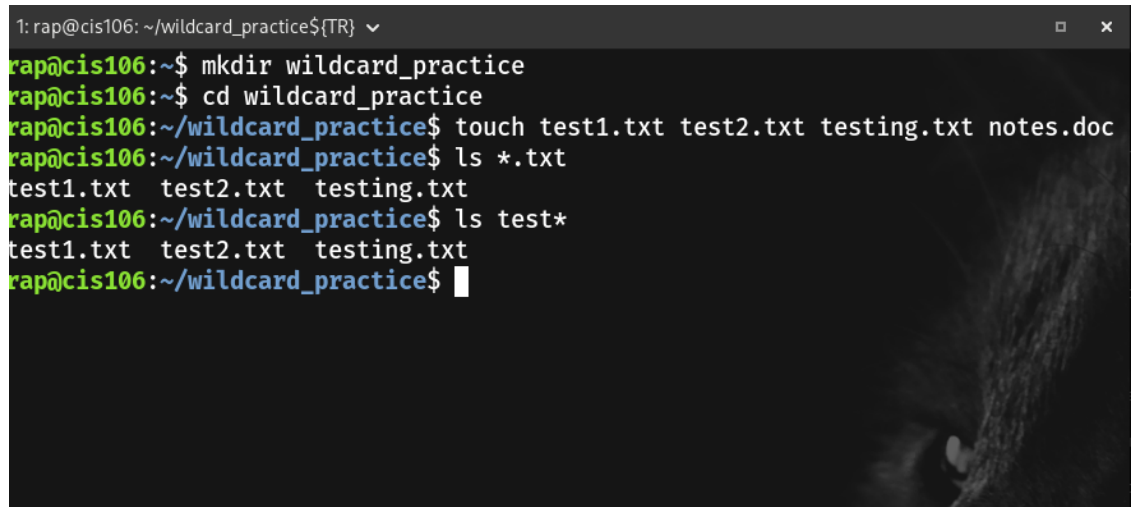


Notes 7

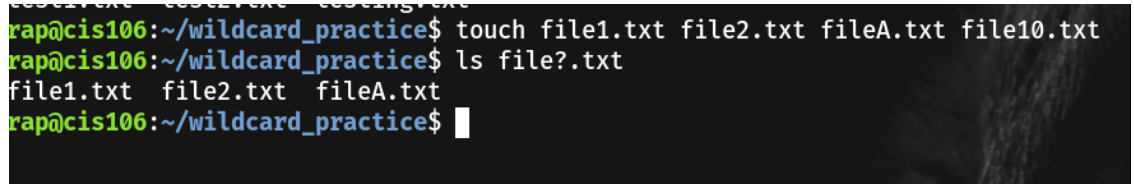
1. Wildcards

- Wildcard: * (Asterisk)
 - Definition: Matches zero or more characters. It is the most flexible wildcard.
 - Examples: `ls *.txt` → lists all files ending in .txt
 - `rm test*` → deletes any file that starts with test (ex: test1, testfile, testing.txt)
 - `cp * /backup/` → copies everything in the current directory



```
1: rap@cis106: ~/wildcard_practice$ {TR}
rap@cis106:~$ mkdir wildcard_practice
rap@cis106:~$ cd wildcard_practice
rap@cis106:~/wildcard_practice$ touch test1.txt test2.txt testing.txt notes.doc
rap@cis106:~/wildcard_practice$ ls *.txt
test1.txt test2.txt testing.txt
rap@cis106:~/wildcard_practice$ ls test*
test1.txt test2.txt testing.txt
rap@cis106:~/wildcard_practice$
```

