PYTHON AND CONTROL

CS 61A

June 23nd, 2021

Intro to Python

```
1. What Would Python Display?
  >>> 3
  >>> "cs61a"
  >>> x = 3
  >>> x
  >>> x = print("cs61a")
  cs61a
  >>> x
  >>> print(print(print("cs61a")))
  >>> def f1(x):
  \dots return x + 1
  >>> f1(3)
  >>> f1(2) + f1(2 + 3)
  >>> def f2(y):
  ... return y / 0
  >>> f2(4)
  >>> def f3(x, y):
  ... if x > y:
                  return \mathbf{x}
  . . .
         elif x == y:
  . . .
                   return x + y
  . . .
        else:
  . . .
                   return y
  . . .
```

```
>>> f3(1, 2)
>>> f3(5, 5)
>>> 1 or 2 or 3
>>> 1 or 0 or 3
>>> 4 and (2 or 1/0)
>>> 0 or (not 1 and 3)
>>> (2 or 1/0) and (False or (True and (0 or 1)))
```

2. For the following expressions, list the order of evaluation of the operators and operands of the expression. Finally also write what the expression evaluates to.

```
Example: add(3, mul(4, 5))
Order of Evaluation: add, 3, mul, 4, 5
Evaluation: 23
(a) add(1, mul(2, 3))
(b) add(mul(2, 3), add(1, 4))
(c) max(mul(1, 2), add(5, 6), 3, mul(mul(3, 4), 1), 7)
```

1. Write a function that returns true if a number is divisible by 4 and false otherwise.

2. Write a function, is_leap_year, that returns true if a number is a leap year and false otherwise. A *leap year* is a year that is divisible by 4 but not divisible by 400.

3. Write a function find_max that will take in 3 numbers, x, y, z, and return the max value. Assume that x, y, and z are unique. Do not use Python's built-in max function.
def find_max(x, y, z):