<파일 압축 해제>

1. IFC181.tar 파일을 받아 ~/embedded/week5 로 옮긴다.

```
juhun@juhun-930QCG:~/Downloads$ mv IFC181.tar /home/juhun/embedde
juhun@juhun-930QCG:~/Downloads$ ls
'머신러닝1주차과제_2020161112_정주훈 (1).odt'
 머신러닝1주차과제_2020161112_정주훈.odt
'(제출서류)2024년도 지방대학 활성화 사업 국외 특성화 분야 맞춤형
서.hwp'
'(공고) 2024년도 지방대학 활성화 사업 국외 특성화 분야 맞춤형 진로
고.pdf'
 머신러닝3주차과제_2020161112_정주훈.odt
 머신러닝4주차_2020161112.pdf
 code_1.90.2-1718751586_amd64.deb
 config.seb
 docker-desktop-4.30.0-amd64.deb
 수정된전역DWA에의한자율이동로봇의경로계획.pdf
 finals
'[융합학과]_GPU장비_요약_사용가이드(전전통).pptx'
 homework.txt
'K-City 신호자료_231004.zip'
 KOREATECH-KROAD_version-up-2024_files
 KOREATECH-KROAD_version-up-2024.html
 KORUS_2023-master
 임베디드응용및실습_lec3_linux_shell.pdf
'local_pkg+local_pkg_cpp(1005).zip'
```

2. tar 명령으로 압축을 해제한다.

```
juhun@juhun-930QCG:~/Downloads$ cd
juhun@juhun-930QCG:~$ cd embedded/week5/
juhun@juhun-930QCG:~/embedded/week5$ ls
IFC181.tar
juhun@juhun-930QCG:~/embedded/week5$ tar -xf IFC181.tar
```

```
juhun@juhun-930QCG:~/embedded/week5$ ls
IFC181_01.pdf  IFC181_04.pdf  IFC181_07.pdf  IFC181_10.pdf  IFC
IFC181_02.pdf  IFC181_05.pdf  IFC181_08.pdf  IFC181_11.pdf  IFC
IFC181_03.pdf  IFC181_06.pdf  IFC181_09.pdf  IFC181_12.pdf  IFC
juhun@juhun-930QCG:~/embedded/week5$ ^[
```

3. 2에서 압축해제된 파일들을 IFC181_re.tar로 압축한다.

```
juhun@juhun-930QCG:~/embedded/week5$ tar -cf IFC181_re.tar *.pdf
juhun@juhun-930QCG:~/embedded/week5$ ls
IFC181_01.pdf  IFC181_05.pdf  IFC181_09.pdf  IFC181_13.pdf
IFC181_02.pdf  IFC181_06.pdf  IFC181_10.pdf  IFC181_14.pdf
IFC181_03.pdf  IFC181_07.pdf  IFC181_11.pdf  IFC181_re.tar
IFC181_04.pdf  IFC181_08.pdf  IFC181_12.pdf  IFC181.tar
juhun@juhun-930QCG:~/embedded/week5$
```

4. 2에서 압축해제된 파일들을 zip명령으로 IFC181_re.zip으로 압축한다.
- 이때 zip 명령을 수행할 수 있도록 zip을 설치한다.
: sudo apt-get install zip

```
juhun@juhun-930QCG:~/embedded/week5$ zip IFC181_re.zip *.pdf
  adding: IFC181_01.pdf (deflated 20%)
  adding: IFC181_02.pdf (deflated 5%)
  adding: IFC181_03.pdf (deflated 22%)
  adding: IFC181_04.pdf (deflated 19%)
  adding: IFC181_05.pdf (deflated 13%)
  adding: IFC181_06.pdf (deflated 15%)
  adding: IFC181_07.pdf (deflated 13%)
  adding: IFC181_08.pdf (deflated 15%)
  adding: IFC181_09.pdf (deflated 10%)
  adding: IFC181_10.pdf (deflated 21%)
  adding: IFC181_11.pdf (deflated 15%)
  adding: IFC181_12.pdf (deflated 18%)
  adding: IFC181_13.pdf (deflated 17%)
  adding: IFC181_14.pdf (deflated 19%)
```

