Python 2

Functions

```
def tuff():
    print("KYS")
for i in range(10):
    tuff()

def bro(name, age):
    print(f"Hello {name}! You're {age} years old!")
bro("Nigger", 23)

def display_invoice(username, amount, due_date):
    print(f"Hello {username}! Your invoice amount is {amount}.")
    print(f"Your invoice date is {due_date}.")


display_invoice("Joe", 23, "21/07/25")

#Return
def add(a, b):
    c = a + b
    return c
def subtract(a, b):
    c = a - b
    return c
def multiply(a, b):
    c = a * b
    return c
def divide(a, b):
    c = a / b
    return c

print(add(2, 4), "\n", subtract(2, 4), "\n", multiply(2, 4), "\n", divide(2, 4))
```

```
def create_name(first_name, last_name):
    first_name = first_name.lower()
    last_name = last_name.lower()
    first_name = first_name.capitalize()
    last_name = last_name.capitalize()
    return f"{first_name} {last_name}"
full_name = create_name("JOE", "SMITH")
print(full_name)
```

Default Arguments

```
def net_price(list_price, discount = 0.0, tax = 0.04):
    return list_price * (1 - discount) * (1 + tax)
print(net_price(100))
print(net_price(100, 0.5, 0.03))

import time

def count(end, start = 0):
    for x in range(start, end + 1):
        print(x)
        time.sleep(1)
    print("Done!")

count(6)
```

Keyword Arguments

```
def hello(greeting, title, first, last):
    print(f"{greeting} {title}{first} {last}")
hello("Hello! Welcome back","Mr.", "Ryan", "Gosling!")
print("1","2","3","4","5","6","7","8","9", sep="*NIGGER*")
```

*args, **kwargs

```
def add(*args):
    total = 0
    for arg in args:
        total += arg
    return total

def display_name(*names):
    for name in names:
        print(name, end="-")
display_name("A", "B", "C", "D", "E", "F",)
print()

def adress(**kwargs):
    for key, value in kwargs.items():
        print(f"{key}: {value}")

adress(continental="Asia", Country="Russia",City="Stalingrad", Street="Mo
scow St.", ZipCode="12345")
def shipping_label(*args, **kwargs):
    for arg in args:
        print(arg, end=" ") #Dr. Ryan Gosling II
    print()

    if "apt" in kwargs:
        print(kwargs["apt"],",",kwargs["street"]) #100 , Fake St.
    else:
        print(kwargs["street"])
    print(kwargs.get('continental')) #None


shipping_label("Dr.","Ryan", "Gosling", "II",
               street="Fake St.",
               apt="100",
               city="Las Vegas",
               zip="12345",
               country="United States")
```

Iterables

```
numbers = [1, 2, 3, 4, 5]

for number in numbers:
    print(number, end=' ') #1 2 3 4 5
print()
for number in reversed(numbers):
    print(number, end=' ') #5 4 3 2 1
print()
numbers = (1, 2, 3, 4, 5)
for number in numbers:
    print(number, end=' ') #1 2 3 4 5
print()
for number in reversed(numbers):
    print(number, end=' ') #5 4 3 2 1
print()
fruits = {'apple', 'banana', 'orange'} #Set is not reversible.
for fruit in fruits:
    print(fruit, end=' ') #orange apple banana
print()
name = "Ryan Gosling"
for character in name:
    print(character, end=' ')
print()
my_dictionary = {"A": 1, "B": 2, "C": 3}
for key, value in my_dictionary.items():
    print(key, value, end='/') #A 1/B 2/C 3/
```

