2022-CS341-Quiz-1

Total points 40/70

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✓ ..... process is a process whose parent process has terminated, though it remains running itself 2/2

Orphan ✓

✗ Assuming a program consists of 50% non-parallelizable code, the speed-up when using 2 processors according to Amdahl's law is ···/2

20 ✗

✗ A Microkernal is more secure as more operations are done in user mode than in kernel mode 0/1

- ○ True
- ◉ False ✗

✗ Pick the odd one out 0/1

- (●) fork() ✗
- ( ) exec()
- ( ) link()
- ( ) exit()
- ( ) wait()
- ( ) Other: .....

✓ A trap can be used to call operating system routines 1/1

- (●) YES ✓
- ( ) NO

✗ All the threads in a process can not share the heap 0/1

- (●) True ✗
- ( ) False

✓ An user is able to develop a new command interpreter using the system-call interface provided by the operating system. 1/1

- (●) True ✓
- ( ) False

✓ Symmetric multiprocessing treats all processors as equals, and I/O can be processed on any CPU 1/1

- ( ) True
- (●) False ✓

✓ MULTICS is an example of 1/1

- ( ) MicroKernel OS
- ( ) Monolithic
- (●) time-sharing operating system ✓
- ( ) Hybrid OS

✓ ..... command removes a Linux kernel module 2/2

rmmod ✓

✓ A thread is usually defined as a 'light weight process' because an operating system (OS) maintains smaller data structures for a thread than for a process. In relation to this, which of the followings is correct 1/1

- (●) On per-thread basis, the OS does not maintain virtual memory state ✓
- ( ) On per-thread basis, the OS maintains only CPU register state
- ( ) The OS does not maintain a separate stack for each thread
- ( ) On per thread basis, the OS maintains only scheduling and accounting information
- ( ) Other: .....

✗ Reading memory from the heap is slower than reading from a local variable allocated on the stack. 0/2

- (●) True ✗
- ( ) False

✗ A process is represented by the PCB (Process Control Block) or PD (Process Descriptor), which does not contain 0/1

- ○ Program Counter
- ○ Processor Status Word
- ○ Stack Pointer
- ◉ Registers ✗
- ○ Memory addressing registers
- ○ Exception address
- ○ Other: .....

✗ The ..... program provides a dynamic real-time view of a running linux system ···/2

top command ✗

✗ In a multiprogramming and time-sharing environment, several users share the system simultaneously. In relation to this, which of the followings is incorrect 0/1

- ○ It can result in various security problems security problems.
- ○ Stealing or copying one's programs or data
- ◉ using system resources (CPU, memory, disk space, peripherals) without proper accounting ✗
- ○ using system interrupt without proper accounting
- ○ Other: .....

✓ Given the following pieces of code. Hello prints ..... times 2/2

```
Prog.(a)

main() {
int i=0; printf(" %d\n", i+1);
printf(" Hello\n");
fork();
fork();
fork(); }
```

1 ✓

✗ if parent process exits before child? 0/1

- ○ zombie process is created
- ○ Re-parented to process 1
- ○ Child must call wait()
- ◉ wait for child to terminate ✗
- ○ Other: .....

✓ Command interpreter not part of the kernel 1/1

- ◉ True ✓
- ○ False

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✗ .....OS often used in a dedicated application, ···/2

