Computing for Engineers – ENGG 233

Lab 6

Efran Aghaeekiasarae

Jaxon Braun

L01

Orange

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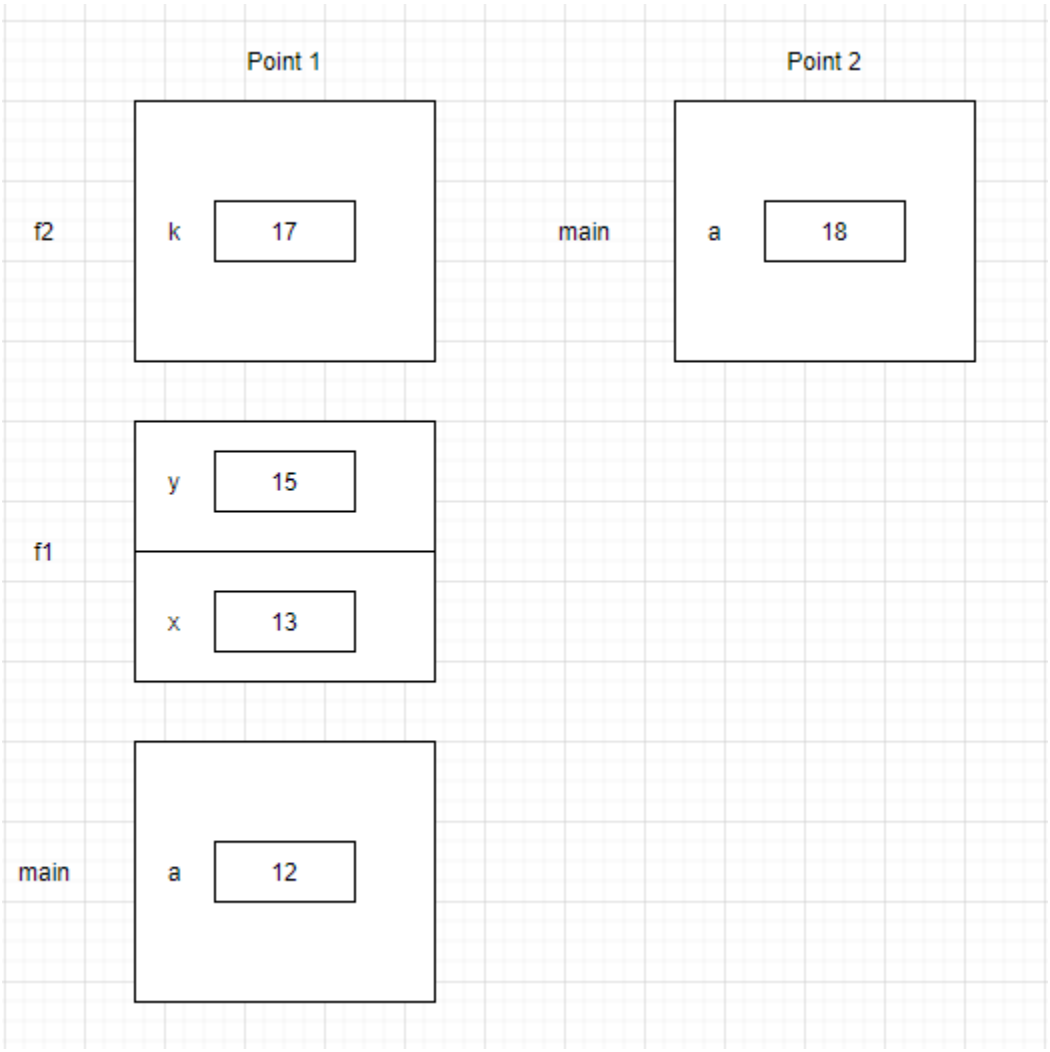
Exercise 1: Memory Diagram



Exercise 2: Output Trace

Expected Program Output:

A B C D E F G H I

A B C D E F G H

A B C D E F G

A B C D E F

A B C D E

A B C D

A B C

A B

A

Exercise 3: Function Implementation

1)

```
def is_leap_year(year_in):
    if ((year_in % 4 == 0) and not(year_in % 100 == 0)) or (year_in % 400 == 0):
        return True
    else:
        return False
```

2)

```
def not_vowel(letter_in):
    x = ord(letter_in)
    if (x == 65) or (x == 97) or (x == 69) or (x == 101) or (x == 73) or (x == 105) or (x == 79) or (x == 111) or (x == 85) or (x == 117):
        return False
    else:
        return True
```

3)

```
def printPrice((float(price_in), str(name_in):
    print(name_in, end = ": ")
    print("$", end = "")
    print(price_in)
```

4)

```
def sizeOf(string_in):
    return len(string_in)
```

Exercise 4: All Uppercase String

```
def All_uppercase(s_in):
    i = 0
    s_in = list(s_in)
    for char in s_in:
        if ord(char) >= 97 and ord(char) <= 122:
            char = chr(ord(char) - 32)
            s_in[i] = char
            i +=1
        else:
            i += 1
    s_cap = ""
    return s_cap.join(s_in)
```

```
Please enter a string: I am Happy to See You.
I AM HAPPY TO SEE YOU.
```

Exercise 6: Variable Scope

	a	**b**	**c**	**d**
Point 1	10	18	2	n/a
Point 2	31	3	n/a	n/a
Point 3	10	n/a	13	3
Point 4	10	18	2	34