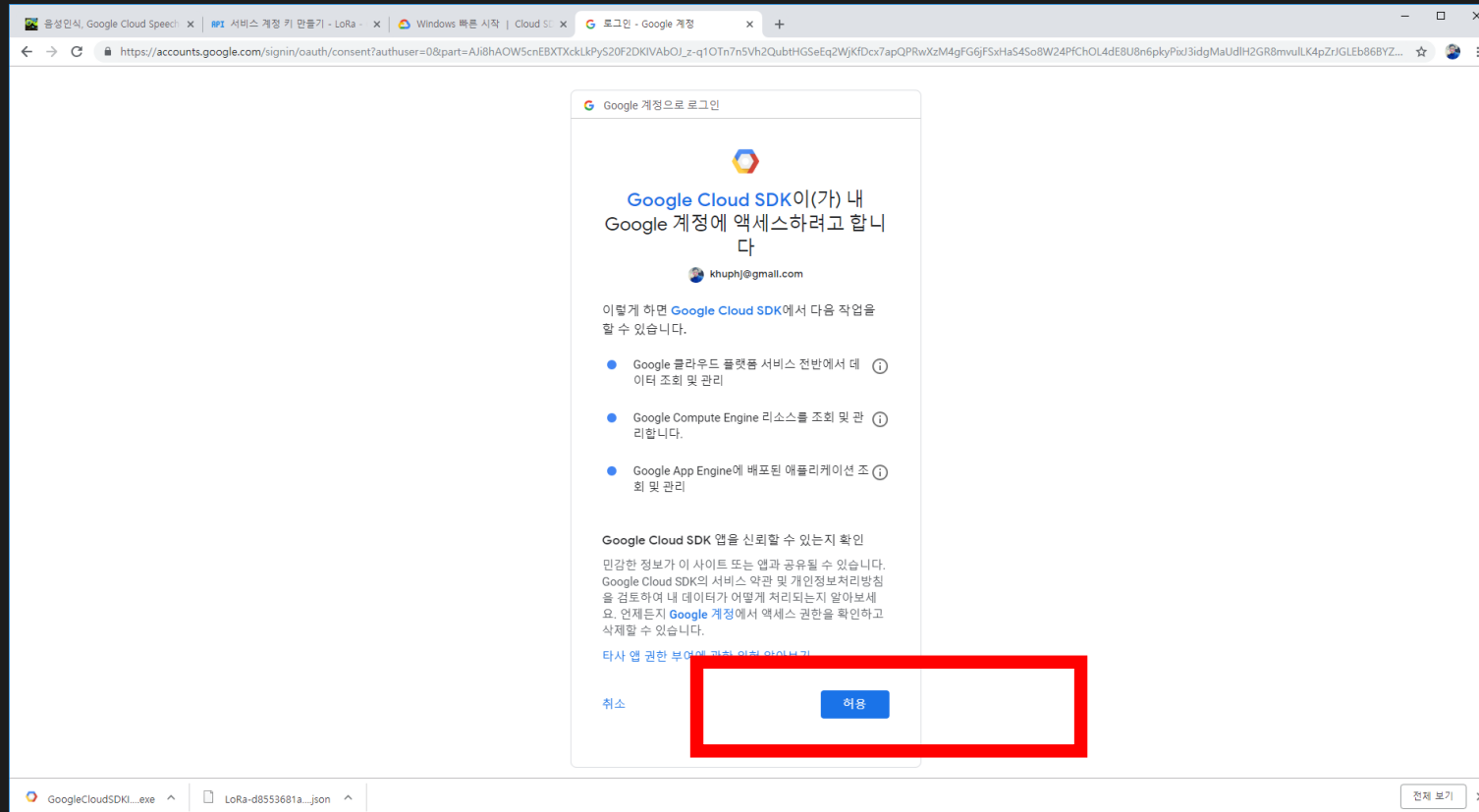


## 03. 구글 SDK 설치



Y를 누르면  
구글계정을 로그인하라고 함

## 03. 구글 SDK 설치



허용버튼 클릭

## 03. 구글 SDK 설치

```
C:\WINDOWS\SYSTEM32\cmd.exe - gcloud init

Your current configuration has been set to: [default]

You can skip diagnostics next time by using the following flag:
  gcloud init --skip-diagnostics

Network diagnostic detects and fixes local network connection issues.
Checking network connection...done.
Reachability Check passed.
Network diagnostic passed (1/1 checks passed).

You must log in to continue. Would you like to log in (Y/n)? Y

Your browser has been opened to visit:

    https://accounts.google.com/o/oauth2/auth?redirect_uri=http%3A%2F%2Flocalhost%3A8085%2F&prompt=select_account&response_type=code&client_id=32555940559.apps.googleusercontent.com&scope=https%3A%2F%2Fwww.googleapis.com%2Fauth%2Fuserinfo.email+https%3A%2F%2Fwww.googleapis.com%2Fauth%2Fcloud-platform+https%3A%2F%2Fwww.googleapis.com%2Fauth%2Fappengine.admin+https%3A%2F%2Fwww.googleapis.com%2Fauth%2Fcompute+https%3A%2F%2Fwww.googleapis.com%2Fauth%2Faccounts.reauth&access_type=offline

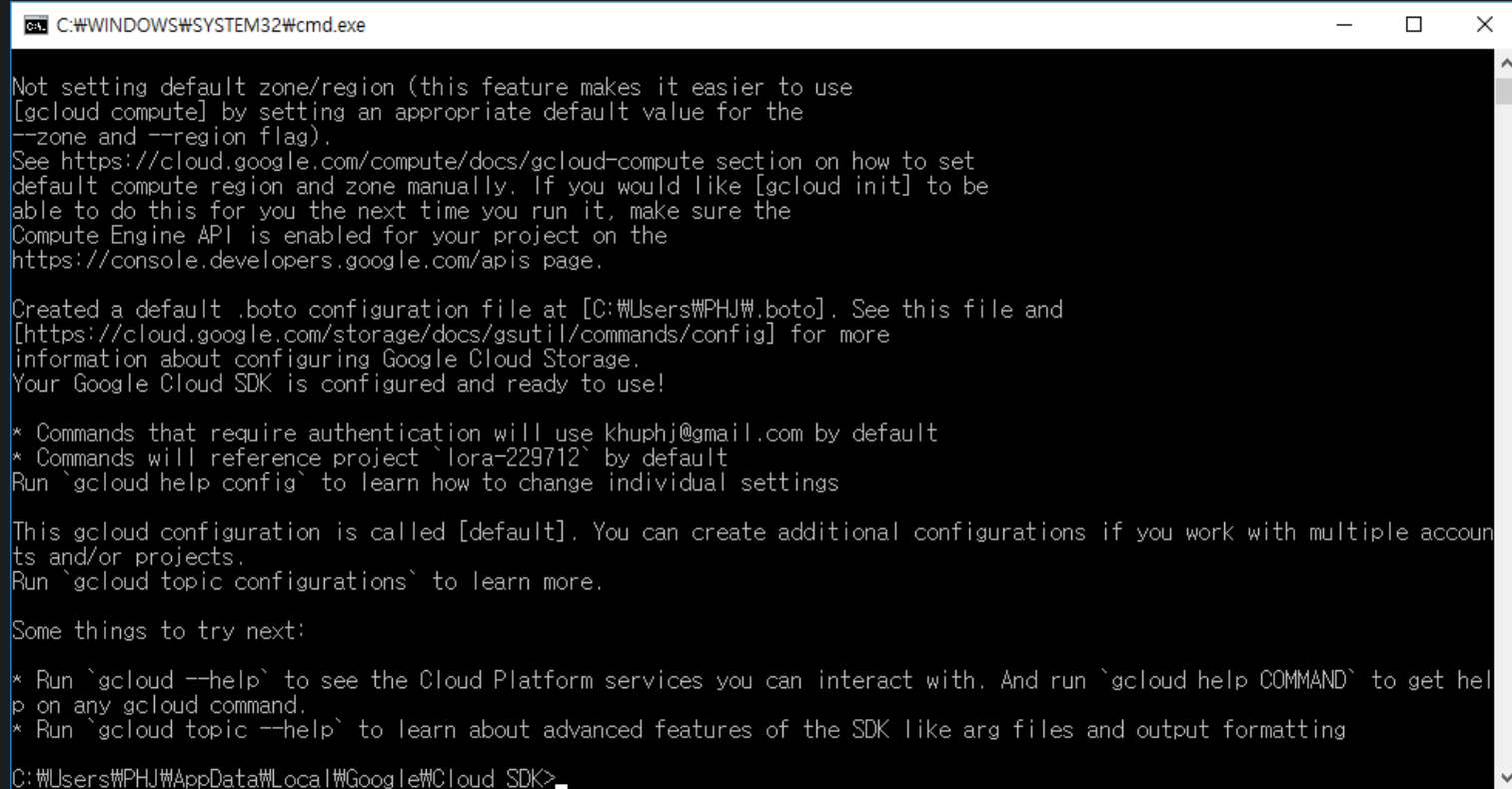
You are logged in as: [khuphj@gmail.com].

Pick cloud project to use:
[1] aisperker-219806
[2] lora-229712
[3] Create a new project
Please enter numeric choice or text value (must exactly match list item): 2
```

