

1) touch test.txt
stat test.txt
renaming → no difference / same node

mv test.txt supertest.txt
stat supertest.txt

cp supertest.txt test.txt
rm supertest.txt
stat test.txt

} copy & delete
inode change

Copying a file to a new directory } new inode
cp test.txt hw2/test.txt } same block

moved file to new directory → inode did not change

2) Symbolic - shortcut has pointer to inode that hold data
hard links stores everything create symbolic link in Hmp
to a file in directory.

- It acts as if file exists within temp.

- hard → did not work invalid cross device link

3) 4 disk operations

4) 32 bits every 10ns
each, neg = word

$$10(32) = 320$$
$$\frac{10^9}{320} = 3125000$$

5) $2 + 9 = 11\text{ms}$ Hz = cycles/sec
500x every sec

$$(11\text{ us})(500) = 5500\text{us}$$
$$= 5.5\text{ms}$$

$$5.5/1000 = .0055\%, \text{ of time spent on clk}$$

6) 3000MHz

$$\frac{3 \times 10^{12}}{1 \times 10^3} \text{ cycles/sec} = 3 \times 10^9 \text{ of a millisecond}$$

$$\frac{3 \times 10^{12}}{10^6 \times 10^6} = 30000$$