Python basics assignments-22

1. The result of the code will be an error because the variable X is not defined within the function **func**.
2. The result of the code will be "iNeuron". This is because the assignment to **X** within the function **func** creates a new local variable **X**, but this variable is not used outside of the function and has no effect on the global variable **X**.
3. The code will print "NI" and then "iNeuron". This is because the function **func** creates a new local variable **X** which shadows the global variable **X**, and then prints the value of this local variable. The global variable **X** is not modified and is printed after the function call.
4. The code will print "NI". This is because the **global** keyword is used to indicate that the **X** within the function refers to the global variable **X**, and the assignment to **X** within the function modifies the global variable.
5. The code will print "NI" and then the value of **X** will be "iNeuron". This is because the function **func** creates a new local variable **X** which is only used within the nested function **nested**, and has no effect on the global variable **X**.
6. The code will print "Spam". This is because the **nonlocal** keyword is used to indicate that the **X** within the nested function **nested** refers to the nearest enclosing variable **X** defined in the outer function **func**, and the assignment to **X** within the nested function modifies this variable. The modified value of **X** is then printed by the **print** statement in the outer function.