그후 커맨드창에

방금만든 프로젝트 선택

## 03. 구글 SDK 설치



```
ca C:\WINDOWS\SYSTEM32\cmd.exe

Not setting default zone/region (this feature makes it easier to use
[gcloud compute] by setting an appropriate default value for the
--zone and --region flag).
See https://cloud.google.com/compute/docs/gcloud-compute section on how to set
default compute region and zone manually. If you would like [gcloud init] to be
able to do this for you the next time you run it, make sure the
Compute Engine API is enabled for your project on the
https://console.developers.google.com/apis page.

Created a default .boto configuration file at [C:\Users\PHJ\.\boto]. See this file and
[https://cloud.google.com/storage/docs/gsutil/commands/config] for more
information about configuring Google Cloud Storage.
Your Google Cloud SDK is configured and ready to use!

* Commands that require authentication will use khuphj@gmail.com by default
* Commands will reference project `lora-229712` by default
Run `gcloud help config` to learn how to change individual settings

This gcloud configuration is called [default]. You can create additional configurations if you work with multiple accounts and/or projects.
Run `gcloud topic configurations` to learn more.

Some things to try next:

* Run `gcloud --help` to see the Cloud Platform services you can interact with. And run `gcloud help COMMAND` to get help on any gcloud command.
* Run `gcloud topic --help` to learn about advanced features of the SDK like arg files and output formatting

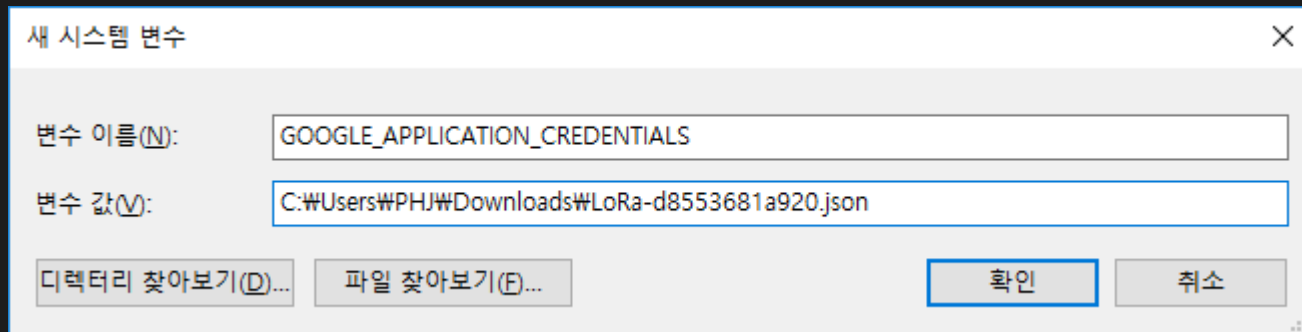
C:\Users\PHJ\AppData\Local\Google\Cloud SDK>
```

준비 끝

### 03. 구글 SDK 설치

만약 안되면

`gcloud auth activate-service-account --key-file="C:\Users\PHJ\Downloads\LoRa-d8553681a920.json"`  
또는

