## JADAVPUR UNIVERSITY

Advanced programming (JAVA and python) LAB ASSIGNMENTS

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## Class: MCA 1st year 2nd sem

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## Java ASSIGNMENT 1:

1. **Write a program to accept two short integers from user and display the sum.**

**SOURCE CODE:**

import java.util.Scanner;

public class ass1\_01 {

    public static void main(String args[]) {

        short num1, num2;

        int sum;

        Scanner sc = new Scanner(System.in);

        System.out.println("Enter First number: ");

        num1 = sc.nextShort();

        System.out.println("Enter Second number: ");

        num2 = sc.nextShort();

        sc.close();

        sum = num1 + num2;

        System.out.println("Sum of these numbers: " + sum);

    }

}

## output:

PS C:\Users\Shruti Pathak\Documents\MCA 2ND SEM\JAVA\ASS1> javac ass1\_01.java

PS C:\Users\Shruti Pathak\Documents\MCA 2ND SEM\JAVA\ASS1> java ass1\_01

Enter First number:

10

Enter Second number:

20

Sum of these numbers: 30

1. **Write a program that accepts number of command line parameters and displays the parameters and count of such parameters.**

**SOURCE CODE:**

public class ass1\_02 {

    public static void main(String args[]) {

        if (args.length == 0)

            System.out.println("No argument passed!!!");

        else {

            System.out.println("The number of command line argument: " + args.length);

            System.out.println("The command line parameters: ");

            for (int i = 0; i < args.length; i++) {

                System.out.println(args[i]);

            }

        }

    }

}

## output:

PS C:\Users\Shruti Pathak\Documents\MCA 2ND SEM\JAVA\ASS1> javac ass1\_02.java

PS C:\Users\Shruti Pathak\Documents\MCA 2ND SEM\JAVA\ASS1> java ass1\_02

No argument passed!!!

PS C:\Users\Shruti Pathak\Documents\MCA 2ND SEM\JAVA\ASS1> javac ass1\_02.java

PS C:\Users\Shruti Pathak\Documents\MCA 2ND SEM\JAVA\ASS1> java ass1\_02 A B C

The number of command line argument: 3

The command line parameters:

A

B

C

## Write a program that accepts height in cm as int and displays the height in feet and inches. Assume, 1 inch equals to 2.54 cm and 1 foot equals to 30.5 cm.

**SOURCE CODE:**

import java.util.Scanner;

public class ass1\_03 {

    public static void main(String args[]) {

        int cm;

        double inch,foot;

        Scanner sc=new Scanner(System.in);

        System.out.println("Enter height in cm: ");

        cm=sc.nextInt();

        inch=cm/2.54;

        foot=cm/30.5;

        sc.close();

        System.out.println("The height in inch: "+inch);

        System.out.println("The height in foot: "+foot);

    }

}

## output:

PS C:\Users\Shruti Pathak\Documents\MCA 2ND SEM\JAVA\ASS1> javac ass1\_03.java

PS C:\Users\Shruti Pathak\Documents\MCA 2ND SEM\JAVA\ASS1> java ass1\_03

Enter height in cm:

20

The height in inch: 7.874015748031496

The height in foot: 0.6557377049180327

## Write a program that accepts radius of a circle and displays area of the circle. Declare a constant pi equals to 3.14.

**SOURCE CODE:**

import java.util.Scanner;

public class ass1\_04 {

    public static void main(String args[]) {

        final double pi=3.14;

        double r,area;

        Scanner sc=new Scanner(System.in);

        System.out.println("Enter radius of the circle: ");

        r=sc.nextDouble();

        area=pi\*r\*r;

        sc.close();

        System.out.println("Area of the circle is: "+area);

    }

}

## output:

PS C:\Users\Shruti Pathak\Documents\MCA 2ND SEM\JAVA\ASS1> javac ass1\_04.java

PS C:\Users\Shruti Pathak\Documents\MCA 2ND SEM\JAVA\ASS1> java ass1\_04

Enter radius of the circle:

5

Area of the circle is: 78.5

## Write a program that accepts a String and assigns it to another. Check the outcome of comparison with == and equals() method. Take two Strings and put same input for them. Repeat the equality checking. Observe the outcome.

