

1인1프로그래밍언어 마스터제

# 집중프로그래밍언어(코딩클리닉) 교육

전남대학교 SW중심대학사업단

# 1인1프로그래밍언어 마스터제 소개

- 목적

- ✓실전적 SW개발역량 강화를 위하여 SW전공(소프트웨어공학과, 컴퓨터 정보통신공학과, AI융합학부)대상으로 코딩클리닉 교육

- 운영

- ✓학기중 프로그래밍언어(C/C++, **JAVA**, Python) 교과목 운영

- 교육일정


- 일시: 2023. 11. 10(금) 14:00 ~ 16:00
  - 장소: AI융합대학 210호실


- 교육자료




- URL: <https://github.com/yoojaemyeong/java>

# 깃허브 자료실 (<https://github.com/yoojaemyeong/java>)

 **java** Public

 main  1 branch  0 tags

 yoojaemyeong 1인1프로그래밍언어 가이드

 lib	패키지 활용
 1인1프로그래밍언어 마스터제.pdf	1인1프로그래밍언어 마스터제 강의안
 Ex.java	패키지 활용
 README.md	1인1프로그래밍언어 가이드
 java-overview.ipynb	자바 개요
 java1.ipynb	정수상수 대신 열거타입을 사용하기
 overloading.ipynb	Overloading 주의사항
 try-catch-finally.ipynb	예외처리

 README.md

## 1인1프로그래밍언어 마스터제

### 코딩클리닉

- 교육일시: 2023.11.10.(금) 14:00 ~ 16:00
- 교육내용: 자바
- SW개발역량 강화를 위하여

### 목차

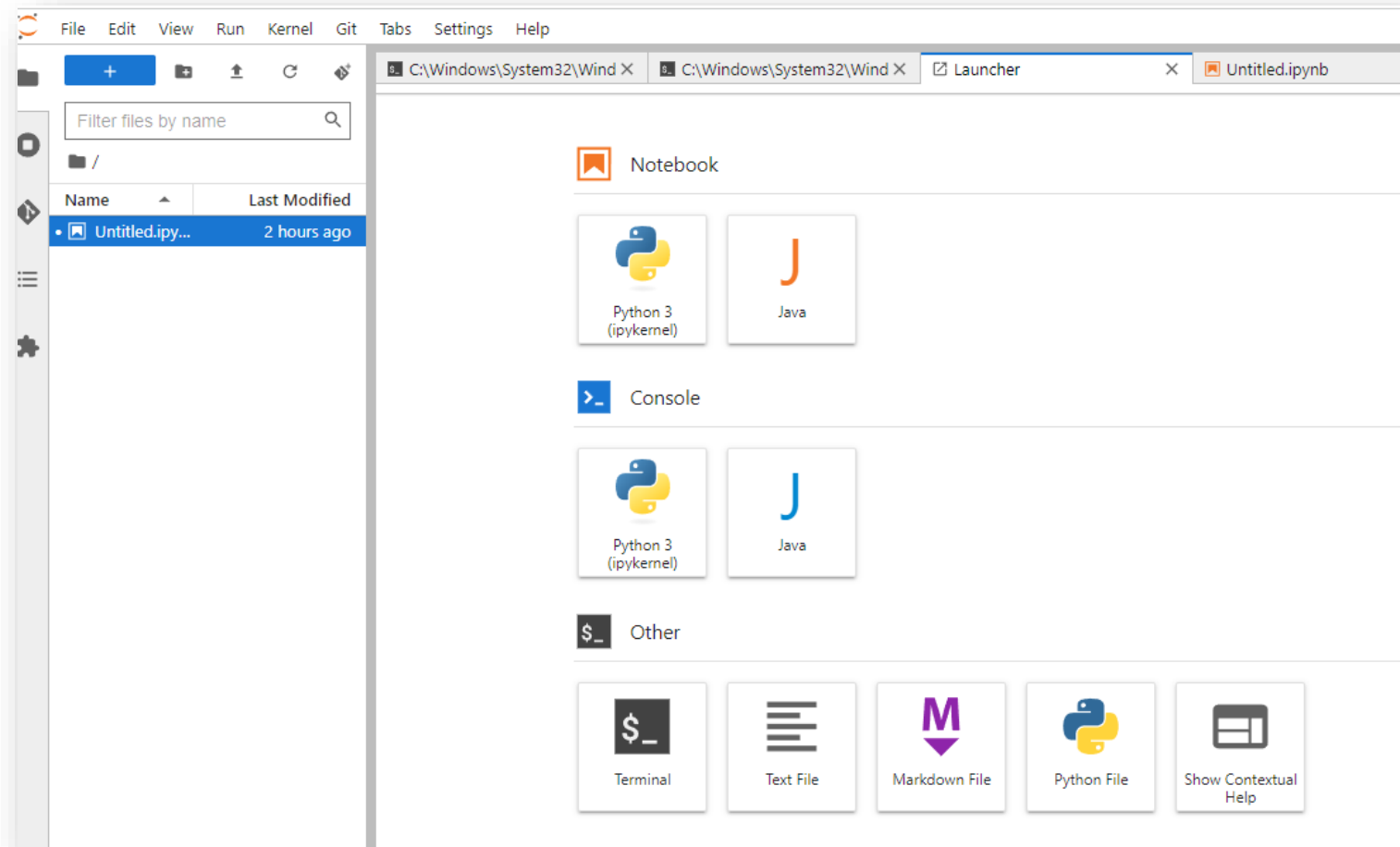
1. [프로그램가이드](#)
2. [자바 개요](#)
3. [try-catch-finally](#)
4. [최적화-overloading 주의사항](#)
5. [최적화-상수대신 열거타입사용](#)