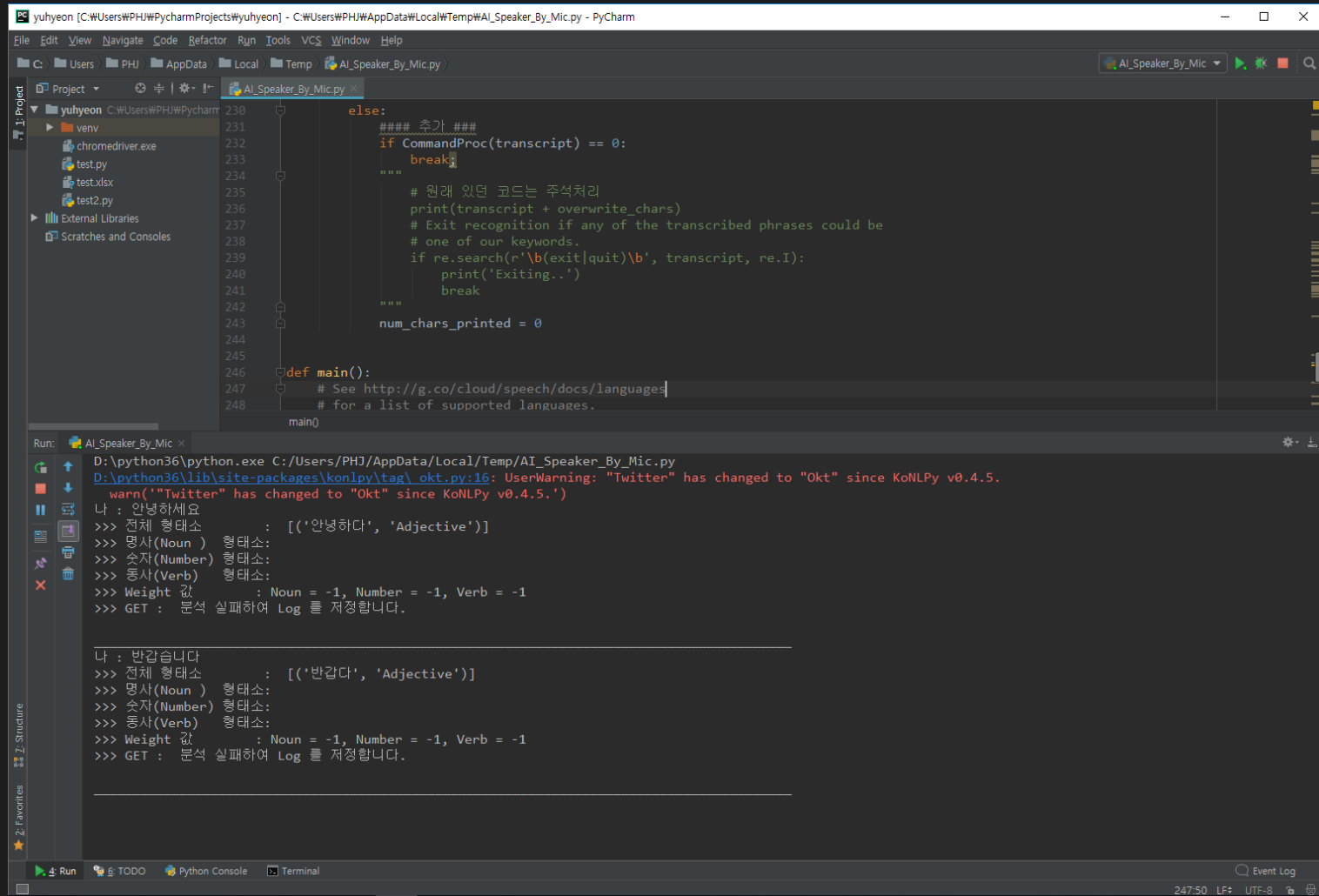


또는

```
import os
os.environ['GOOGLE_APPLICATION_CREDENTIALS'] = "C:\\Users\\PHJ\\Downloads\\LoRa-d8553681a920.json"
```

입력

## 03. 구글 SDK 설치



The image shows a PyCharm IDE window with the file `AI_Speaker_By_Mic.py` open. The code is a Python script that interacts with the Google Cloud Speech-to-Text API. It includes a `main()` function that takes a command as input and processes it. The script uses `CommandProc` to handle the command and `re.search` to find keywords like 'exit' or 'quit'. It also uses `print` to display the transcribed text and the number of characters printed.

```
230 else:
231     ### 추가 ###
232     if CommandProc(transcript) == 0:
233         break
234     # 원래 있던 코드는 주석처리
235     print(transcript + overwrite_chars)
236     # Exit recognition if any of the transcribed phrases could be
237     # one of our keywords.
238     if re.search(r'\b(exit|quit)\b', transcript, re.I):
239         print('Exiting..')
240         break
241     num_chars_printed = 0
242
243 def main():
244     # See http://g.co/cloud/speech/docs/languages
245     # for a list of supported languages.
246
247     main()
```

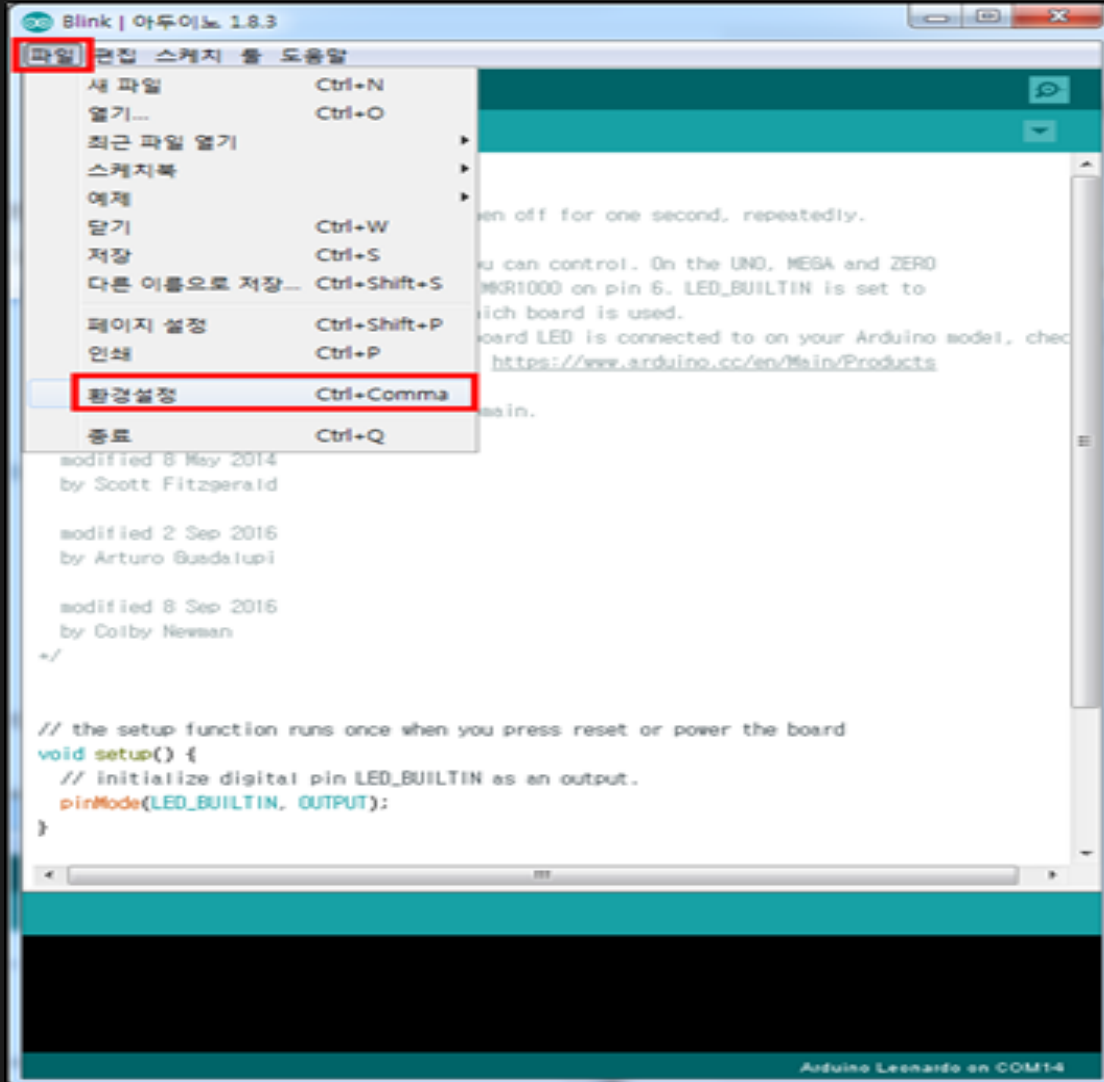
The Run window shows the execution output, which includes a warning about the 'Twitter' keyword being changed to 'Okt' and the results of the speech-to-text API call.

```
Run: AI_Speaker_By_Mic
D:\python36\python.exe C:/Users/PHJ/AppData/Local/Temp/AI_Speaker_By_Mic.py
D:\python36\lib\site-packages\konlpy\tag\okt.py:16: UserWarning: "Twitter" has changed to "Okt" since KoNLPy v0.4.5.
warn("Twitter" has changed to "Okt" since KoNLPy v0.4.5.)
나 : 안녕하세요
>>> 전체 형태소 : [('안녕하다', 'Adjective')]
>>> 명사(Noun) 형태소:
>>> 숫자(Number) 형태소:
>>> 동사(Verb) 형태소:
>>> Weight 값 : Noun = -1, Number = -1, Verb = -1
>>> GET : 분석 실패하여 Log 를 저장합니다.

나 : 반갑습니다
>>> 전체 형태소 : [('반갑다', 'Adjective')]
>>> 명사(Noun) 형태소:
>>> 숫자(Number) 형태소:
>>> 동사(Verb) 형태소:
>>> Weight 값 : Noun = -1, Number = -1, Verb = -1
>>> GET : 분석 실패하여 Log 를 저장합니다.
```

