
~/Desktop/OS-Assignment/Shell (0.158s)

gcc shell.c

~/Desktop/OS-Assignment/Shell (4m 43.67s)

./a.out

myshell> pwd

/home/mohammed-yahya/Desktop/OS-Assignment/Shell

myshell> ls

a.out 'Screenshot from 2024-12-27 20-19-17.png' shell.c

myshell> echo "Hello World"

"Hello World"

myshell> echo "this is sample text" > output.txt

myshell> cat output.txt

"this is sample text"

myshell> ls > output.txt

myshell> cat output.txt

a.out

output.txt

Screenshot from 2024-12-27 20-19-17.png

shell.c

myshell> cat output.txt | grep shell

shell.c

myshell> ls | grep .txt

output.txt

myshell> exit

~/Desktop/OS-Assignment/Banker's (2m 7.10s)

./a.out

Enter number of processes: 3

Enter number of resources: 3

Enter number of available resources:

Resource 0: 4

Resource 1: 4

Resource 2: 4

Enter maximum resource claims for each process:

Process 0:

Resource 0: 2

Resource 1: 3

Resource 2: 4

Process 1:

Resource 0: 4

Resource 1: 3

Resource 2: 2

Process 2:

Resource 0: 2

Resource 1: 3

Resource 2: 4

Enter current resource allocation for each process:

Process 0:

Resource 0: 1

Resource 1: 1

Resource 2: 1

Process 1:

Resource 0: 1

Resource 1: 1

Resource 2: 1

Process 2:

Resource 0: 2

Resource 1: 2

Resource 2: 2

Checking if system is in safe state:

System is in safe state.

Safe sequence: P0 P1 P2

~/Desktop/OS-Assignment/Banker's (56.625s)

./a.out

Enter number of processes: 3

Enter number of resources: 3

Enter number of available resources:

Resource 0: 2

Resource 1: 2

Resource 2: 2

Enter maximum resource claims for each process:

Process 0:

Resource 0: 6

Resource 1: 7

Resource 2: 8

Process 1:

Resource 0: 8

Resource 1: 7

Resource 2: 6

Process 2:

Resource 0: 6

Resource 1: 7

Resource 2: 8

Enter current resource allocation for each process:

Process 0:

Resource 0: 1

Resource 1: 1

Resource 2: 0

Process 1:

Resource 0: 1

Resource 1: 0

Resource 2: 1

Process 2:

Resource 0: 0

Resource 1: 1

Resource 2: 1

Checking if system is in safe state:

System is not in safe state

Initial state is unsafe. Exiting.

~/Desktop/OS-Assignment/Hashed-Page-Table (0.084s)

gcc hashed_page.c

~/Desktop/OS-Assignment/Hashed-Page-Table (0.024s)

./a.out

Inserting pages into the hash table...

Inserted: Virtual Page 0 -> Physical Frame 0

Inserted: Virtual Page 1 -> Physical Frame 1

Inserted: Virtual Page 2 -> Physical Frame 2

Inserted: Virtual Page 3 -> Physical Frame 3

Inserted: Virtual Page 4 -> Physical Frame 4

Inserted: Virtual Page 5 -> Physical Frame 5

Inserted: Virtual Page 6 -> Physical Frame 6

Inserted: Virtual Page 7 -> Physical Frame 7

Inserted: Virtual Page 8 -> Physical Frame 8

Inserted: Virtual Page 9 -> Physical Frame 9

Inserted: Virtual Page 10 -> Physical Frame 10

Inserted: Virtual Page 11 -> Physical Frame 11

Inserted: Virtual Page 12 -> Physical Frame 12

Inserted: Virtual Page 13 -> Physical Frame 13

Inserted: Virtual Page 14 -> Physical Frame 14

Inserted: Virtual Page 15 -> Physical Frame 15

Inserted: Virtual Page 16 -> Physical Frame 0

Inserted: Virtual Page 17 -> Physical Frame 1

Inserted: Virtual Page 18 -> Physical Frame 2

Inserted: Virtual Page 19 -> Physical Frame 3

Hash Page Table Status:

```
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Index 0: (VP: 0, PF: 0) -> (VP: 16, PF: 0) -> NULL  
Index 1: (VP: 1, PF: 1) -> (VP: 17, PF: 1) -> NULL  
Index 2: (VP: 2, PF: 2) -> (VP: 18, PF: 2) -> NULL  
Index 3: (VP: 3, PF: 3) -> (VP: 19, PF: 3) -> NULL  
Index 4: (VP: 4, PF: 4) -> NULL  
Index 5: (VP: 5, PF: 5) -> NULL  
Index 6: (VP: 6, PF: 6) -> NULL  
Index 7: (VP: 7, PF: 7) -> NULL  
Index 8: (VP: 8, PF: 8) -> NULL  
Index 9: (VP: 9, PF: 9) -> NULL  
Index 10: (VP: 10, PF: 10) -> NULL  
Index 11: (VP: 11, PF: 11) -> NULL  
Index 12: (VP: 12, PF: 12) -> NULL  
Index 13: (VP: 13, PF: 13) -> NULL  
Index 14: (VP: 14, PF: 14) -> NULL  
Index 15: (VP: 15, PF: 15) -> NULL  
-----
```

Total collisions: 4

Performing page lookups:

```
Found: Virtual Page 0 -> Physical Frame 0  
Found: Virtual Page 5 -> Physical Frame 5  
Found: Virtual Page 10 -> Physical Frame 10  
Found: Virtual Page 15 -> Physical Frame 15  
Virtual Page 31 not found
```