HW1 Report

1. 系統設定步驟

1. **建立目錄**

```
mkdir -p ~/bin ~/.trash/{files,meta} ~/.config/systemd/user
```

2. **安裝指令** 將三個腳本存入 `~/bin/`，並賦予執行權限：

```
chmod +x ~/bin/srm ~/bin/srm-restore ~/bin/srm-empty
```

3. **加入 PATH 並重新載入**

```
export PATH="$HOME/bin:$PATH"
source ~/.bashrc
```

4. **設定 systemd 計時器** 建立 `~/.config/systemd/user/srm-empty.service`：

```
[Unit]
Description=Smart Trash Can – purge old items

[Service]
Type=oneshot
ExecStart=%h/bin/srm-empty
Environment=TRASH_MAX_AGE_DAYS=7
```

建立 `~/.config/systemd/user/srm-empty.timer`：

```
[Unit]
Description=Run srm-empty daily

[Timer]
OnCalendar=*-*-* 00:00:00
Persistent=true

[Install]
WantedBy=timers.target
```

啟用與立即啟動：

```
systemctl --user daemon-reload
systemctl --user enable --now srm-empty.timer
systemctl --user list-timers srm-empty.timer
```

2. 功能示範

2.1 刪除檔案

```
$ srm ~/lab/a.txt
```

```
[classuser@vm01:~$ srm ~/lab/a.txt
Trashed: /home/classuser/lab/a.txt
```

垃圾桶內會生成：

```
[classuser@vm01:~$ ls ~/.trash/files
ls ~/.trash/meta
a.txt.2025-09-20.114943.0.tar.gz
a.txt.2025-09-20.114943.0.meta.csv
```

```
$ srm ~/lab
```

系統會提示要加上 flag：

```
[classuser@vm01:~$ srm ~/lab
srm: cannot remove /home/classuser/lab, is a directory (use -r to trash recursively)
```

```
$ srm -r ~/lab
```

```
[classuser@vm01:~$ srm -r ~/lab
Trashed: /home/classuser/lab
```

2.2 還原檔案

```
$ srm-restore
```

```
[classuser@vm01:~$ srm-restore
Index | Deleted ISO8601         |    Size | Type | Key                             | Original Path
----- | ----------------------- | ------- | ---- | ------------------------------- | -------------------------------
    0 | 2025-09-20T20:51:04+08:00 |       6 | FILE | a.txt.2025-09-20.114943.0      | /home/classuser/lab/a.txt
    1 | 2025-09-20T20:53:24+08:00 |       5 | DIR  | lab.2025-09-20.114982.0        | /home/classuser/lab
[Enter Index to restore: 1
Restored to: /home/classuser/lab
```

2.3 自動/手動清空

手動立即清空：

```
$ TRASH_MAX_AGE_DAYS=0 srm-empty
```

```
[classuser@vm01:~$ TRASH_MAX_AGE_DAYS=0 srm-empty
Purged 1 item(s) older than 0 day(s).
```

檢查 systemd 計時器：

```
$ systemctl --user list-timers srm-empty.timer
```

```
[classuser@vm01:~$ systemctl --user list-timers srm-empty.timer
NEXT                        LEFT LAST PASSED UNIT            ACTIVATES
Sun 2025-09-21 00:00:00 CST 3h 4min -        - srm-empty.timer srm-empty.service

1 timers listed.
Pass --all to see loaded but inactive timers, too.
```