**SOURCE CODE:**

import java.util.Scanner;

public class ass1\_05 {

    public static void main(String args[]) {

        String s1,s2;

        Scanner sc=new Scanner(System.in);

        System.out.println("Enter a string: ");

        s1=sc.nextLine();

        s2=s1;

        System.out.println(s1==s2); //true

        System.out.println(s1.equals(s2)); //true

        System.out.println("Enter first string: ");

        s1=sc.nextLine();

        System.out.println("Enter second string(same as first): ");

        s2=sc.nextLine();

        System.out.println(s1==s2); //false because it compares the address of the strings

        System.out.println(s1.equals(s2)); //true because it compares the content

        sc.close();

    }

}

## output:

PS C:\Users\Shruti Pathak\Documents\MCA 2ND SEM\JAVA\ASS1> javac ass1\_05.java

PS C:\Users\Shruti Pathak\Documents\MCA 2ND SEM\JAVA\ASS1> java ass1\_05

Enter a string:

shruti

true

true

Enter first string:

abc

Enter second string(same as first):

abc

false

true

PS C:\Users\Shruti Pathak\Documents\MCA 2ND SEM\JAVA\ASS1> java ass1\_05

Enter a string:

mno

true

true

Enter first string:

xyz

Enter second string(same as first):

stu

false

false

## Write a program where class contains void show(int) to display the argument passed. Call the function once with short as actual parameter and again double as actual parameter. Add another function as void show(double). Repeat the calls. Observe the outcomes in each case.

**SOURCE CODE:**

import java.util.Scanner;

public class ass1\_06 {

    static void show(int n)

    {

        System.out.println(n);

    }

    static void show(double n)

    {

        System.out.println(n);

    }

    public static void main(String args[]) {

        Scanner sc=new Scanner(System.in);

        System.out.println("Enter a short value: ");

        short a=sc.nextShort();

        System.out.println("Enter a double value: ");

        double b=sc.nextDouble();

        show(a);

        show(b);

        sc.close();

    }

}

## output:

PS C:\Users\Shruti Pathak\Documents\MCA 2ND SEM\JAVA\ASS1> javac ass1\_06.java

PS C:\Users\Shruti Pathak\Documents\MCA 2ND SEM\JAVA\ASS1> java ass1\_06

Enter a short value:

10

Enter a double value:

25.5

10

25.5

## Design and implement Student class with roll, name and score as attributes. It will have methods to set attributes (attribute values passed as arguments), display the attributes, copy (that copies the content of invoking object to another object passed as argument). Verify that methods are working properly.

**SOURCE CODE:**

public class ass1\_07 {

    static class Student{

        int roll;

        String name;

        double score;

        public void set(int r,String n,double s){

            roll=r;

            name=n;

            score=s;

        }

        public void display(){

            System.out.println("Student details: ");

            System.out.println("Roll: "+roll);

            System.out.println("Name: "+name);

            System.out.println("Score: "+score);

            System.out.println("");

        }

        public void copy(Student s){

            s.roll=roll;

            s.name=name;

            s.score=score;

        }

    }

    public static void main(String args[]) {

        Student s= new Student();

        Student s1 = new Student();

        s.set(21, "Shruti Pathak", 50);

        s.display();

        s.copy(s1);

        System.out.println("After copy: ");

        s1.display();

    }

}

## output:

PS C:\Users\Shruti Pathak\Documents\MCA 2ND SEM\JAVA\ASS1> javac ass1\_07.java

PS C:\Users\Shruti Pathak\Documents\MCA 2ND SEM\JAVA\ASS1> java ass1\_07

Student details:

Roll: 21

Name: Shruti Pathak

Score: 50.0

After copy:

Student details:

Roll: 21

Name: Shruti Pathak

Score: 50.0

## Design a Metric class that supports Kilometre to Mile conversion with distance in Kilometre as argument and Mile to Kilometre conversion with distance in mile as argument. Assume, one Mile equals 1.5 Kilometre.

**SOURCE CODE:**

import java.util.Scanner;

public class ass1\_10 {

    static class Metric{

        double km,mile;

        public double km\_to\_mile(double km) {

            return km/1.5;

        }

        public double mile\_to\_km(double m) {

            return m\*1.5;

        }

    }

    public static void main(String[] args) {

        // TODO Auto-generated method stub

        Metric d=new Metric();

        Scanner sc=new Scanner(System.in);

        System.out.println("Enter distance in Kilometer: ");

        d.km=sc.nextDouble();

        System.out.println("Distance in Miles: "+d.km\_to\_mile(d.km));

        System.out.println("Enter distance in mile: ");

        d.mile=sc.nextDouble();

        System.out.println("Distance in kilometer: "+d.mile\_to\_km(d.mile));

        sc.close();

    }

}

## output:

PS C:\Users\Shruti Pathak\Documents\MCA 2ND SEM\JAVA\ASS1> javac ass1\_10.java

PS C:\Users\Shruti Pathak\Documents\MCA 2ND SEM\JAVA\ASS1> java ass1\_10

Enter distance in Kilometer:

5

Distance in Miles: 3.3333333333333335

Enter distance in mile:

