

# Python 102 Programming Class: Lesson 1

## 1. Review

### Input function

Use *input* function to get information from user

Ex: `name = input("What is your name")`

### Input function with Integer function

Use *integer* function to get or change input to integer

Ex: `number = int(input("What is your favorite number?"))`

### Print function

Print function is used to make computer print information to screen.

Ex: `print("Python is my favorite class in the world!!")`

### Import function with random

Import allows use of libraries and other programs that are outside of your program

Ex: `import random`

### Strings and Variables

String is similar to text and is indicated by using ' ' or " "

Variable represent more than the text; it hold other information.

Ex String: "Hello World"

Ex Name Variable: `name = input("What do people call you?")`

### If Statements, For Loops & While

If statement limits the code to specific circumstance.

Ex: `if name == 'Randy':`

`Print("He is the greatest!")`

'For loop' is used to capture certain sequences.

Ex: for i in range (1,10):

```
    print (i)
```

'While' is used to perform an action in only certain circumstances.

Ex: while answer != 20:

```
    answer = input("Sorry, try again!")
```

### **Defining Functions:**

Custom functions can be created by defining them.

Ex: def You\_Won\_Lottery(ticket\_number):

```
    if ticket_number == 1009876:
```

```
        print("Congrats! You just one $1.00")
```

```
    else:
```

```
        print("Sorry! But thanks for playing.")
```

## 2. Function Parameters

We learned that in Python, we can define our own functions:

```
def cool_teach (teacher, rank, school ):
    """Displays Teacher Name and Popularity Rank."""
    print(teacher + " is ranked number " + rank + "at " + school + ".")
```

Python has a lot of built in flexibility into the parameter functionality. For example, we can change the order of the parameters by defining each of the data points.

```
cool_teach(school = "NYA", rank = "2", teacher = "Jay Panchal")
```

We can also add a default parameter, which means if the function does not receive specific data for a parameter it will use this one instead.

```
def cool_teach(teacher = "Mrs. Jones", rank = "unknown", school = "NYA")
```

In this case, if the user didn't know the rank of the teacher, 'unknown' would be printed out. If the user didn't submit data for a parameter, an error would result. Why? If a function has a defined number of parameters, it needs all the parameters in order to work.

A little more about parameter syntax...we can also specify the parameters in a function. This helps make the code a little more clear.

```
cool_teach(teacher = "Randy", rank = "1", school = "NYA")
```

## 2. Practice 1: Psychic Reading Function

Overview: Create a game that tells the future; specifically in what city the user will live and what the user's profession will be...*make the jobs 'unusual' so the readings will be more entertaining.*

1. Create 2 lists, one of cities and one of professions.  
Hint: cities = ["Paris", "London", .....]  
Hint: professions = ["locksmith", "butcher", "grave digger", ...]
2. Create the fortune\_city function. It should have the parameter lucky\_num.  
Add a default as well.  
Hint: def fortune\_city( lucky\_num = 2):
  - a. In the fortune\_city function, create a place variable equal to the index of the lucky number from the cities list you created in Step 1.  
Hint: place = cities[lucky\_num]
  - b. return the place  
Hint: return place
  - c. This is how the code should look:

```
def fortune_city(lucky_num = 2):  
    place = cities[lucky_num - 1]  
    return place
```
3. Create a fortune\_job function. A job variable should be determined by using random.choice selected from the profession list.  
Hint: def fortune\_job()
  - a. Import random at the top of your code!
  - b. Set variable 'job' equal to the random choice select from the professions list.
  - c. return job
  - d. This is how the code should look:

```
def fortune_job():  
    job = random.choice(professions)  
    return job
```
4. Create a print\_fortune function with 3 parameters: name, place, and job.  
Hint: def print\_fortune(name, place, job):
  - a. Welcome the user to the name of the psychic the user selected.
  - b. Tell the user's future location and future job.

- c. This is how the code should look:

```
def print_fortune( name, place, job):  
    print("Welcome to ", name, "'s Psychic Reading.")  
    print("According to my crystal ball you will live in ", place, " and  
        be a", job , ".")
```

[Now that you've created all the function, you'll write the code for the main body of the Fortune module.]

5. Ask the user for the name of the psychic with whom the user wishes to consult.

Hint: use the input function and set the function equal to psychic.

- a. This is how the code should look:

```
psychic = input("From which insanely powerful psychic would you  
    like a reading?")
```

6. Ask the user to select a number between 1 and one less the length of your cities list. Set the variable equal to num.

Hint: Use the input function and the integer function and set the function equal to num.

- a. This is how the code should look:

```
num = int(input("Choose a number between 1 and 7."))
```

7. Call the fortune\_city function and set it equal to x.

- a. Set the parameter lucky\_num = num

Hint: x = fortune\_city(lucky\_num = num)

8. Call the fortune\_job function. Set it equal to y.

- a. Hint: y = fortune\_job( )

9. Call the print\_fortune function. Set the name parameter equal to the psychic's name, place = x and job = y.

- a. This is how the code should look.

```
print_fortune(name = psychic, place = x, job = y)
```

## Challenge

Create functionality that tells the user in how many years the user will have a special event such as wedding, funeral, promotion, graduation, birth of child, election etc..

1. Create `def event_year( year_born ) :`
  - a. Set variable `randAddition = random.randint( 5, 25)`
  - b. Set `ran_year = (2014 – year_born) – randAddition`
  - c. `return ran_year`
  - d. code should look like this:
    - i. `def event_year (year_born) :`  
`randAddition = random.randint( 5, 25 )`  
`ran_year = (2014 – year_born) – randAddition`  
`return ran_year`
2. Create function `event_list[ ]`

Hint: create list of `event[ ]` and pick randomly using `random.choice`.

`return event`

  - a. `events = [ ' fall of a cliff', 'funeral', 'divorce again', ...]`
3. Create `event_generator` function
  - a. `def event_generator ( ):`  
`event = random. choice (events)`  
`return event`
4. using input function and ask user's age:
  - a. Hint: `birth = int(input("What year were you born?") )`
5. Set `z = result of event_year` function
  - a. Hint: `z = event_year(birth)`
6. Set `e = result of event_generator`
  - a. Hint: `e = event_generator( )`
7. Modify `print_fortune` function above to add event and year that will happen for the user.
  - a. Hint: using print function, incorporate the event and the year that the event will happen.  
Code should look like this:

```
def print_fortune ( name, place, job, ran_year, event) :  
    print("Welcome to ", name, "'s Psychic Reading.")  
    print("According to my crystal ball you will live in ", place, "  
    and be a", job , ".")  
    print ("Be very aware that in " + str( ran_year) + "years, you  
    will have a " + event + ".")
```

8. Call print\_fortune. Code should look like this:

```
print_fortune fortune ( name = psychic, place = x , job = y , ran_year =  
z, event = e)
```