Python Basic- Assignment- 11

1. Create an assert statement that throws an AssertionError if the variable spam is a negative integer.

Answer:

```
# assert <condition>,<error message>
a = int(input("Enter a value that can not be negative: "))
assert a >= 0, "Spam must be a positive integer"
```

2. Write an assert statement that triggers an AssertionError if the variables eggs and bacon contain strings that are the same as each other, even if their cases are different (that is, 'hello' and 'hello' are considered the same, and 'goodbye' and 'GOODbye' are also considered the same).

Answer:

```
bacon = input()
eggs = input()
assert eggs.lower() != bacon.lower(), "eggs and bacon are the same"
```

3. Create an assert statement that throws an AssertionError every time.

Answer:

```
a = input()
assert False, 'This is an AssertionError'
```

4. What are the two lines that must be present in your software in order to call logging.debug()?

Answer:

The two lines of code that must be present in your software in order to call logging.debug() are:

```
import logging
logging.basicConfig(level=logging.DEBUG)
```

5. What are the two lines that your program must have in order to have logging.debug() send a logging message to a file named programLog.txt?

Answer:

```
import logging
logging.basicConfig(filename='programLog.txt', level=logging.DEBUG)
```


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6. What are the five levels of logging?

Answer:

A. Debug: This is the lowest level of logging. It is used for recording detailed information about the program execution, such as variable values and function calls.
B. Info: This is the default level of logging. It is used for recording general information about the program execution.
C. Warning: This level of logging is used for recording potential issues that may cause problems, such as incorrect user input or a missing file.
D. Error: This level of logging is used for recording errors that have occurred, such as exceptions and other program issues.
E. Critical: This is the highest level of logging. It is used for recording critical errors that can cause the program to crash or stop running.

7. What line of code would you add to your software to disable all logging messages?

Answer:

logging.disable(logging.CRITICAL)

8.Why is using logging messages better than using print() to display the same message?

Answer:

Logging messages provide more information than print() statements. Logging messages are typically timestamped, including the source file and line number, and can be set to different levels (e.g. DEBUG, INFO, WARNING, ERROR). This makes it easier to debug, monitor, and analyze application behavior, as well as track errors. Additionally, logging messages can be configured to be written to a file, making them easier to review than print() statements, which are printed to the console.

9. What are the differences between the Step Over, Step In, and Step Out buttons in the debugger?

Answer:

Step Over: This will execute the current line of code and then move to the next line.

Step In: This will execute the current line of code and then move to the first line of code inside any function or method called by the current line.

Step Out: This will execute the remainder of the current function or method and then move to the next line after the function or method call.

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10.After you click Continue, when will the debugger stop ?

Answer:

The debugger will stop when it reaches a breakpoint, or when the execution of the code is finished.

11. What is the concept of a breakpoint?

Answer:

A breakpoint is a specific point in a program's execution where the program is paused and inspected for debugging purposes. It is used to locate errors in the program's code, observe how the program is behaving, and to step through code line-by-line. Breakpoints are set by the programmer and can be used to pause the program at any line of code.

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