실행해보기

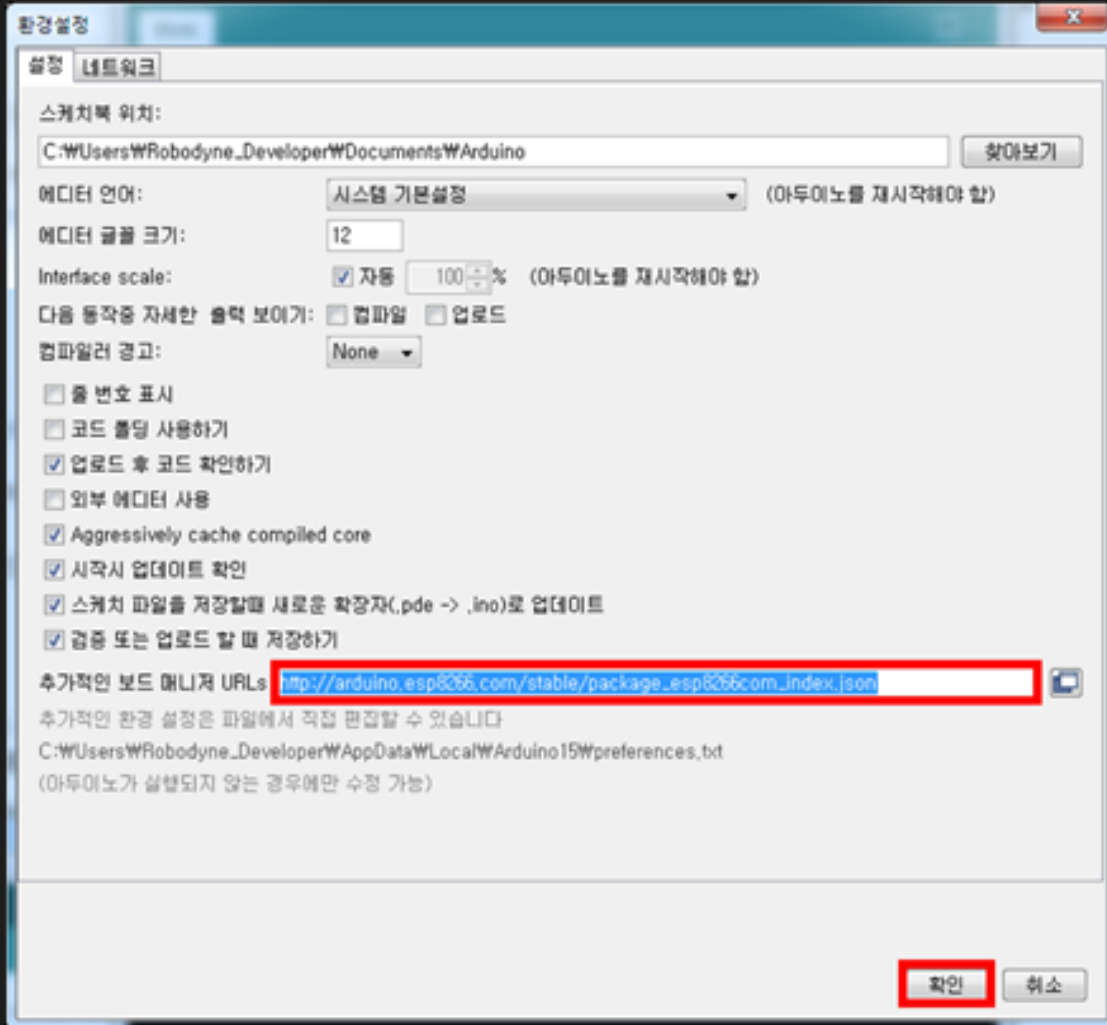
## 04. Wemos D1 보드 셋팅



아두이노 IDE를 열고 파일 - 환경설정을 클릭합니다.