1. 4에서 나온 IFC181_re.zip 파일을 unzip 명령을 통해 압축해제 한다.

```
juhun@juhun-930QCG:~/embedded/week5$ unzip IFC181_re.zip
Archive:  IFC181_re.zip
replace IFC181_01.pdf? [y]es, [n]o, [A]ll, [N]one, [r]ename: ㅛ
error:  invalid response [ㅛ]
replace IFC181_01.pdf? [y]es, [n]o, [A]ll, [N]one, [r]ename: y
  inflating: IFC181_01.pdf
replace IFC181_02.pdf? [y]es, [n]o, [A]ll, [N]one, [r]ename: y
  inflating: IFC181_02.pdf
replace IFC181_03.pdf? [y]es, [n]o, [A]ll, [N]one, [r]ename: y
  inflating: IFC181_03.pdf
replace IFC181_04.pdf? [y]es, [n]o, [A]ll, [N]one, [r]ename: y
  inflating: IFC181_04.pdf
replace IFC181_05.pdf? [y]es, [n]o, [A]ll, [N]one, [r]ename: y
  inflating: IFC181_05.pdf
replace IFC181_06.pdf? [y]es, [n]o, [A]ll, [N]one, [r]ename: y
  inflating: IFC181_06.pdf
replace IFC181_07.pdf? [y]es, [n]o, [A]ll, [N]one, [r]ename: y
  inflating: IFC181_07.pdf
replace IFC181_08.pdf? [y]es, [n]o, [A]ll, [N]one, [r]ename: y
  inflating: IFC181_08.pdf
replace IFC181_09.pdf? [y]es, [n]o, [A]ll, [N]one, [r]ename: y
  inflating: IFC181_09.pdf
replace IFC181_10.pdf? [y]es, [n]o, [A]ll, [N]one, [r]ename: y
  inflating: IFC181_10.pdf
replace IFC181_11.pdf? [y]es, [n]o, [A]ll, [N]one, [r]ename: y
  inflating: IFC181_11.pdf
replace IFC181_12.pdf? [y]es, [n]o, [A]ll, [N]one, [r]ename: y
  inflating: IFC181_12.pdf
replace IFC181_13.pdf? [y]es, [n]o, [A]ll, [N]one, [r]ename: y
  inflating: IFC181_13.pdf
replace IFC181_14.pdf? [y]es, [n]o, [A]ll, [N]one, [r]ename: y
  inflating: IFC181_14.pdf
```

<find 명령어 연습>

6. ~ (home) 디렉토리로 이동하고 find 명령을 통해 embedded폴더에서(하위폴더 포함) .pdf 파일을 찾는 명령을 수행해본다.

```
juhun@juhun-930QCG:/home$ find juhun/embedded/week5/
juhun/embedded/week5/
juhun/embedded/week5/IFC181_13.pdf
juhun/embedded/week5/IFC181_09.pdf
juhun/embedded/week5/IFC181_re.tar
juhun/embedded/week5/IFC181_06.pdf
juhun/embedded/week5/IFC181_14.pdf
juhun/embedded/week5/IFC181_01.pdf
juhun/embedded/week5/IFC181_07.pdf
juhun/embedded/week5/IFC181_12.pdf
juhun/embedded/week5/IFC181_02.pdf
juhun/embedded/week5/IFC181_re.zip
juhun/embedded/week5/IFC181_11.pdf
juhun/embedded/week5/IFC181_10.pdf
juhun/embedded/week5/IFC181_03.pdf
juhun/embedded/week5/IFC181_05.pdf
juhun/embedded/week5/IFC181_04.pdf
juhun/embedded/week5/IFC181.tar
juhun/embedded/week5/IFC181_08.pdf
```

7. 아래의 명령 결과가 동일한지 아닌지 결과를 보이고 동작 결과를 설명하시오

innosm@innosm:~ $find . -name *.pdf

```
 iner  /none/inosn    no oeen rees or oireorory
juhun@juhun-930QCG:~$ find . -name "*.pdf"
./juhunnote/Batch-informed-trees/Batch_informed_trees.pdf
./juhunnote/Batch-informed-trees/Papers/Direct Informed Sampling.pdf
./juhunnote/Batch-informed-trees/Papers/BIT.pdf
./.local/share/Trash/files/2장 행복 경험과 긍정 정서_활동지2.pdf
./.local/share/Trash/files/2021.pdf
./.local/share/Trash/files/TalkFile_s41598-023-30631-x.pdf (1).pdf
./.local/share/Trash/files/2022.pdf
./embedded/week5/IFC181_13.pdf
./embedded/week5/IFC181_09.pdf
./embedded/week5/IFC181_06.pdf
./embedded/week5/IFC181_14.pdf
./embedded/week5/IFC181_01.pdf
./embedded/week5/IFC181_07.pdf
./embedded/week5/IFC181_12.pdf
./embedded/week5/IFC181_02.pdf
./embedded/week5/IFC181_11.pdf
./embedded/week5/IFC181_10.pdf
./embedded/week5/IFC181_03.pdf
./embedded/week5/IFC181_05.pdf
./embedded/week5/IFC181_04.pdf
./embedded/week5/IFC181_08.pdf
./Downloads/TalkFile_s41598-023-30631-x.pdf.pdf
./Downloads/(공고) 2024년도 지방대학 활성화 사업 국외 특성화 분야 맞
방 모집 공고.pdf
./Downloads/임베디드응용및실습_lec3_linux_shell.pdf
```