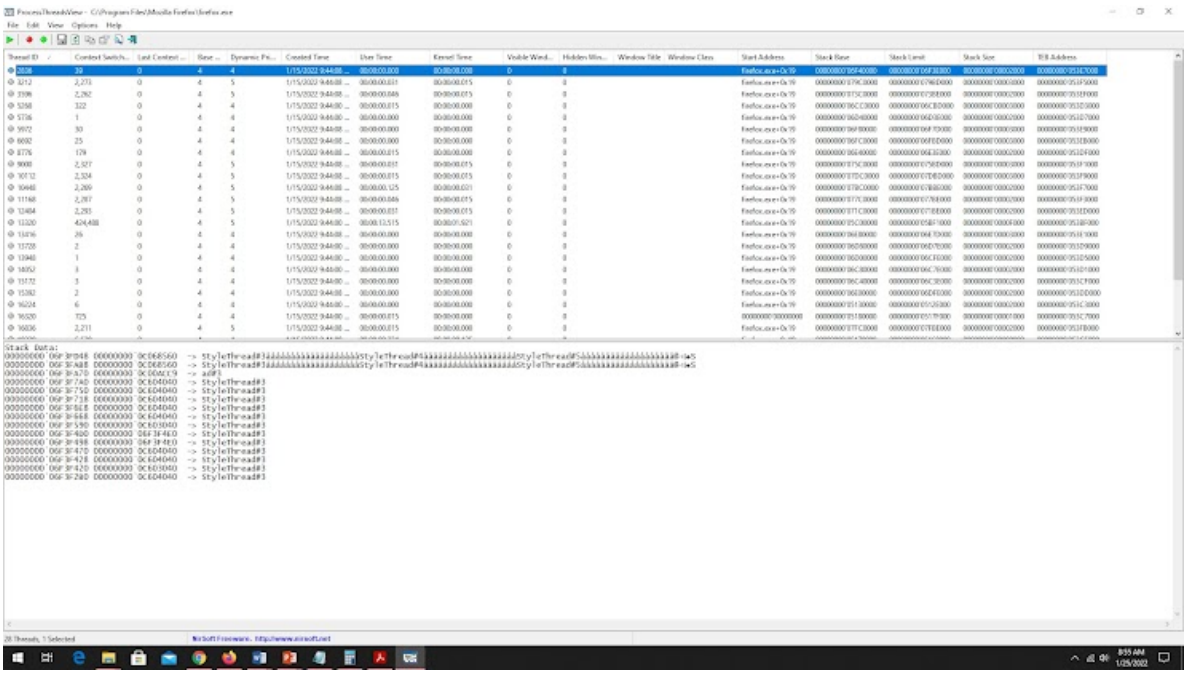
.....

✗ How many new processes are created in the below program assuming calls to fork succeeds? (including original process) ···/2

```
int main(void)
{
  for (int i = 0; i < 3; i++) {
      pid_t pid = fork();
  }
}
```

3 ✗

✗ Threads that you in your system using process thread view is (eg figure firefox threads view using process thread view) 0/2



- ○ User threads
- ○ Kernel Threads
- ◉ Both User and Kernel ✗
- ○ Some spefic threads

✓ Among following methods to pass parameters to the OS , the one do not limit the number or length of parameters being passed 1/1

- ○ registers
- ○ Parameters stored in a block, or in memory
- ○ Parameters placed, or pushed, onto the stack
- ◉ Both Block and stack methods ✓
- ○ registers and block

✗ The operating system is not responsible for the following activities in connection with process management 0/1

- ○ Creating and deleting both user and system processes
- ○ Suspending and resuming processes
- ◉ Providing mechanisms for process synchronization ✗
- ○ Providing mechanisms for process communication
- ○ Providing mechanisms for deadlock handling
- ○ Primitives to manipulate files and directories
- ○ Other: .....

✓ Assuming a program consists of 50% non-parallelizable code, the speed-up when using 2 and 4 processors according to Amdahl's law is 1/1

1.33 ✓

✓ The operating system kernel is aware of the threads in the user space 1/1

- ○ True
- ◉ False ✓

✓ Assuming a program consists of 50% non-parallelizable code, the speed-up when using 4 processors according to Amdahl's law is 2/2

1.6 ✓

✓ When a parent process dies before a child process, 2/2

- ○ zombie process is created
- ○ Not Re-parented
- ○ Child must call wait()
- ◉ orphans process is created ✓
- ○ Other:

✗ The layered kernel approach is similar modular. However,the layered kernel imposes a strict ordering of subsystems such that subsystems at the lower layers are not allowed to invoke operations corresponding to the upper-layer subsystems 0/1

- ○ True
- ◉ False ✗

✓ The modular kernel approach requires subsystems to interact with each other through carefully constructed interfaces that are typically narrow 1/1

- ◉ True ✓
- ○ False

✗ Windows NT is an example of 0/1

- ○ MicroKernel OS
- ○ Monolithic
- ○ Layered Structure
- ◉ Hybrid ✗

✓ THE-Multiprogramming system designed by 1/1

- ○ Jack Dorsey
- ○ Von Neumann
- ○ Donald Knuth
- ◉ Dijkstra ✓
- ○ Alan Turing
- ○ Other: .....

✓ In Microkernal OS adding a new service does require modifying the kernel, 1/1

- ○ True
- ◉ False ✓

✓ CMU Mach is an example of 1/1

- ◉ MicroKernel OS ✓
- ○ Monolithic
- ○ Layered OS
- ○ Hybrid OS

✓ A guest operating system provides its services by mapping them onto the functionality provided by the host operating system. 1/1

- (●) True ✓
- ( ) False

Name *

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✓ Given the following pieces of code. Hello prints ..... times 2/2

```
Prog.(c)

main() {
int i=0; printf(" %d\n", i+1);
fork();
fork();
printf(" Hello\n");
fork(); }
```

4 ✓

✓ Some computer systems do not provide a privileged mode of operation in hardware. It means that all programs be written in high-level languages so that all object code is compiler-produced. The compiler would generate (either in-line or by function calls) the protection checks that the hardware is missing. 1/1

- (●) True ✓
- ( ) False

✗ In a typical computer System which implements virtual memory the page size is (Ans: X k ···/2

8 ✗

✓ Exec() may not replace the running process including all threads 1/1

- ( ) True
- (●) False ✓

✗ A child process that dies but is never waited on by its parent becomes a ..... process ···/2

orphan ✗

✓ Context switching can be performed only by software 1/1

- ○ True
- ◉ False ✓

✓ Registers pass starting addresses of blocks of parameters 1/1

- ◉ True ✓
- ○ False

✓ Some computer systems do not provide a privileged mode of operation in hardware. Software interpretation of all user programs (like some BASIC,Java, and LISP systems, for example). The software interpreter would provide, in software, what the hardware does not provide. 1/1

- ◉ True ✓
- ○ False

✗ Given the following pieces of code. Hello prints ..... times ···/2

```
Prog.(b)

main() {
fork();
fork();
fork();
int i=0; printf(" %d\n", i+1);
printf(" Hello\n"); }
```

4 ✗

✓ command interpreter allows an user to create and manage processes 1/1

- (●) True ✓
- ( ) False

✓ Clustered systems communicate using messages, while processors in a multiprocessor system could not communicate using shared memory. 2/2

- ( ) True
- (●) False ✓

✗ Asymmetric multiprocessing has one master CPU and the remainder CPUs are slaves 0/1

- ○ True
- ◉ False ✗

✓ A trap is a software-generated interrupt 1/1

- ◉ YES ✓
- ○ NO

✗ Linux is an example of 0/1

- ◉ MicroKernel OS ✗
- ○ Monolithic
- ○ Layered OS
- ○ Hybrid OS

✓ X86 processor store the return value is always in ..... register when a function is finished 2/2

eax ✓

✓ A process that is not under the direct control of the user 1/1

- ○ zombie process
- ○ Not Re-parented process
- ◉ daemon process ✓
- ○ orphans process
- ○ Other: .....

✗ In a multiprocessor system,different processors might be caching the same memory location in its local caches. When updates are made, the other cached locations need not be invalidated or updated. 0/1

- ◉ True ✗
- ○ False

✓ Master Boot Record (MBR) is ..... bytes 2/2

512 ✓