# [자바 활용(1)] 자바 환경 만들기

1. 파이썬 설치(버전 3.11.x) [옵션체크] Add Python 3.11.x to PATH
  - <https://www.python.org/downloads>
2. 자바 설치(최신버전)
  - <https://www.oracle.com/java/technologies/downloads>
3. Jupyterlab 설치 및 환경구성 파워셸 프롬프트 실행하여 작업
  - 실습할 폴더 생성 및 이동: `mkdir d:\Wjava; cd d:\Wjava`
  - Jupyterlab 설치: `pip install jupyterlab`
  - 자바커널 다운로드 및 압출해제: <https://github.com/SpencerPa가/IJava/releases/ijava-1.3.0.zip>
  - 작업위치: `cd d:\Wjava\ijava-1.3.0`
  - 환경구성 및 자바커널 추가
    - `$Env.Path += 'C:\WProgram Files\Java\jdk-21\bin'` ; `cat Env:Path`
    - `$Env.JAVA_HOME='C:\WProgram Files\Java\jdk-21'` ; `cat Env:JAVA_HOME`
    - `python install.py` <= 자바커널 추가
    - `ijinstall` <= 자바커널 추가
    - `pip install --upgrade "jupyterlab<4" jupyterlab-git` <= jupyterlab git extension 설치
4. 주피터랩 실행: `jupyter lab`

```
C:\WUsers\유재명\python2>jupyter lab
[I 2023-10-05 10:54:51.815 ServerApp] Package jupyterlab took 0.0000s to import
[I 2023-10-05 10:54:51.647 ServerApp] Package jupyter_lsp took 0.0373s to import
[W 2023-10-05 10:54:51.647 ServerApp] A `_jupyter_server_extension_points` function
ated in future releases of Jupyter Server.
[I 2023-10-05 10:54:51.662 ServerApp] Package jupyter_server_fileid took 0.0066s to
```

