

**Question 1: Explain this following bash script:**

```
#!/bin/bash space_free=$( df -h | awk '{ print $5 }' | sort -n | tail -n 1 |
sed 's/%//' ) case $space_free in
[1-5]*) echo Plenty of disk space
    available
;;
[6-7]*) echo There could be a problem in the near
    future
;;
8*) echo Maybe we should look at clearing out old
    files
;;
9*) echo We could have a serious problem on our hands
    soon
;;
*) echo Something is not quite right
    here
;;
esac
```

**Solution:** This script is a simple bash script that checks the amount of free disk space on the system and prints a message based on the percentage of free space.

'df' command is used to display information about the file system's disk space usage

'|' symbol pipes the output to the next command

'awk '{ print \$5 }'' to extract the 5th column, which is the percentage of used space.

'sort -n' The output is then passed to sort the output numerically

'tail -n1' is used to get the last (highest) value.

'sed' command is used to remove the percentage sign from the output.

The resulting value is stored in the space\_free variable.

Next, the script uses a case statement to check the value of space\_free and print a message based on the range of values.

For example, if the value is between 1 and 5 (inclusive), it will print "Plenty of disk space available". If the value is between 6 and 7 (inclusive), it will print "There could be a problem in the near future". If the value is 8, it will print "Maybe we should look at clearing out old files", and so on. The \* in the case statements is a wildcard that matches any value. The ; ; at the end of each case indicates the end of the case statement. Finally, the esac keyword indicates the end of the case statement.