innosm@innosm:~ $find ./ -name *.pdf

```
./                                          
juhun@juhun-930QCG:~$ find ./ -name "*.pdf"
./juhunnote/Batch-informed-trees/Batch_informed_trees.pdf
./juhunnote/Batch-informed-trees/Papers/Direct Informed Sampling.pdf
./juhunnote/Batch-informed-trees/Papers/BIT.pdf
./.local/share/Trash/files/2장 행복 경험과 긍정 정서_활동지2.pdf
./.local/share/Trash/files/2021.pdf
./.local/share/Trash/files/TalkFile_s41598-023-30631-x.pdf (1).pdf
./.local/share/Trash/files/2022.pdf
./embedded/week5/IFC181_13.pdf
./embedded/week5/IFC181_09.pdf
./embedded/week5/IFC181_06.pdf
./embedded/week5/IFC181_14.pdf
./embedded/week5/IFC181_01.pdf
./embedded/week5/IFC181_07.pdf
./embedded/week5/IFC181_12.pdf
./embedded/week5/IFC181_02.pdf
./embedded/week5/IFC181_11.pdf
./embedded/week5/IFC181_10.pdf
./embedded/week5/IFC181_03.pdf
./embedded/week5/IFC181_05.pdf
./embedded/week5/IFC181_04.pdf
./embedded/week5/IFC181_08.pdf
./Downloads/TalkFile_s41598-023-30631-x.pdf.pdf
./Downloads/(공고) 2024년도 지방대학 활성화 사업 국외 특성화 분야 맞
방 모집 공고.pdf
./Downloads/임베디드응용및실습_lec3_linux_shell.pdf
./Downloads/머신러닝4주차_2020161112.pdf
./Downloads/수정된전역DWA에의한자율이동로봇의경로계획.pdf
./Downloads/Radar-Based_Human_Activity_Recognition_Combining_RangeTim
ps_and_Range-Distributed-Convolu.pdf
./Downloads/TalkFile_sensors-23-03185.pdf.pdf
```

innosm@innosm:~ $find -name *.pdf

```
 iner  /none/inosn    no oeen rees or oireorory
juhun@juhun-930QCG:~$ find -name "*.pdf"
./juhunnote/Batch-informed-trees/Batch_informed_trees.pdf
./juhunnote/Batch-informed-trees/Papers/Direct Informed Sampling.pdf
./juhunnote/Batch-informed-trees/Papers/BIT.pdf
./.local/share/Trash/files/2장 행복 경험과 긍정 정서_활동지2.pdf
./.local/share/Trash/files/2021.pdf
./.local/share/Trash/files/TalkFile_s41598-023-30631-x.pdf (1).pdf
./.local/share/Trash/files/2022.pdf
./embedded/week5/IFC181_13.pdf
./embedded/week5/IFC181_09.pdf
./embedded/week5/IFC181_06.pdf
./embedded/week5/IFC181_14.pdf
./embedded/week5/IFC181_01.pdf
./embedded/week5/IFC181_07.pdf
./embedded/week5/IFC181_12.pdf
./embedded/week5/IFC181_02.pdf
./embedded/week5/IFC181_11.pdf
./embedded/week5/IFC181_10.pdf
./embedded/week5/IFC181_03.pdf
./embedded/week5/IFC181_05.pdf
./embedded/week5/IFC181_04.pdf
./embedded/week5/IFC181_08.pdf
./Downloads/TalkFile_s41598-023-30631-x.pdf.pdf
./Downloads/(공고) 2024년도 지방대학 활성화 사업 국외 특성화 분야 맞
방 모집 공고.pdf
./Downloads/임베디드응용및실습_lec3_linux_shell.pdf
./Downloads/머신러닝4주차_2020161112.pdf
./Downloads/수정된전역DWA에의한자율이동로봇의경로계획.pdf
./Downloads/Radar-Based_Human_Activity_Recognition_Combining_RangeTim
ps_and_Range-Distributed-Convolu.pdf
./Downloads/TalkFile_sensors-23-03185.pdf.pdf
```

