Worksheet: Reassignment; Input

COSC 101, 2018-01-29

1) Warm-up
What is the output of this program?

```python
year = 2018
month = "January"
day = "29"
print(type(year))
print(type(month))
print(type(day))
print(str(year))
print(int(day))
print(month, day, year)
```

2) Reassignment
For each program: (1) indicate what it will output, and (2) draw a reference diagram depicting the state of each variable after the program has executed.

a. fruit = "apple"
   vegetable = "beet"
   fruit = "cranberry"
   print(fruit, vegetable)

b. x = 'ab'
   y = 123
   x = x + 'c'
   print(x, y)

c. r = 1
   s = 2
   r = r + s
   s = r
   print(r, s)

d. first = "Computer"
   second = "Science"
   third = first + second
   first = 101
   third = third + str(first)
   print(first, second, first)
   print(third)
3) Input
Evaluate the following programs. If input is needed, provide your own. Indicate what output is produced, if any. If an error occurs, specify what type of error.
   a. place = input("Where are you from? ")
      print("I have heard", place, "is a fun place to visit.")

   b. name = input("What is your name? ")
      count = len(name)
      print("There are " + str(count) + " letters in your name.")

   c. year = input("What year is it? ")
      year = year + 1
      print("Next year is", year)

   d. print("Knock, knock")
      who = input("Who's there? ")
      print(who + " who?")
      input(""
      print("Ha ha ha!")

4) Programming practice
   a. Write a program that asks for the length and width of a rectangle and prints the area.
   b. Write a program that asks for the cost of an item and prints the tax amount and total cost with a tax rate of 8%.
   c. Write a program that plays a short game of mad libs: ask for three words and fill them in a sentence. (E.g., She verb the adjective noun.)
   d. Write a program that asks for a temperature in fahrenheit and outputs the temperature in degrees celsius. (To convert: subtract 32 and multiply by five-ninths)
   e. Write a program that asks for four integers and prints the average.