## 04. Wemos D1 보드 셋팅

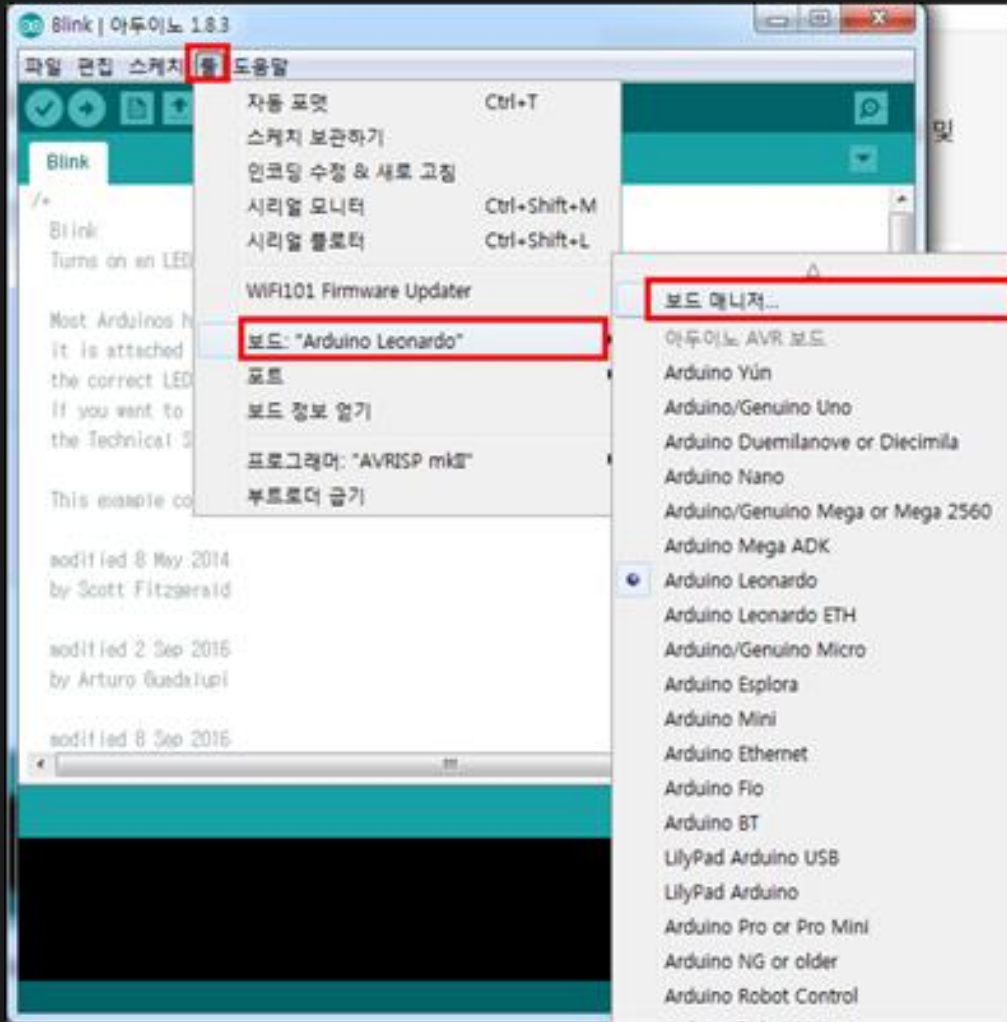


위 사진에서  
빨간색 표시가 되어있는 '추가적인 보드 매니저' 항목에  
아래 url을 복사하여 붙여넣습니다.

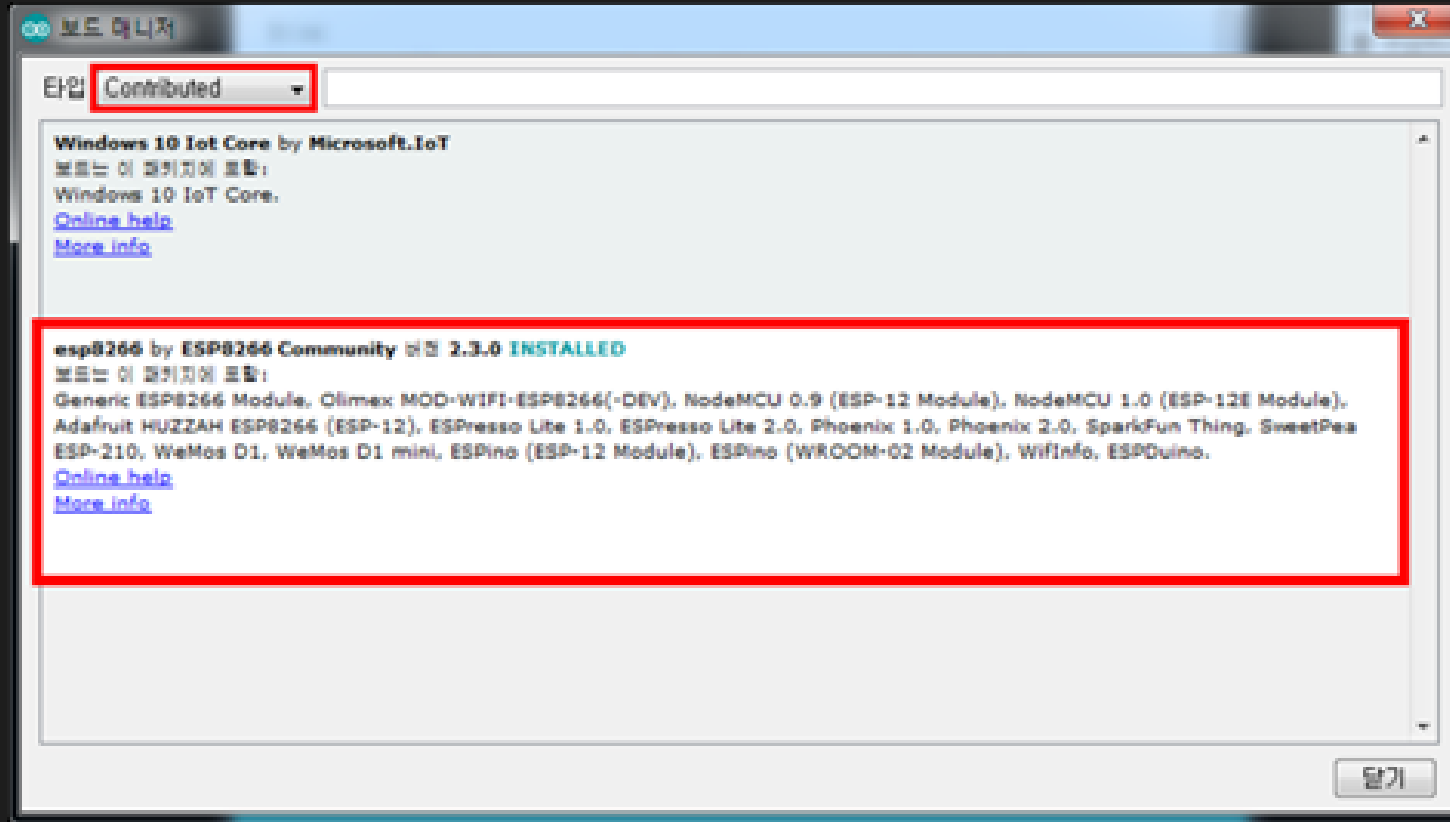
[http://arduino.esp8266.com/stable/package\\_esp8266com\\_index.json](http://arduino.esp8266.com/stable/package_esp8266com_index.json)

