**CS 101, LAB 2: ASSIGNMENTS AND STRINGS**

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**Table 1**

|  |  |  |  |
| --- | --- | --- | --- |
| Statement or | Expected | Calculated | Reason for |
| Expression | Value | Value | Calculated Value |
|  |  |  |  |
| i = 6 | None | None | Assigning of values |
|  |  |  |  |
| i | 6 | 6 | I was assigned value 6 |
|  |  |  |  |
| j | Error | Error | J was not defined |
|  |  |  |  |
| j = 1 |  |  | j was assigned value 1 |
|  | 1 | 1 |  |
| j+4 |  |  | 4 was added to j |
|  | 5 | 5 |  |
| j = j + i |  | None | J was incremented by 1 |
|  | None |  |  |
| j |  |  |  |
|  | 2 | 2 | No change was made |
| i |  |  |  |
|  | 6 | 6 | No change was made |
| w = 'Hello' |  |  | Assigning of values |
|  | None | None |  |
| i + w | Error | Error | Cant concatenate string and int |
|  |  |  |  |

**Table 2**

|  |  |  |  |
| --- | --- | --- | --- |
| Expression | Expected Value | Calculated Value | Reason for Calculated Value |
| 'Truth ' + 'is ' + ‘always’ + 'best' | ‘Truthisalwaysbest’ | ‘Truthisalwaysbest’ | Concatenation of strings |
| "Truth " + "is " + "best" | ‘Truthisbest’ | ‘Truthisbest’ | Concatenation of strings |
| "Truth " + ('is ' + "best") | ‘Truthisbest’ | ‘Truthisbest’ | Concatenation of strings |
| 'A double quote: "' | 'A double quote: "' | 'A double quote: "' | String inside single quote |
| "A single quote: '" | “A single quote: “’ | “A single quote: “’ | String inside double quotes |
| 'A single quote: '' | Error | Error | String needs to be inside single quotes |
| '’ + 'lol' | ‘lol’ | ‘lol’ | Concatenation of strings |
| '' + '4 / 2' | ‘4/2’ | ‘4/2’ | Concatenation of strings |
| '' + 4 / 2 | Error | Error | Cant concatenate string and float |
| '' + str(4 / 2) | ‘2’ | ‘2.0’ | Explicit Conversion |

**Table 3**

|  |  |  |  |
| --- | --- | --- | --- |
| Expression | Expected | Calculated | Reason for |
| Value | Value | Calculated Value |
|  |
|  |  |  |  |
| min(25, 6) | 6 | 6 | Smaller Number |
|  |  |  |  |
| max(27, 4) | 27 | 27 | Greater Number |
|  |  |  |  |
| min(25, max(28, 4)) | 25 | 25 | Smaller than 28 |
|  |  |  |  |
| abs(26) | 26 | 26 | Already Positive |
|  |  |  |  |
| abs(-26) | 26 | 26 | Was negative |
|  |  |  |  |
| round(23.6) | 24 | 24 | Nearest integer |
|  |  |  |  |
| round(-23.6) | -24 | -24 | Nearest integer |
|  |  |  |  |
| round(23.64, 0) | 24 | 24 | Rounding to 0 decimal place |
|  |  |  |  |
| round(23.64, 1) | 23.6 | 23.6 | Rounding to first decimal place |
|  |  |  |  |
| round(23.64, 2) | 23.64 | 23.64 | Rounding to second decimal place |
|  |  |  |  |
| len('Truth') | 5 | 5 | 5 letters long |
|  |  |  |  |

