

Quiz Answers
CS-330 Unix and Network Programming

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Contents

1	Quiz 6: Awk	2
2	Quiz 7: Sed	3
3	Quiz 9: Systems Programming	4
4	Quiz 10	5
5	Quiz 11	6
6	Quiz 12: Networking	7

Quiz 6: Awk

- Which function in awk is used to divide a string into pieces separated by the field separator and store the pieces in an array ?
 - split
- What is the meaning of the \$0 variable in awk ?
 - it holds the entire record
- awk reads input lines automatically
 - true
- Variables in awk are initialized how ?
 - to 0 or "" depending on context when first used
- Every awk program must use the BEGIN and END patterns.
 - false
- Which command line option allows to specify an awk program in a file ?
 - -f
- awk allows strings as array index.
 - true
- awk can use which character as field separator ?
 - any character
- In awk, strings printed with the "%20s" printf directive will always be left justified.
 - false
- What is the string concatenation operator in awk ?
 - the space character

Quiz 7: Sed

- In sed, the "i" command adds lines before the address
 - True
- In sed, when using a range address, the lines specified need not be consecutive.
 - False
- In sed, the dollar sign (\$) can be used as a single line address. What is its meaning?
 - the last line of input
- If the exclamation mark "!" is used after an sed address, then it will only search for obsolete lines.
 - False
- Which character is used to delimit the search and replacement components of the sed "s" command?
 - any, as long as all 3 are the same
- If sed is invoked as "sed -n" then it sorts its input numerically.
 - False
- The sed editor can be called from a shell script
 - True
- Which of the following utilities can be used to systematically process files?
 - all of the above
- Which of the following is NOT a valid address type for sed?
 - sublet address
- If no address is specified for the sed command then the command is applied to every input line.
 - true

Quiz 9: Systems Programming

- The C library function perror translate an error code into an understandable error message.
 - True
- In C++, C strings are handled the same way as instances of the standard string class.
 - False
- C++ can call functions from the standard C library.
 - true
- In C++ what is the correct include to use the strlen or strcpy library functions ?
 - include <cstring>
- The C regular expression library uses 2 functions: regcomp and regexexec. Which statement is true about these functions?
 - regexexec runs the search that was prepared by regcomp
- For the strcpy C library function, the size of the destination array must be long enough to contain the source string including the terminating null character.
 - true
- A C++ program cannot access environment variables.
 - false
- C library function exit terminates a process and allows to set the return status. A status of 0 indicates failure.
 - false
- The C structure dirent does not contain the file name.
 - false
- Which C library functions enable directory I/O ?
 - opendir, readdir

When it lands on the spring it has the same energy as above $\frac{1}{2}mv_i^2 = 79J$. That will all go into spring potential energy

$$79J = \frac{1}{2}kl^2$$
$$\implies x = 0.4m.$$

Quiz 10

- A system call is linked to an executable and becomes logically part of the executable.
 - False
- C++ uses which of the following to identify a file in low-level IO using system calls ?
 - File descriptor number
- The read and write system calls use C++ strings to handle its data.
 - False
- open, close, create, read and write are system calls to achieve low-level I/O.
 - False
- Which of the following is not a valid flag to for the open system call ?
 - O_READ
- Which of to following is a system call that can be used to create a file ?
 - Open
- A system call uses a special C++ syntax for invocation.
 - False
- Which system call is used to remove a file ?
 - unlink
- The dup system call is used to claim standard I/O from inside a program.
 - True
- System calls typically set the errno variable and return -1 if they encounter and error.
 - True

Quiz 11

1. Match the following exec functions to their description:
 - execl, execlp – specify arguments as list. **Answer: Option 1**
 - execv, execvp – specify arguments as array of strings. **Answer: Option 2**
 - execlp, execvp – look for new executable via PATH. **Answer: Option 0**
2. Unix processes can communicate via Unix pipes.
 - True
3. Which of the following is not a potential return value from the fork system call?
 - 1, to indicate that 1 child process was created. **Answer: This is not a potential return value**
4. The pipe system call creates a bidirectional data channel.
 - False
5. A process is a program in execution.
 - True
6. Which system call creates a new process?
 - fork
7. How long does the wait system call wait?
 - until a child process terminates
8. System calls pipe, dup, and fork are used together to implement the "|" pipe character used by the command interpreter on the command line.
 - True
9. The fork system call duplicates the current process. The 2 processes (old and newly created) are exactly the same.
 - False
10. A Unix pipe is represented in C++ as an array of _____ file descriptors.
 - 2

Quiz 12: Networking

- OSI in the OSI reference model stands for:
 - Open systems interconnection
- OSI in the OSI reference model stands for:
 - dns
- getaddrinfo is a Unix system call ?
 - False
- Both IPv4 and IPv6 addresses are 32 bit long.
 - False
- Which of the following is not a technology used in the physical layer of the OSI model ?
 - Tcp
- Match the port number to the service that is usually provided on it.
 - 22: SSH
 - 25: SMTP
 - 80: HTTP
 - 53: DNS
- In the OSI reference model complexities of communication are organized into successive layers of protocols: lower-level layers are more specific to medium, higher-level layers are more specific to application. Match the layer name to its functionality:
 - Transport layer: Provides functions to guarantee reliable network link
 - Network link: Establishes, maintains, and terminates network connections
 - Data link: Ensures the reliability of link
 - Physical layer: Controls transmission of the raw bit stream over the medium
- A protocol describes the syntax, semantics, and synchronization of communication
 - true
- Which layer in the OSI model provides addressing via an IP address ?
 - Network layer
- A
describesthesyntax,semantics,andsynchronizationofcommunication
 - Protocol