# 실행화면



# [자바활용(3)] 로컬컴퓨터 :: ssh 환경구성

github ssh key pair 방식 이용하기

1. SSH 환경구성: `cd ~ ; mkdir .ssh;`
2. 명령프롬프트에서 ssh key pair 생성

`ssh-keygen.exe`

`id_rsa` : 개인키

`id_rsa.pub` : 공개키

3. 메모장에서 `~/.ssh/config` 편집

4. Github에서 java 저장소 만들기

5. Github에서 공개키 등 등록

6. Jupyter lab에서 git 사용하기

`git remote add ssh-origin git@github.com:[my-id]/java.git`

`git branch -M main`

`git add [new file]`

`git commit -m "자료 추가"`

`git push -u ssh-origin main`

```
PS C:\Users\master\.ssh> ssh-keygen.exe
Generating public/private rsa key pair.
Enter file in which to save the key (C:\Users\master\.ssh\id_rsa):
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in C:\Users\master\.ssh\id_rsa
Your public key has been saved in C:\Users\master\.ssh\id_rsa.pub
The key fingerprint is:
SHA256:NAa9UL0cYS9IoCcmXu3BrLgNHc0kmBraL9Xy03nKPow master@DESKTOP-S3CV8RN
The key's randomart image is:
+---[RSA 3072]-----+
|  . 00.0+0          |
| * = 0+00.          |
| = 0 *. =0. .       |
| 0 * B.+.. .        |
| . + 0...S          |
| . +0 .              |
| ... = .             |
| ... E.* .           |
| . 0...=*            |
+---[SHA256]-----+
```


`~/.ssh/config`

Host github.com

Hostname github.com

IdentityFile ~/.ssh/id\_rsa

# [자바활용(2)] github :: ssh 공개키 등록

**Yoo JaeMyeong (yoojaemyeong)**  
Your personal account [Switch settings context](#)

[Go to your personal profile](#)