## 04. Wemos D1 보드 셋팅

실행해보기

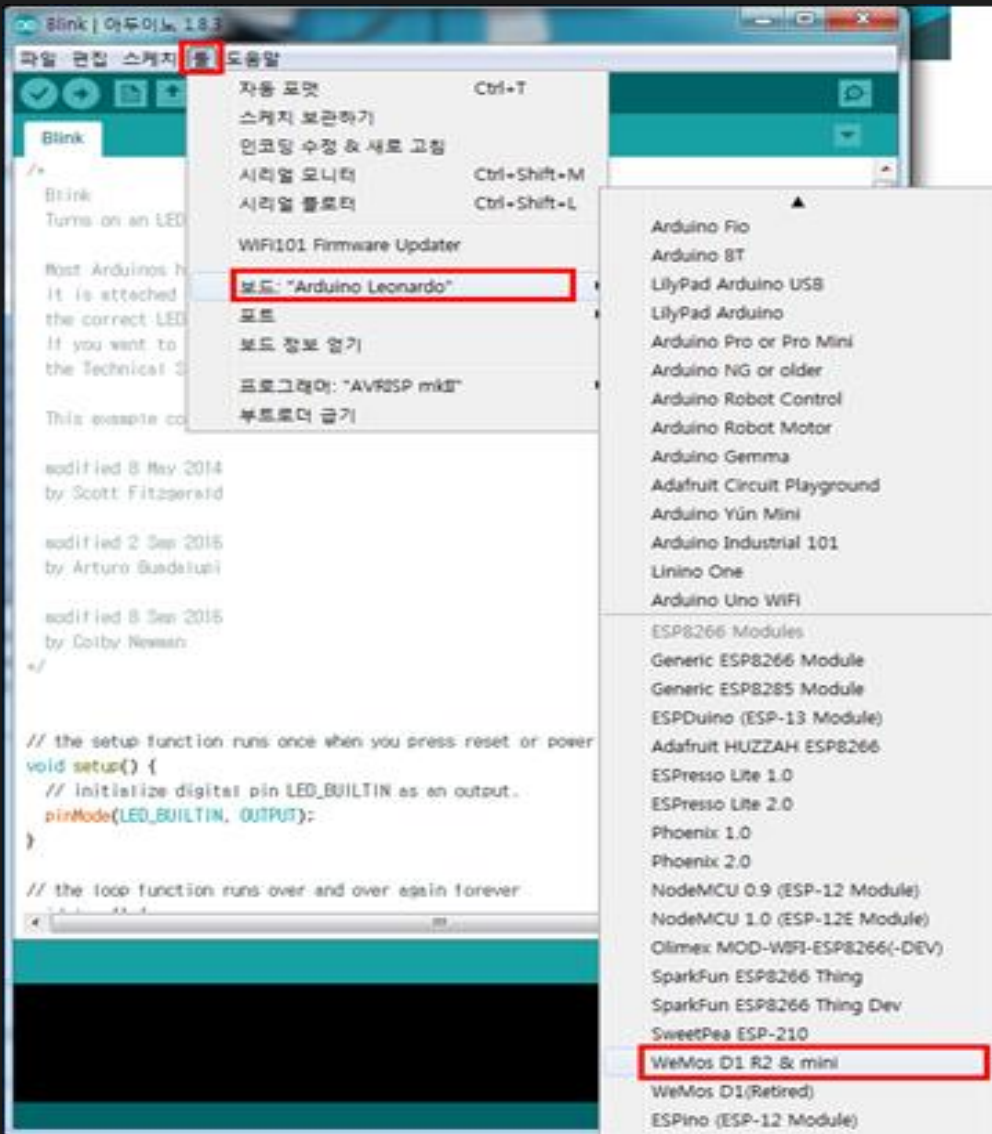


## 04. Wemos D1 보드 셋팅



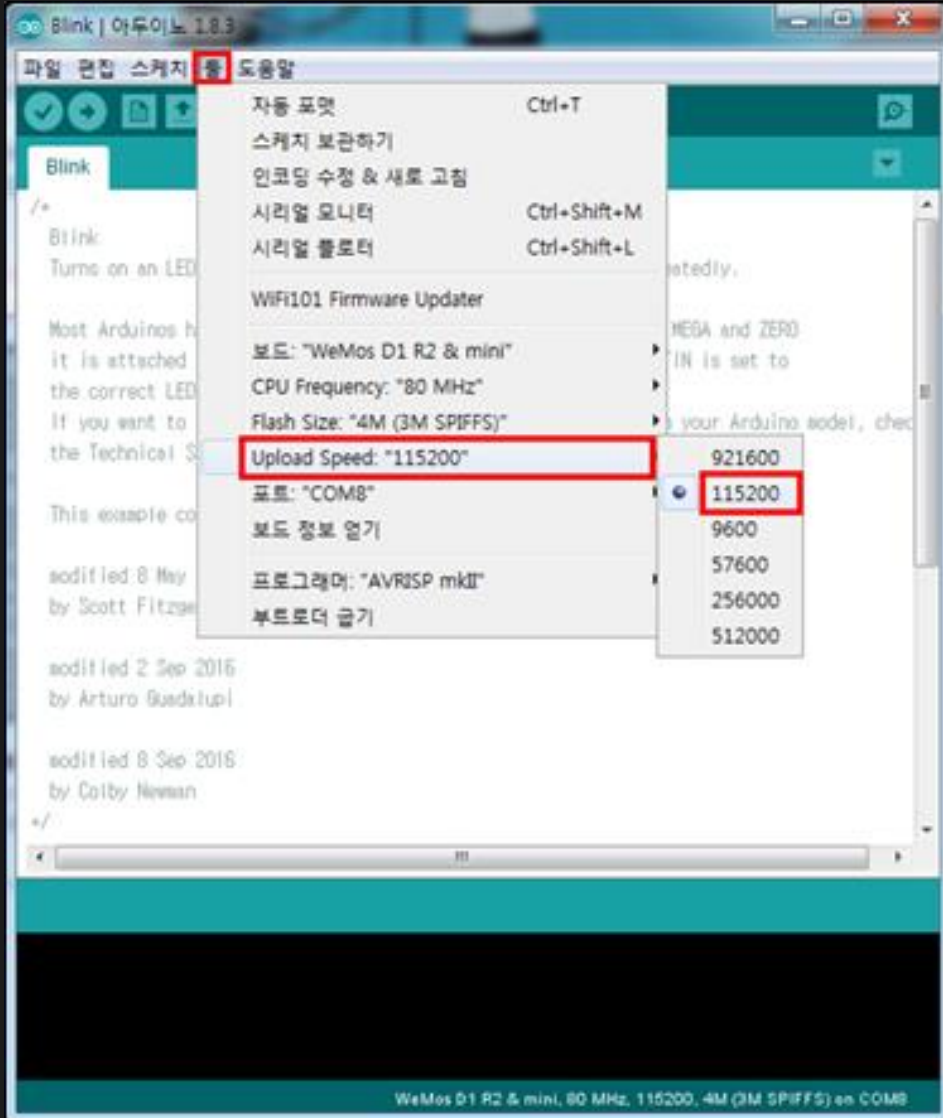
보드 매니저에서 타입 - Contributed로  
설정후 esp8266을 검색합니다.  
ESP8266 Community를 클릭하여  
설치합니다.