innosm@innosm:~ $find ~ -name *.pdf

```
juhun@juhun-930QCG:~$ find ~ -name "*.pdf"
/home/juhun/juhunnote/Batch-informed-trees/Batch_informed_trees.pdf
/home/juhun/juhunnote/Batch-informed-trees/Papers/Direct Informed Sar
/home/juhun/juhunnote/Batch-informed-trees/Papers/BIT.pdf
/home/juhun/.local/share/Trash/files/2장 행복 경험과 긍정 정서_활동자
2021.pdf
/home/juhun/.local/share/Trash/files/TalkFile_s41598-023-30631-x.pdf
/home/juhun/.local/share/Trash/files/2022.pdf
/home/juhun/embedded/week5/IFC181_13.pdf
/home/juhun/embedded/week5/IFC181_09.pdf
/home/juhun/embedded/week5/IFC181_06.pdf
/home/juhun/embedded/week5/IFC181_14.pdf
/home/juhun/embedded/week5/IFC181_01.pdf
/home/juhun/embedded/week5/IFC181_07.pdf
/home/juhun/embedded/week5/IFC181_12.pdf
/home/juhun/embedded/week5/IFC181_02.pdf
/home/juhun/embedded/week5/IFC181_11.pdf
/home/juhun/embedded/week5/IFC181_10.pdf
/home/juhun/embedded/week5/IFC181_03.pdf
/home/juhun/embedded/week5/IFC181_05.pdf
/home/juhun/embedded/week5/IFC181_04.pdf
/home/juhun/embedded/week5/IFC181_08.pdf
/home/juhun/Downloads/TalkFile_s41598-023-30631-x.pdf.pdf
/home/juhun/Downloads/(공고) 2024년도 지방대학 활성화 사업 국외 특성회
형 진로 탐방 모집 공고.pdf
/home/juhun/Downloads/임베디드응용및실습_lec3_linux_shell.pdf
/home/juhun/Downloads/머신러닝4주차_2020161112.pdf
/home/juhun/Downloads/수정된전역DWA에의한자율이동로봇의경로계획.pdf
/home/juhun/Downloads/Radar-Based_Human_Activity_Recognition_Combini
Doppler_Maps_and_Range-Distributed-Convolu.pdf
/home/juhun/Downloads/TalkFile_sensors-23-03185.pdf.pdf
```

innosm@innosm:~ $find /home/innosm -name *.pdf

```
juhun@juhun-930QCG:~$ find /home/juhun/ -name "*.pdf"
/home/juhun/juhunnote/Batch-informed-trees/Batch_informed_trees.pdf
/home/juhun/juhunnote/Batch-informed-trees/Papers/Direct Informed Sar
/home/juhun/juhunnote/Batch-informed-trees/Papers/BIT.pdf
/home/juhun/.local/share/Trash/files/2장 행복 경험과 긍정 정서_활동자
/home/juhun/.local/share/Trash/files/2021.pdf
/home/juhun/.local/share/Trash/files/TalkFile_s41598-023-30631-x.pdf
/home/juhun/.local/share/Trash/files/2022.pdf
/home/juhun/embedded/week5/IFC181_13.pdf
/home/juhun/embedded/week5/IFC181_09.pdf
/home/juhun/embedded/week5/IFC181_06.pdf
/home/juhun/embedded/week5/IFC181_14.pdf
/home/juhun/embedded/week5/IFC181_01.pdf
/home/juhun/embedded/week5/IFC181_07.pdf
/home/juhun/embedded/week5/IFC181_12.pdf
/home/juhun/embedded/week5/IFC181_02.pdf
/home/juhun/embedded/week5/IFC181_11.pdf
/home/juhun/embedded/week5/IFC181_10.pdf
/home/juhun/embedded/week5/IFC181_03.pdf
/home/juhun/embedded/week5/IFC181_05.pdf
/home/juhun/embedded/week5/IFC181_04.pdf
/home/juhun/embedded/week5/IFC181_08.pdf
/home/juhun/Downloads/TalkFile_s41598-023-30631-x.pdf.pdf
/home/juhun/Downloads/(공고) 2024년도 지방대학 활성화 사업 국외 특성회
형 진로 탐방 모집 공고.pdf
/home/juhun/Downloads/임베디드응용및실습_lec3_linux_shell.pdf
/home/juhun/Downloads/머신러닝4주차_2020161112.pdf
/home/juhun/Downloads/수정된전역DWA에의한자율이동로봇의경로계획.pdf
/home/juhun/Downloads/Radar-Based_Human_Activity_Recognition_Combini
Doppler_Maps_and_Range-Distributed-Convolu.pdf
/home/juhun/Downloads/TalkFile_sensors-23-03185.pdf.pdf
```