Membership Operators

```
word = "apple"
letter = input("Guess a letter in the secret word: ")
if letter.lower() in word:
    print("Yep!")
else:
```

```
    print("Nope!")

students = {"Alex", "Youssef", "Jose"}
student = input("Enter the name of a student: ")
student.lower()
if student.capitalize() in students:
    print(f"You found one ({student.capitalize()})!")
else:
    print(f"Sorry, {student.capitalize()} is not one of our student.")

grades = {"Sandy":"A","Squidward":"B","Spongebob":"C","Patrick":"Dumb
ass nigga"}
student = input("Enter student name: ")
if student in grades:
    print(f"{student}'s grade is {grades[student]}")
else:
    print(f"{student}'s grade is not available")

email = "ryangoslin@gmail.com"
if "@gmail.com" in email:
    print("Email is valid")
else:
    print("Email is invalid")
```

List Comprehension

```
doubles = []
for x in range(1,11):
    doubles.append(x*2)
print(doubles) [2, 4, 6, 8, 10, 12, 14, 16, 18, 20]

doubles2 = [x*2 for x in range(1,11)]#expression for x in iterable if condition
print(doubles2) #[2, 4, 6, 8, 10, 12, 14, 16, 18, 20]
triples = [x*3 for x in range(1,11)]
print(triples)#[3, 6, 9, 12, 15, 18, 21, 24, 27, 30]
squares = [x*x for x in range(1,11)]
print(squares)#[1, 4, 9, 16, 25, 36, 49, 64, 81, 100]
```

```
fruits = ['apple', 'banana', 'orange']
fruits = [fruit.upper() for fruit in fruits]
print(fruits)#['APPLE', 'BANANA', 'ORANGE']
numbers = [1,-2,3,-4,5,6,-7]
negative_nums = [num for num in numbers if num < 0]
positive_nums = [num for num in numbers if num >= 0]
even_nums = [num for num in numbers if num%2 == 0]
odd_nums = [num for num in numbers if num % 2 != 0]
print(negative_nums)
print(positive_nums)
print(even_nums)
print(odd_nums)

grades = [63,78,89,37,90,100,93,48]
passing_grades = [grade for grade in grades if grade >= 60 ]
print(passing_grades)
```

Match-case statements

```
def day_of_week(day):
    match day:
        case 1:
            return "Monday"
        case 2:
            return "Tuesday"
        case 3:
            return "Wednesday"
        case 4:
            return "Thursday"
        case 5:
            return "Friday"
        case 6:
            return "Saturday"
        case 7:
            return "Sunday"
        case _:
            return "Invalid input"
```

```
print(day_of_week(1))

def is_weekend(day):
    match day:
        case "Saturday" | "Sunday":
            return True
        case "Monday" | "Tuesday" | "Wednesday" | "Thursday" | "Friday":
            return False
        case _:
            return False
print(is_weekend("Friday"))
```

Module

```
import math as m
print(m.pi) #3.141592653589793
from math import pi
print(pi) #3.141592653589793
from math import e
print(e) #2.718281828459045
e = 6
print(e) #6
print(m.e) #2.718281828459045

import example_1
print(example_1.pi)
print(example_1.square(3))
print(example_1.cube(4))
print(example_1.circumference(5))
print(example_1.area(6))

#example_1
pi = 3.14159

def square(x):
    return x ** 2
```

```
def cube(x):
    return x ** 3

def circumference(radius):
    return 2 * pi * radius

def area(radius):
    return pi * radius ** 2
```

Scope Resolution

```
#Scope Resolution
#Local-Enclosed-Global-Built-in

#def func1():
#    a = 1 #Local
#    print(a)

#def func2():
#    b = 2 #Local
#    print(b)

#def func1():
#    a = 1 #Enclosed
#    def func2():
#        a = 2 #Local
#        print(a)
#    func2()

#x = 2 #Global
#def func1():
#    print(x)

#def func2():
#    print(x)
```

```
#from math import e #Built-in
#print(e)
```

if **name** == “__main__”

```
#script_1
print(__name__)

def f_food(food):
    print(food)

def main():
    print("This is script_1")
    f_food("apple")
    print("Goodbye")

if __name__ == "__main__":
    main()

#script_2
    from script_1 import *
def favourite_drink(drink):
    print(f"Your favourite drink is {drink}.")
print("This is script_2")
f_food("apple")
favourite_drink("water")
print("Goodbye")
```