- Wildcard: ? (Question Mark)
 - Definition: Matches exactly one character.
 - Examples:
 - `ls file?.txt` → matches file1.txt, fileA.txt, but not file10.txt
 - `mv photo?.jpg images/` → moves files like photo1.jpg, photo2.jpg
 - `cat log?.txt` → matches logs log1.txt, log2.txt, etc.



```
rap@cis106:~/wildcard_practice$ touch file1.txt file2.txt fileA.txt file10.txt
rap@cis106:~/wildcard_practice$ ls file?.txt
file1.txt file2.txt fileA.txt
rap@cis106:~/wildcard_practice$
```

- ☐ (Character Class)
 - Definition: Matches one character from a list or range.
 - Examples:
 - `ls report[123].pdf` → matches report1.pdf, report2.pdf, report3.pdf

- `rm file[a-c].txt` → deletes filea.txt, fileb.txt, filec.txt
- `cp img[0-5].png pics/` → matches images numbered 0–5

```
rap@cis106:~/wildcard_practice$ touch report1.pdf report2.pdf report3.pdf report
9.pdf
rap@cis106:~/wildcard_practice$ ls report[1-3].pdf
report1.pdf report2.pdf report3.pdf
rap@cis106:~/wildcard_practice$
```

- Wildcard: `[^]` (Negated Character Class)

- Definition: Matches one character NOT inside the brackets.

- Examples:

- `ls file[^0-9].txt` → matches fileA.txt, fileB.txt, but not file1.txt
- `rm test[^ab].log` → deletes logs not ending in a or b
- `mv doc[^s].md backup/` → moves files not ending in s

```
rap@cis106:~/wildcard_practice$ ls report[1-3].pdf
report1.pdf report2.pdf report3.pdf
rap@cis106:~/wildcard_practice$ touch fileA.log fileB.log file1.log file2.log
rap@cis106:~/wildcard_practice$ ls file[^0-9].log
fileA.log fileB.log
rap@cis106:~/wildcard_practice$
```

- Brace Expansion

- Definition:

Brace expansion generates multiple strings before a command runs. It is used to quickly create many files or directories, including full directory trees.

- Example 1: Create multiple directories
- `mkdir project/{docs,images,scripts}`

- Creates:

project/docs

project/images

project/scripts

```
rap@cis106:~/wildcard_practice$ mkdir project/{docs,images,scripts}
mkdir: cannot create directory 'project/docs': No such file or directory
mkdir: cannot create directory 'project/images': No such file or directory
mkdir: cannot create directory 'project/scripts': No such file or directory
rap@cis106:~/wildcard_practice$ ls project
ls: cannot access 'project': No such file or directory
rap@cis106:~/wildcard_practice$ ls project
ls: cannot access 'project': No such file or directory
rap@cis106:~/wildcard_practice$
```

- Example 2: Create entire folder structures `mkdir -p music/{jazz,rock,pop}/{mp3,ogg,flac}`

Creates:

```
music/ ├── jazz/ | ├── mp3 | ├── ogg | └── flac ├── rock/ | ├── mp3 | ├── ogg | └── flac └── pop/ ├── mp3 ├── ogg └── flac
```

```
rap@cis106:~/wildcard_practice$ mkdir -p music/{jazz,rock,pop}/{mp3,ogg,flac}
rap@cis106:~/wildcard_practice$ tree music
music
├── jazz
│   ├── flac
│   ├── mp3
│   └── ogg
├── pop
│   ├── flac
│   ├── mp3
│   └── ogg
└── rock
    ├── flac
    ├── mp3
    └── ogg

13 directories, 0 files
rap@cis106:~/wildcard_practice$
```

- Example 3: Create multiple files at once `touch logs/{error,debug,access}.log`
- Creates:

error.log

debug.log

access.log

```
rap@cis106:~/wildcard_practice$ touch logs/{error,debug,access}.log
touch: cannot touch 'logs/error.log': No such file or directory
touch: cannot touch 'logs/debug.log': No such file or directory
touch: cannot touch 'logs/access.log': No such file or directory
rap@cis106:~/wildcard_practice$ ls logs
ls: cannot access 'logs': No such file or directory
rap@cis106:~/wildcard_practice$
```