Worksheet: Using class & objects

COSC 101, 2018-04-18

1) Warm-up
   Problem 3 from Monday

2) Writing classes
   Problem 4 from Monday

3) Special functions
   Write an __str__ function for the Cylinder class.

4) Objects as arguments and return values
   Assume you are given the following class definition:
   class Pizza:
       def __init__(self, style, size):
           self.style = style
           self.size = size
           self.toppings = []

       def add_topping(self, topping):
           self.toppings.append(topping)

       def larger(self):
           p = Pizza(self.style, self.size + 4)
           for topping in self.toppings:
               p.add_topping(topping)
           return p

       def __str__(self):
           description = str(self.size) + '" ' + str(self.style) + ' pizza ' + ', '.join(self.toppings) + ' with ' + '.'
           return description

What is the output of each of the following programs?
   a) first = Pizza('Chicago', 8)
      second = Pizza('New York', 14)
      first.add_topping('sausage')
      second.add_topping('pepperoni')
      print(first)
      print(second)
b) mine = Pizza('Chicago', 10)
   mine.add_toppings(['black olives', 'mushrooms'])
   print(mine)

c) def add_veggies(p):
    for v in ['green pepper', 'tomato', 'onion']:
        p.add_topping(v)

small = Pizza('Neapolitan', 8)
large = Pizza('Neapolitan', 16)
add_veggies(small)
print(small)
print(large)

d) def overlap(p1, p2):
    for topping in p1.toppings:
        if topping in p2.toppings:
            return True
    return False

one = Pizza('New York', 10)
one.add_topping('pepperoni')
one.add_topping('green pepper')
two = Pizza('Chicago', 10)
two.add_topping('green pepper')
three = Pizza('Neapolitan', 10)
three.add_topping('onion')
print(overlap(one, two))
print(overlap(one, three))

e) personal = Pizza('New York', 8)
   personal.add_topping('mushrooms')
group = personal.larger()
personal.add_topping('hot peppers')
print(personal)
print(group)