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<center>Coding Assessment</center>

Linux

What does ls -alt do?

Ls -alt is a command line instruction which displays the contents of a directory in certain formats

-a: This command shows all the individual and hidden files in the directory. This option is useful for seeing the files that are usually not shown when running the ls command

-l: This command shows the files in a list format and provides a lot of information about the files and the directory the files are in. This command allows you to see permissions, ownership and size of the files in the directory.

-t: This command is useful because it sorts the files by when they were edited last. This is where you can see the most recent edits on a file because the most recent files that were edited are displayed first

What command would you use to list all files starting with 'Run' and ending with '.txt' in a directory and all of its subdirectories?

A command that would be used to list all files with Run and ending in .txt would be:

find . -name "Run*.txt"

This command can be used because the find command searches for all the files with the criteria that follows the command. The '.' and -name are used to return to the original directory and specify the criteria that the operating system is searching for. The text that follows is used as a search query tool, so any file that starts with Run and ends with.txt will be found using the command above.

How would you append the contents of 'exampleFile1.txt' to 'exampleFile2.txt'?

A command that would be useful for appending the contents of one file to another would be cat. The following command would concatenate the contents of exampleFile1.txt to exampleFile2.txt:

cat exampleFile1.txt >> exampleFile2.txt

How would you (1) sort the contents of 'exampleFile1' and (2) redirect the sorted content to 'exampleFile2.txt' in one line using the pipe operator?

A command that sorts the contents of one file and redirects the content to another file is "sort". This could be done simply by the following command:

Sort exampleFile1.txt > exampleFile2.txt

Which commands would you use to find files whose name match a certain pattern, and to find files containing a certain text?

In order to find files whose name matches a certain pattern, you can use the find command with -name. This is the most simple way to find a file using commands. To find files containing a certain text, you can use the grep command. This command is very useful because you can combine it with the -r command as follows to search recursively in the directories for the certain text you are looking for: grep -r "text" .

SQL

Original SQL Statement
SELECT UserId, AVG(Total) AS AvgOrderTotal, COUNT(OrderId) as OrderCount
FROM Invoices
GROUP BY UserId
HAVING OrderCount >= 1;

The main issue with this SQL statement is the HAVING clause. This is because HAVING is used to filter results of an aggregate query but it doesn't work with the individual values that are being aggregated. In order to fix this statement, you can replace the HAVING clause with a WHERE clause, which will calculate the average for every user and return the data once there is at least one order placed. The new SQL statement that would take its place would be as follows:

Correct SQL Statement

SELECT UserId, AVG(Total) AS AvgOrderTotal

FROM Invoices

WHERE COUNT(OrderId) >= 1