

Suggested answers to Week 6 assignments

Activity 5.1, 6.1, 6.2

Activity 5.1

- Yes, the system is safe. P_1, P_3, P_4, P_2, P_0 is a safe sequence.
- Can't grant (3, 3, 0) by P_4 because of insufficient resources.
- Can't grant (0, 2, 0) by P_0 because the resulting resource allocation state isn't safe.

Activity 6.1

i-node table

| id | type | locks | ... |
|------|------|-------|-----|
| | | | |
| | | | |
| | | | |
| 1976 | | | |
| | | | |
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| | | | |
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System-wide open file table

| id | cp | status | inode |
|----|----|--------|-------|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| 86 | | | |
| | | | |
| 88 | | | 1976 |
| | | | |
| | | | |

Process C's file descriptor table

| id | fd flags | File ptr |
|----|----------|----------|
| 0 | | 88 |
| 1 | | |
| 2 | | |
| 3 | | 86 |

NB: entry number 88 in open file table can be replaced by any number not currently in use

Activity 6.2

1. **cat greet.txt** says file not found; **cat like.txt** displays the text “I love you”.
2. The symbolic link **home** is successfully created, showing that a cycle is allowed in the directory structure.
3. The **-L** option of **find** specifies whether the command should follow symbolic links. In our case, the .txt files can only be found by following the symbolic link **home**. Hence **find** with **-L** lists the .txt files, whereas **find** without **-L** doesn't.
4. **find -L** lists the .txt files and terminates without getting into any infinite loops. The command is able to cope with a cyclic directory structure.
5. Ubuntu doesn't allow hard links to directories. This restriction ensures that we can't form cycles with hard links.