**Table 4**

|  |  |  |  |
| --- | --- | --- | --- |
| Expression | Expected | Calculated | Reason for |
| Value | Value | Calculated Value |
|  |
|  |  |  |  |
| math.sqrt(16) | 4.0 | 4.0 | Square root |
|  |  |  |  |
| math.sqrt(-16) | Error | Error | Negative square root don’t exist |
|  |  |  |  |
| math.floor(6.7) |  | 6 | Round to lower integer |
|  | 6 |  |  |
| math.ceil(6.7) | 7 | 7 | Round to higher integer |
|  |  |  |  |
| math.ceil(-6.7) | -6 | -6 | Round to higher integer |
|  |  |  |  |
| math.copysign(2,-6.7) | -2 | -2 | Copying sign |
|  |  |  |  |
| math.trunc(6.7) | 6 | 6 | Truncate decimal value |
|  |  |  |  |
| math.trunc(-6.7) | -6 | -6 | Truncate decimal value |
|  |  |  |  |
| math.pi | 3.14 | 3.141592… | Value of pi |
|  |  |  |  |
| math.cos(math.pi) | -1 | -1 | cosine of pi |
|  |  |  |  |

In addition to the above expressions, type the following code into the Python interactive shell:

math.pi = 3

math.pi

What happens and why?

ANS – We get error because we have inserted no operator between the two operands

**Table 5**

s = 'Hello World!'

Once you have done that, use the string stored in s to fill out the table, just as before.

|  |  |  |  |
| --- | --- | --- | --- |
| Expression | Expected | Calculated | Reason for |
| Value | Value | Calculated Value |
|  |
|  |  |  |  |
| s[1] | ‘e’ | ‘e’ | Second character |
|  |  |  |  |
| s[15] | Error | Error | Out of range |
|  |  |  |  |
| s[1:5] | ‘ello’ | ello | Second to sixth characters |
|  |  |  |  |
| s[:5] | ‘Hello’ | ‘Hello’ | First to sixth characters |
|  |  |  |  |
| s[5:] | ‘ World!’ | ‘ World!’ | Sixth to last characters |
|  |  |  |  |
| 'H' in s | True | True | H is present in s |
|  |  |  |  |
| 'x' in s | False | False | X is not present in s |
|  |  |  |  |
| s.index('w') | Error | Error | w is not present |
|  |  |  |  |
| s.index('x') | Error | Error | x is not present |
|  |  |  |  |
| s.index('l', 5) | 9 | 9 | L is present on the 9th position |
|  |  |  |  |
| s.find('e') | 1 | 1 | e is on the first position |
|  |  |  |  |
| s.find('x') | Error | -1 | X is not present |
|  |  |  |  |

Let q1 is a variable assigned as in the below given statement.

q1 = 'The phrase, "Don\'t panic!" is frequently uttered by consultants.'

You could also write a string like this using double quotes as the delimiters. Rewrite the assignment statement for q1 above using a double-quoted string literal:

q1 = “The phrase,/”Don\'t panic/” is frequently uttered by consultants”'

For your last exercise, we want you to write Python code to extract the substring inside the double quotes (which is "Don't panic!"). But we want to do it in a way that is independent of q1. That means, even if you change the contents of q1, your answer should still work, provided that q1 still has a pair of double-quote characters somewhere.

In the box below, write a sequence of one or more assignment statements, ending with an assignment to a variable called inner (the other variables can be named whatever you want). The assignment statements should use string slicing to remove the unwanted parts of q1. When you are done, the contents of inner should be the substring inside the double-quote characters (but not including the double quotes themselves).

Inner = s[s.index(‘”’)+1: s.index(‘”’, s.index(‘”’)+1)]

print (inner)

To test that your statements are correct, do the following. First, type in q1 = 'The phrase, "Don\'t panic!" is frequently uttered by consultants.' Then type in your statements from the box above. Finally, print the value of inner. You should see Don't panic, without the quotes (printing always removes the quotes from a string value). Now, try the process again with q1 = 'The question "Can you help me?" is often asked in consulting hours.' Type in the assignment statement above, then type in your statements from the box, and finally print the value of inner. You should see Can you help me?, without the quotes. If you had to modify your answer in the box for the second q1, you have done it incorrectly.