**PYTHON BASIC PRACTICE CODES -I**

1. Python Program to Find the Square Root.

# To take the input from the user

num = float(input('Enter a number: '))

num\_sqrt = num \*\* 0.5

print('The square root of %0.3f is %0.3f'%(num ,num\_sqrt))

2. Python Program to Add Two Numbers.

Example 1: Add Two Numbers

num1 = 1.5

num2 = 6.3

# Add two numbers

sum = num1 + num2

# Display the sum

print('The sum of {0} and {1} is {2}'.format(num1, num2, sum))

3.Python Program to Calculate the Area of a Triangle

a = float(input('Enter first side: '))

b = float(input('Enter second side: '))

c = float(input('Enter third side: '))

# calculate the semi-perimeter

s = (a + b + c) / 2

# calculate the area

area = (s\*(s-a)\*(s-b)\*(s-c)) \*\* 0.5

print('The area of the triangle is %0.2f' %area)

4. Python Program to Swap Two Variables

# To take inputs from the user

x = input('Enter value of x: ')

y = input('Enter value of y: ')

# create a temporary variable and swap the values

temp = x

x = y

y = temp

print('The value of x after swapping: {}'.format(x))

print('The value of y after swapping: {}'.format(y))

5. Python Program to Convert Kilometers to Miles

# Taking kilometers input from the user

kilometers = float(input("Enter value in kilometers: "))

# conversion factor

conv\_fac = 0.621371

# calculate miles

miles = kilometers \* conv\_fac

print('%0.2f kilometers is equal to %0.2f miles' %(kilometers,miles))

6.Python Program to Convert Celsius To Fahrenheit

# Python Program to convert temperature in celsius to fahrenheit

# change this value for a different result

celsius = 37.5

# calculate fahrenheit

fahrenheit = (celsius \* 1.8) + 32

print('%0.1f degree Celsius is equal to %0.1f degree Fahrenheit' %(celsius,fahrenheit))

Run Code

LIST

1. Python program to interchange first and last elements in a list.

newList = []

element = int(input("enter the number of elements you want in list"))

for i in range(0,element):

list\_element = input("Enter value here: ")

newList.append(list\_element)

newList[0],newList[-1] = newList[-1], newList[0]

print(newList)

2: Concatenate two lists index-wise

list1 = ["M", "na", "i", "Ke"]

list2 = ["y", "me", "s", "lly"]

Expected output: ['My', 'name', 'is', 'Kelly']

list1 = ["M", "na", "i", "Ke"]

list2 = ["y", "me", "s", "lly"]

list3 = [i + j for i, j in zip(list1, list2)]

print(list3)

3: Given a Python list. Turn every item of a list into its square

aList = [1, 2, 3, 4, 5, 6, 7]

aList = [1, 2, 3, 4, 5, 6, 7]

aList = [x \* x for x in aList]

print(aList)

4: Concatenate two lists in the following order

list1 = ["Hello ", "take "]

list2 = ["Dear", "Sir"]

Expected output: ['Hello Dear', 'Hello Sir', 'take Dear', 'take Sir']

resList = [x+y for x in list1 for y in list2]

print(resList)

6: Remove empty strings from the list of strings

list1 = ["Mike", "", "Emma", "Kelly", "", "Brad"]

Expected output: ["Mike", "Emma", "Kelly", "Brad"]

resList = list(filter(None, list1))

print(resList)

Dict

1: Below are the two lists convert it into the dictionary

keys = ['Ten', 'Twenty', 'Thirty']

values = [10, 20, 30]

Expected output: {'Ten': 10, 'Twenty': 20, 'Thirty': 30}

sampleDict = dict(zip(keys, values))

print(sampleDict)

2. Merge following two Python dictionaries into one

dict1 = {'Ten': 10, 'Twenty': 20, 'Thirty': 30}

dict2 = {'Thirty': 30, 'Fourty': 40, 'Fifty': 50}

Expected output: {'Ten': 10, 'Twenty': 20, 'Thirty': 30, 'Fourty': 40, 'Fifty': 50}

dict3 = {\*\*dict1, \*\*dict2}

print(dict3)

3. Create a new dictionary by extracting the following keys from a given dictionary

Given dictionary:

sampleDict = { "name": "Kelly", "age":25, "salary": 8000, "city": "New york"}

Keys to extract = ["name", "salary"]

newDict = {k: sampleDict[k] for k in keys}

print(newDict)

4. Check if a value 200 exists in a dictionary

sampleDict = {'a': 100, 'b': 200, 'c': 300}

print(200 in sampleDict.values())

5. Rename key city to location in the following dictionary

sampleDict = { "name": "Kelly", "age":25, "salary": 8000, "city": "New york"}

Expected output:{ "name": "Kelly", "age":25, "salary": 8000, "location": "New york"}

sampleDict['location'] = sampleDict.pop('city')

print(sampleDict)

6. Get the key corresponding to the minimum value from the following dictionary

sampleDict = { 'Physics': 82, 'Math': 65, 'history': 75}

print(min(sampleDict, key=sampleDict.get))

**LOOPS**

1. Python program to print only the odd numbers in given range.

num1 = int(input("Enter the smaller value"))

num2 = int(input("Enter the larger value"))

for i in range(num1, num2):

if i%2 == 0:

continue

else:

print(i, end = ", ")

2. Write a python program that prints all the values which are odd and less than 500 from given list of numbers.

numbers = [

951, 402, 984, 651, 360, 69, 408, 319, 601, 485, 980, 507, 725, 547, 544,

615, 83, 165, 141, 501, 263, 617, 865, 575, 219, 390, 984, 592, 236, 105, 942, 941,