- **`find . -name "*.pdf"`**
  - 현재 디렉토리(`.`)와 그 하위 디렉토리에서 `.pdf` 파일을 찾습니다.
- **`find ./ -name "*.pdf"`**
  - 현재 디렉토리(`./`)와 그 하위 디렉토리에서 `.pdf` 파일을 찾습니다.
  - 결과는 첫 번째 명령어와 동일합니다.
- **`find ~ -name "*.pdf"`**
  - 사용자의 홈 디렉토리(`~`)와 그 하위 디렉토리에서 `.pdf` 파일을 찾습니다.
  - 홈 디렉토리의 모든 파일을 검색합니다.
- **`find /home/innosm -name "*.pdf"`**
  - `/home/innosm` 경로 아래에서 `.pdf` 파일을 찾습니다.
  - 특정 사용자의 홈 디렉토리를 검색합니다.

8. ~ (home) 디렉토리로 이동하고, week5 폴더가 있는지 검색하려고 한다.
적절한 명령을 수행하여 week5 폴더를 검색하고 결과를 보이시오.

```
juhun@juhun-930QCG:~$ df -h
Filesystem       Size  Used Avail Use% Mounted on
tmpfs            771M  2.6M  768M   1% /run
/dev/nvme0n1p6   107G   73G   29G  72% /
tmpfs            3.8G  156M  3.7G   5% /dev/shm
tmpfs            5.0M  4.0K  5.0M   1% /run/lock
efivarfs         128K   62K   62K  50% /sys/firmware/efi/efivars
tmpfs            3.8G     0  3.8G   0% /run/qemu
/dev/nvme0n1p1   256M   32M  225M  13% /boot/efi
tmpfs            771M  140K  771M   1% /run/user/1000
```

<파일 용량 확인>
9. 아래 명령을 수행한 결과를 보이시오.
df -h

10. 아래 명령을 수행한 결과를 보이시오.
cd ~
cd embedded
du -h

```
juhun@juhun-930QCG:~$ cd ~
juhun@juhun-930QCG:~$ cd embedded
juhun@juhun-930QCG:~/embedded$ du -h
16M     ./week5
16M     .
```

1. 10번에서 현재 embedded 폴더의 총 사용량은(하위폴더 포함, 단위 표시)?
16MB
2. cd embedded/week5 를 수행하여 위치를 이동하고, 아래 명령을 차례로 수행하시오
3. df .

```
juhun@juhun-930QCG:~/embedded$ cd week5
df .
Filesystem       1K-blocks     Used Available Use% Mounted on
/dev/nvme0n1p6 111618380 75737900  30164412  72% /
```

4. 이 폴더에 temp_file 파일 생성하고 파일에 1을 기록
5. stat temp_file 명령을 통해 파일의 크기를 확인
6. df .

```
juhun@juhun-930QCG:~/embedded/week5$ touch temp_file
echo 1 > temp_file
juhun@juhun-930QCG:~/embedded/week5$ stat temp_file
  File: temp_file
  Size: 2            Blocks: 8          IO Block: 4096   regular file
Device: 10306h/66310d   Inode: 3840673      Links: 1
Access: (0664/-rw-rw-r--)  Uid: ( 1000/   juhun)   Gid: ( 1000/   juhun)
Access: 2024-10-08 22:50:11.217274087 +0900
Modify: 2024-10-08 22:50:11.217274087 +0900
Change: 2024-10-08 22:50:11.217274087 +0900
 Birth: 2024-10-08 22:50:11.217274087 +0900
juhun@juhun-930QCG:~/embedded/week5$ df .
Filesystem       1K-blocks      Used Available Use% Mounted on
/dev/nvme0n1p6 111618380 75738176  30164136  72% /
```

1)과 4)에서 줄어든 용량과 3)에서 확인한 용량이 다르다면 그 이유는?

이유 설명: 줄어든 용량과 df에서 확인한 용량 차이는 일반적으로 파일 시스템의 할당 방식에 따라 발생할 수 있으며, 파일 삭제나 생성 후에 즉시 반영되지 않을 수도 있습니다.

<cpu architecture>
13. 현재 사용하는 라즈비언 OS가 몇비트 시스템인지 확인하고 결과를 첨부하시오.

```
juhun@juhun-930QCG:~/embedded/week5$ uname -m
x86_64
juhun@juhun-930QCG:~/embedded/week5$ 
```