## 04. Wemos D1 보드 셋팅



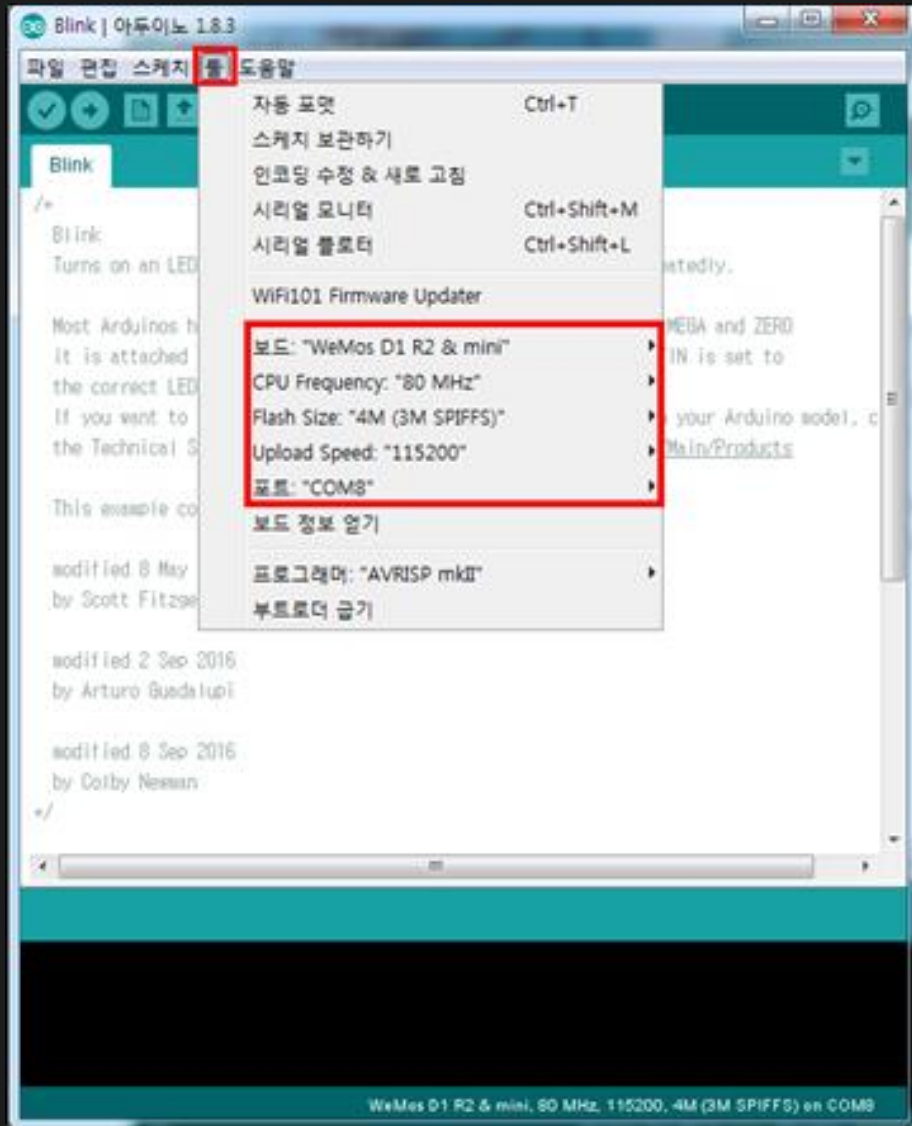
예제를 실행하기 전에 보드 설정을 합니다.  
상단에서 툴 - 보드 - WeMos D1 를 설정합니다.

