**Activity 1: Fizz Buzz**

#### Problem Statement:

Write a code in python in which you can get “Fizz Buzz” for all numbers which can be divided by (3, 5, 15). The range should from (1 to 100).

#### Question

#### Which operator you will use in order to execute this code?

**Answer-**

for i in range(1,101):

if i % 15==0:

print('FizzBuzz')

elif i % 3==0:

print('Fizz')

elif i % 5==0:

print('Buzz')

else:

print(i)

##### Activity 2: Swap Cases

#### Problem Statement:

How to swap all uppercase characters to lowercase and vice versa?

#### Questions:

#### - How the user will enter the character?

How it will swap?

Which commands will be used to convert each other?

**Answer-**

#How to swap all uppercase characters to lowercase and vice versa?

def swap\_case(swap):

string = ''

for char in swap:

if char.islower():

string += char.upper()

else:

string += char.lower()

return string

if \_\_name\_\_=='\_\_main\_\_':

swap=input('Enter string: ')

result=swap\_case(swap)

print('Swapped string: '+result)

##### Activity 3: Swap Numbers

#### Problem Statement:

Swap the numbers with and without the 3rd Variable.

#### Questions:

* - How you will create and store the value in 3rd variable?
* - How you will do it without the 3rd Variable?

**Answer-**

#Swap number using third variable.

x=int(input('Enter number 1: '))

y=int(input('Enter number 2: '))

temp=x

x=y

y=temp

print('After swapping \nNumber 1: ',x)

print('Number 2: ', y)

#Swap number without using third variable.

x=int(input('Enter number 1: '))

y=int(input('Enter number 2: '))

x,y=y,x

print('After swapping \nNumber 1: ',x)

print('Number 2: ', y)

##### Activity 4: Fibonacci Series

#### Problem Statement:

Write a code in python which will give you a Fibonacci series to a number when you enter it.

#### Questions:

* - How you will you deal when a user inputs ‘0’?
* - How the user will deal when a user inputs ‘1’?
* - Which loops and statements do you use for the iterations?

**Answer-**

while True:

n = int(input("Enter the length of the Fibonacci series: "))

# define the first two numbers in the series

a, b = 0, 1

count=0

while True:

# check if the lenth is valid

if n<=0:

print("Enter positive integer!!!")

# if there is only 1, return "a"

elif n==1:

print("Fibonnaci series upto ",n,":",a)

#loop to generate the series up to n

else:

print("Fibonacci sequence:")

while count < n:

print(a)

nth = a + b

# update values

a = b

b = nth

count += 1

break

**Activity 5: Number Guessing Game**

#### Problem Statement:

Create a game in which user guesses a random number in python.

#### Questions:

* - How will generate random number and how will you set the range?
* - How to add attempts in your code, that user can have only 5 attempts to play?
* - How will you subtract a attempt when user plays it one time?
* - How will you show the ‘YOU WON!’ and ‘YOU LOST’ message?

**Answer-**

#Number guessing game

import random

number = random.randint(0, 100)

print('Number: ',number)

trials = 5

message = 'You Lost!'

while trials > 0:

print(f'{trials} attempt left.')

trials -= 1

user\_input = int(input('Enter Number: '))

if user\_input == number:

message = 'You Won!'

break

else:

print('Try again!')

continue

print(message)

##### Activity 6: Basic Calculator

#### Problem Statement:

Create a Basic Calculator that can do Addition, Subtraction, Multiplication and Division in Python.

#### Questions:

* - How to create Choices for the user?
* - How the user input two numbers?
* - How can you add your define functions inside your If-else statements?
* - How do stop the calculations at a certain part?
* - How do you cope with this when a user will type a invalid input?

**Answer-**

def add(x, y):

return x + y

def subtract(x, y):

return x - y

def multiply(x, y):

return x \* y

def divide(x, y):

return x / y

print("SELECT OPERATION")

print("1.Add")

print("2.Subtract")

print("3.Multiply")

print("4.Divide")

while True:

choice = input("ENTER CHOICE: ")

if choice in ('1', '2', '3', '4'):

try:

num1 = float(input("Enter first number: "))

num2 = float(input("Enter second number: "))

except ValueError:

print("INVALID INPUT. \n Please enter a number between 1-4: ")

continue

if choice == '1':

print(num1, "+", num2, "=", add(num1, num2))

elif choice == '2':

print(num1, "-", num2, "=", subtract(num1, num2))

elif choice == '3':

print(num1, "\*", num2, "=", multiply(num1, num2))

elif choice == '4':

print(num1, "/", num2, "=", divide(num1, num2))

New\_calculation = input("Do you want to do any other calculation (yes/no): ")

if New\_calculation == "no":

break

else:

print("Invalid Input")