Public profile

Account

Appearance

Accessibility

Notifications

Access

Billing and plans

Emails

Password and authentication

Sessions

**SSH and GPG keys**

Organizations

Enterprises

Moderation

Code, planning, and automation

## Add new SSH Key

Title

ssh-java

Key type

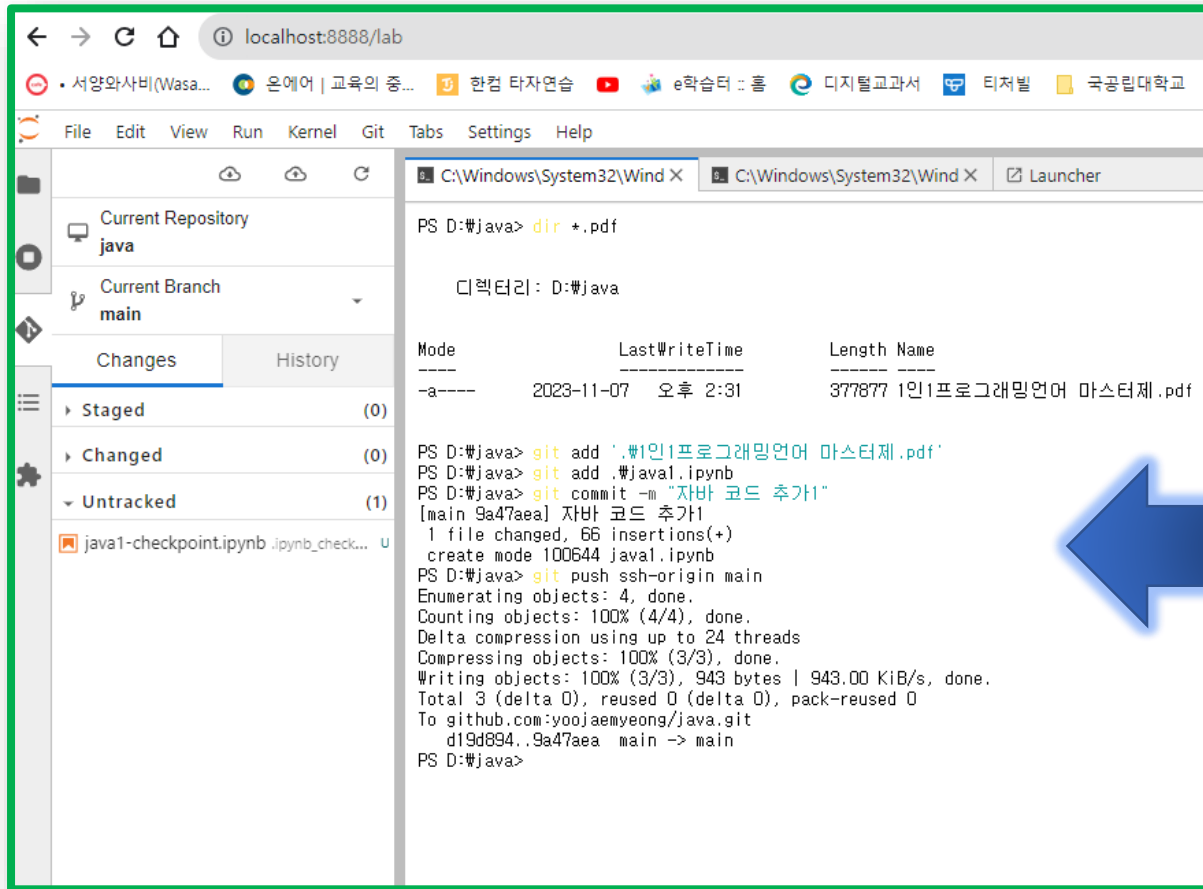
Authentication Key

Key

ssh-rsa  
AAAAB3NzaC1yc2EAAAADAQABAAQgQDLoFzgcuNrMSzrGzWkOFyeWc8wQGSaECnzR9UYMxuXQsiOMOkYA55sTyJWtB2j5MFaWNdpLskrBtb7tIp  
Ex6x1TxSgew2sgNamra5q11a68D0nPPKjbC1AaDRo30VkbQPAaXG//OqUDqHgTn+73NXpHY3klrxV7FFKLlBzmHkb8GUXCEI+Km6LUFaebpUGRARgc  
yPnedv3wJ9MlgmspxUeMB6PrmmHo8aCRR/gq4pEc8wPS3bq85Ux9/8kuXcGDachsJe5VYMfLwVA+zAd6A7cd1B3uM= master@DESKTOP-S3CV8RN

Add SSH key

# 로컬저장소, 원격저장소 보기



The screenshot shows a local IDE window with a terminal and a file explorer. The terminal displays the following commands and output:

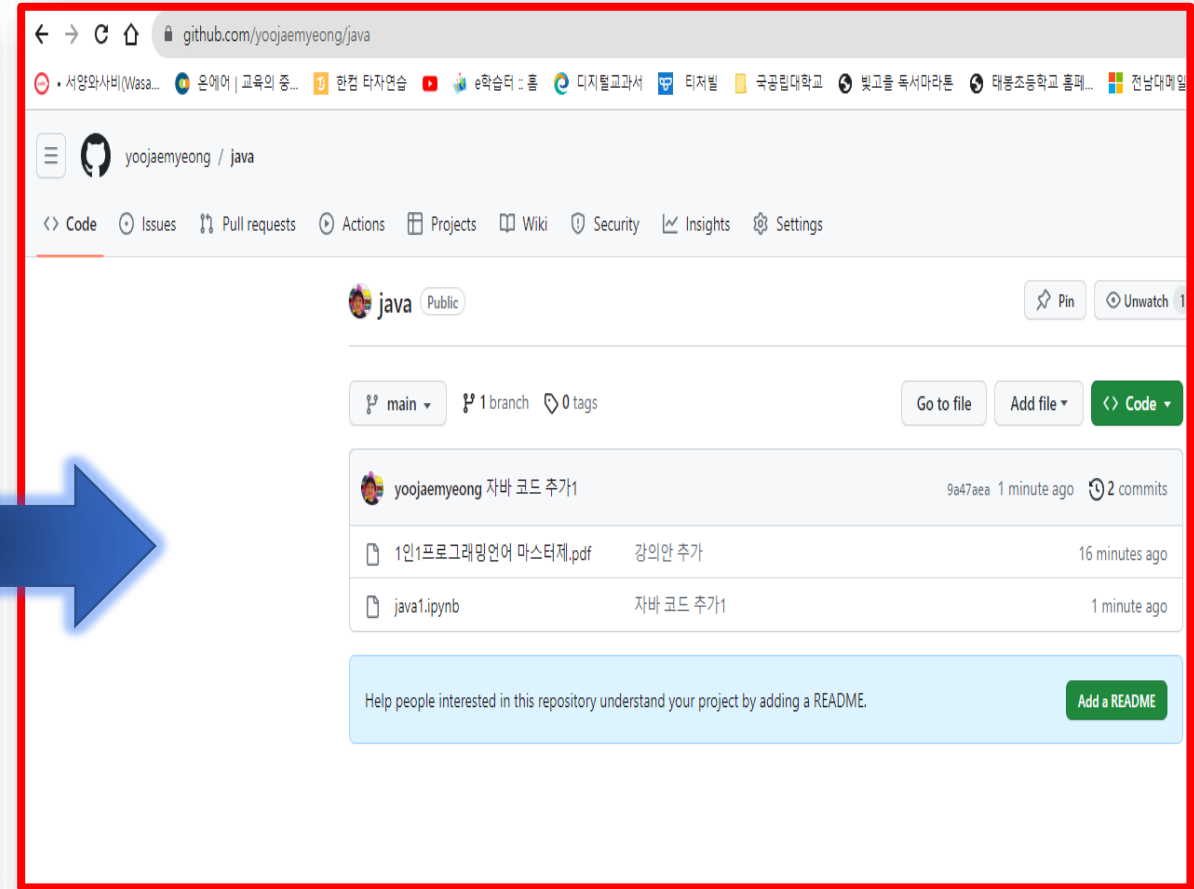
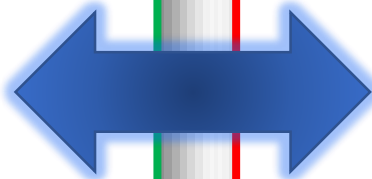
```
PS D:\java> dir *.pdf

디렉터리: D:\java

Mode                LastWriteTime         Length Name
----                -
-a-----         2023-11-07 오후 2:31         377877 1인1프로그래밍언어 마스터제 .pdf

PS D:\java> git add *.pdf
PS D:\java> git add *.ipynb
PS D:\java> git commit -m "자바 코드 추가1"
[main 9a47aea] 자바 코드 추가1
1 file changed, 66 insertions(+)
create mode 100644 java1.ipynb
PS D:\java> git push ssh-origin main
Enumerating objects: 4, done.
Counting objects: 100% (4/4), done.
Delta compression using up to 24 threads
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 943 bytes | 943.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0
To github.com:yoojaemyeong/java.git
d19d894..9a47aea main -> main
PS D:\java>
```

The file explorer on the left shows the current repository 'java' with the main branch. It lists 'Staged' (0), 'Changed' (0), and 'Untracked' (1) files. The untracked file is 'java1-checkpoint.ipynb'.



The screenshot shows the GitHub repository page for 'yoojaemyeong/java'. The repository is public and has 1 branch and 0 tags. The commit history shows two commits:

- 9a47aea 1 minute ago 2 commits: 자바 코드 추가1
- d19d894 16 minutes ago: 1인1프로그래밍언어 마스터제.pdf 강의안 추가

The repository also has a file 'java1.ipynb' added 1 minute ago. A button 'Add a README' is visible at the bottom.