## 04. Wemos D1 보드 셋팅



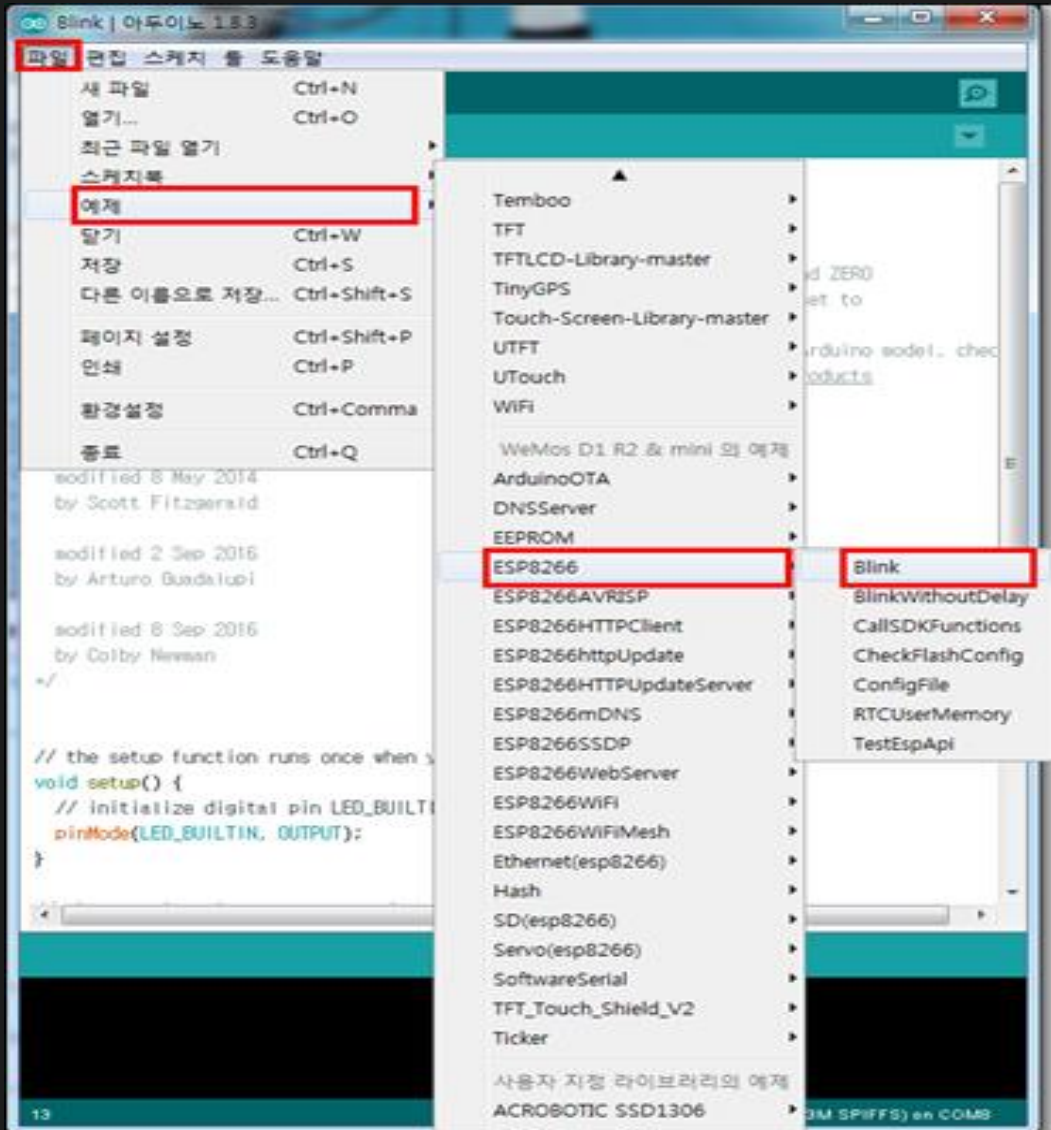
Upload Speed를 115200으로 세팅 합니다.  
(업로드 실패 시 57600으로 변경하여 확인할 수 있습니다.)

## 04. Wemos D1 보드 셋팅



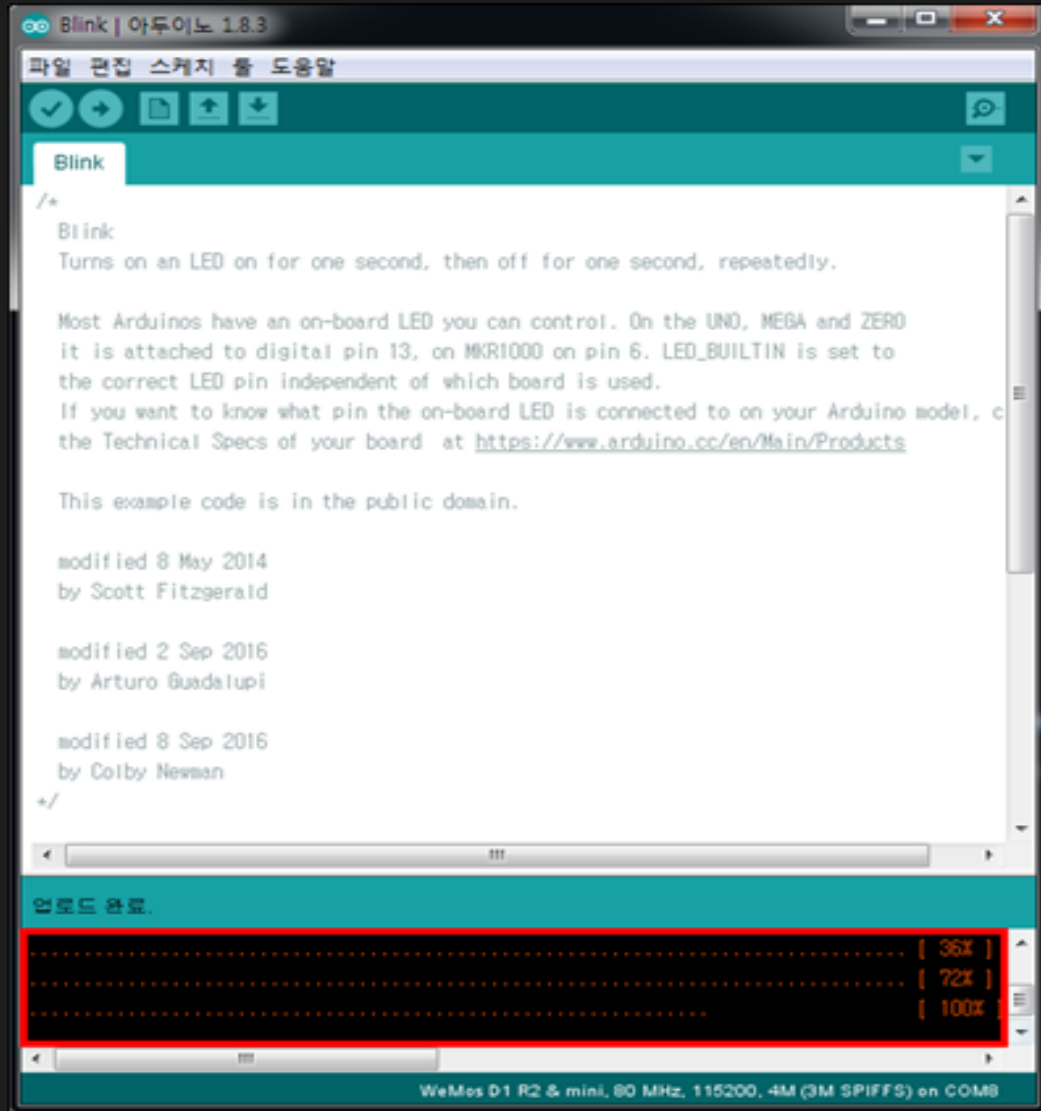
위와 같이 설정 한 후, 알맞은 포트에 연결합니다.

## 04. Wemos D1 보드 셋팅



예제를 실행합니다. 상단의 파일 - 예제 - ESP8266 - Blink 순으로 Blink 예제를 실행 합니다.

## 04. Wemos D1 보드 셋팅



Blink 예제를 D1 보드에 업로드 합니다.  
업로딩 과정은 위와 같으며 시간이 다소 소요됩니다.



## 04. Wemos D1 보드 셋팅

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보드에 있는 WIFI 모듈 부분의 LED가 깜빡이는 것을 확인  
할 수 있습니다.