386, 462, 47, 418, 907, 344, 236, 375, 823, 566, 597, 978, 328, 615, 953, 345,

399, 162, 758, 219, 918, 237, 412, 566, 826, 248, 866, 950, 626, 949, 687, 217,

815, 67, 104, 58, 512, 24, 892, 894, 767, 553, 81, 379, 843, 831, 445, 742, 717,

958, 609, 842, 451, 688, 753, 854, 685, 93, 857, 440, 380, 126, 721, 328, 753, 470,

743, 527

]

for i in numbers:

if i > 500 or i % 2 == 0:

continue

else:

print(i, end = ", ")

3. Find all the numbers from given list which are factor of both 3, 7 .

for i in numbers:

if i % 3 == 0 and i % 7 == 0:

print(i, end = ", ")

4. FInd the largest number from the given list.

max = 0

for i in numbers:

if i > max:

max = i

5. print the squares of odd numbers and cube roots of even number from the list above.

for i in numbers:

if i % 2 == 0:

print("Cube :", i\*\*3, end = ", ")

else:

print("Square :",i\*\*2, end = ", ")

6. Print First 10 natural numbers using while loop

i = 0

while i <= 10:

print(i)

i += 1

7. Print the following pattern

1

1 2

1 2 3

1 2 3 4

1 2 3 4 5

print("Second Number Pattern ")

lastNumber = 6

for row in range(1, lastNumber):

for column in range(1, row + 1):

print(column, end=' ')

print("")

8. Python Program to find factorial of number.

num = int(input("Enter a number: "))

factorial = 1

# check if the number is negative, positive or zero

if num < 0:

print("Sorry, factorial does not exist for negative numbers")

elif num == 0:

print("The factorial of 0 is 1")

else:

for i in range(1,num + 1):

factorial = factorial\*i

print("The factorial of",num,"is",factorial)

**IF –ELSE CONSTRUCTS**

1. Python Program to Check if a Number is Odd or Even?

num = int(input("Enter a number: "))

if (num % 2) == 0:

print("{0} is Even".format(num))

else:

print("{0} is Odd".format(num))

2. Python Program to Check if a Number is Positive, Negative or 0?

num = float(input("Enter a number: "))

if num > 0:

print("Positive number")

elif num == 0:

print("Zero")

else:

print("Negative number")

3.Python Program to Check Leap Year?

year = int(input("Enter a year: "))

if (year % 4) == 0:

if (year % 100) == 0:

if (year % 400) == 0:

print("{0} is a leap year".format(year))

else:

print("{0} is not a leap year".format(year))

else:

print("{0} is a leap year".format(year))

else:

print("{0} is not a leap year".format(year))

4. Python Program to Find the Largest Among Three Numbers

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

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

num3 = float(input("Enter third number: "))

if (num1 >= num2) and (num1 >= num3):

largest = num1

elif (num2 >= num1) and (num2 >= num3):

largest = num2

else:

largest = num3

print("The largest number is", largest)

1. Python Program to Check if a person can vote or not?

num = int(input("Enter your age: "))

if age > 170:

print("You can vote")

else:

print("You can not vote")

**FUNCTIONS**

1. Python Program to Find Numbers Divisible by Another Number

def divisiblity():

x = int(input("Enter first number: "))

y = int(input("Enter Second number: "))

z = int(input("Enter the number you want to check: "))

if x%z == 0 and y %z == 0:

print(f"{x},{y} are divisible by {z}")

else:

print(f"{x},{y} are not divisible by {z}")

divisiblity()

2. Python program to check if a given number is prime or not.

def prime(num):

# prime numbers are greater than 1

if num > 1:

# check for factors

for i in range(2,num):

if (num % i) == 0:

print(num,"is not a prime number")

print(i,"times",num//i,"is",num)

break

else:

print(num,"is a prime number")

# if input number is less than

# or equal to 1, it is not prime

else:

print(num,"is not a prime number")

3. Write a python function to find factorial of number.

def Factorial():

num = int(input("Enter a number: "))

factorial = 1

# check if the number is negative, positive or zero

if num < 0:

print("Sorry, factorial does not exist for negative numbers")

elif num == 0:

print("The factorial of 0 is 1")

else:

for i in range(1,num + 1):

factorial = factorial\*i

print("The factorial of",num,"is",factorial)

4. Python Program to Find HCF

def compute\_hcf(x, y):

if x > y:

smaller = y

else:

smaller = x

for i in range(1, smaller+1):

if((x % i == 0) and (y % i == 0)):

hcf = i

return hcf

5.Python Program to Find LCM

def compute\_lcm(x, y):

if x > y:

greater = x

else:

greater = y

while(True):

if((greater % x == 0) and (greater % y == 0)):

lcm = greater

break

greater += 1

return lcm

6. Write a function func1() such that it can accept a variable length of argument and print all arguments value

func1(20, 40, 60)

func1(80, 100)

def func1(\*args):

for i in args:

print(i)

7. Create an inner function to calculate the addition in the following way

Create an outer function that will accept two parameters a and b

Create an inner function inside an outer function that will calculate the addition of a and b

At last, an outer function will add 5 into addition and return it

def outerFun(a, b):

square = a\*\*2

def innerFun(a,b):

return a+b

add = innerFun(a, b)

return add+5

result = outerFun(5, 10)

print(result)

8. Return the largest item from the given list

aList = [4, 6, 8, 24, 12, 2]

print(max(aList))