BIS 420 PROGRAMMING FOR DATA SCIENCE

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CHAPTER 6 EXERCISE 6.4

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Draw a stack diagram for the following program. What does the program print?

```
def b(z):
prod = a(z, z)
print z, prod
return prod
def a(x, y):
x = x + 1
return x * y6.11. Exercises 61
def c(x, y, z):
total = x + y + z
square = b(total)**2
return square
x = 1
y = x + 1
print c(x, y+3, x+y)
```

Stack Diagram:

Global frame:

- x -> 1
- y -> 2
- c -> function c(x, y, z)

b -> function b(z)

a -> function a(x, y)

c frame:

x -> 1

y -> 5

z -> 3

total -> 9

square -> 8100

b frame:

z -> 9

prod -> 90

a frame:

x -> 10

y -> 9

Code:

```
def b(z):
    prod = a(z, z)
    print(z, prod)
    return prod
def a(x, y):
    x = x + 1
    return x * y
def c(x, y, z):
    total = x + y + z
    square = b(total)**2
    return square
```

x = 1

y = x + 1

print(c(x, y+3, x+y))