10

Distance in kilometer: 15.0

## Java ASSIGNMENT 2:

**1. Each customer of a bank has customer id, name, and current loan amount and phone number. One can change the attributes like name, phone number. A customer may ask for loan of certain amount. It is granted provided the sum of current loan amount and asked amount does not exceed credit limit (fixed amount for all customer). A customer may be a privileged amount. For such customers credit limit is higher. Once a loan is sanctioned necessary updates should be made. Any type of customer should be able to find his credit limit, current loan amount and amount of loan he can seek.**

**Design and implement the classes.**

**SOURCE CODE:**

import java.util.Scanner;

public class ass2\_01 {

    int cid;

    String cname;

    double cloan;

    int cphone;

    static double credit;

    static Scanner sc=new Scanner(System.in);

    void set()

    {

        System.out.println("Enter customer id: ");

        cid=sc.nextInt();

        System.out.println("Enter customer name: ");

        cname=sc.next();

        System.out.println("Enter customer phone no: ");

        cphone=sc.nextInt();

        System.out.println("Enter customer current loan amount: ");

        cloan=sc.nextDouble();

    }

    void view()

    {

        System.out.println("Customer Details:");

        System.out.println("Customer id: "+cid);

        System.out.println("Customer name: "+cname);

        System.out.println("Customer phone no: "+cphone);

        System.out.println("Customer current loan amount: "+cloan);

    }

    void set\_credit()

    {

        System.out.println("Enter the credit limit: ");

        credit=sc.nextDouble();

    }

    void name\_change()

    {

        System.out.println("Enter new customer name: ");

        cname=sc.next();

    }

    void phoneno\_change()

    {

        System.out.println("Enter new customer phone no: ");

        cphone=sc.nextInt();

    }

    void ask\_loan()

    {

        System.out.println("Enter the loan amont: ");

        double loan=sc.nextDouble();

        if((loan+cloan)>credit)

            System.out.println("Exceed credit limit, loan cannot be sanctioned!!!");

        else

        {

            System.out.println("Loan is sanctioned!!!");

            cloan=cloan+loan;

            System.out.println("Your total loan amount is: "+cloan);

        }

    }

    void check\_credit()

    {

        System.out.println("Your credit value is: "+credit);

        System.out.println("Your current loan amount is: "+cloan);

        if(cloan>=credit)

            System.out.println("Credit limit reached, You can not seek more amount of loan!!!");

        else

            System.out.println("Amount of loan, you can seek: "+(credit-cloan));

    }

    public static void main(String[] args) {

        // TODO Auto-generated method stub

        ass2\_01 cust1=new ass2\_01();

        cust1.set\_credit();

        cust1.set();

        cust1.view();

        System.out.println("Do you want to change the name of the customer(TRUE or FALSE)?");

        boolean ch=sc.nextBoolean();

        if(ch)

            cust1.name\_change();

        System.out.println("Do you want to change the phone no of the customer(TRUE or FALSE)?");

        ch=sc.nextBoolean();

        if(ch)

            cust1.phoneno\_change();

        cust1.ask\_loan();

        cust1.check\_credit();

        System.out.println("\nFor privilleged customer!");

        privilleged cust2=new privilleged();

        cust2.set\_credit();

        cust2.set();

        cust2.view();

        System.out.println("Do you want to change the name of the customer(TRUE or FALSE)?");

        ch=sc.nextBoolean();

        if(ch)

            cust2.name\_change();

        System.out.println("Do you want to change the phone no of the customer(TRUE or FALSE)?");

        ch=sc.nextBoolean();

        if(ch)

            cust2.phoneno\_change();

        cust2.ask\_loan();

        cust2.check\_credit();

    }

}

class privilleged extends ass2\_01

{

    static double credit;

    void set\_credit()

    {

        System.out.println("Enter the credit limit for privilleged customer: ");

        credit=sc.nextDouble();

    }

    void ask\_loan()

    {

        System.out.println("Enter the loan amont: ");

        double loan=sc.nextDouble();

        if((loan+cloan)>credit)

            System.out.println("Exceed credit limit, loan cannot be sanctioned!!!");

        else

        {

            System.out.println("Loan is sanctioned!!!");

            cloan=cloan+loan;

            System.out.println("Your total loan amount is: "+cloan);

        }

    }

    void check\_credit()

    {

        System.out.println("Your credit value is: "+credit);

        System.out.println("Your current loan amount is: "+cloan);

        if(cloan>=credit)

            System.out.println("Credit limit reached, You can not seek more amount of loan!!!");

        else

            System.out.println("Amount of loan, you can seek: "+(credit-cloan));

    }

}

## output:

PS C:\Users\Shruti Pathak\Documents\MCA 2ND SEM\JAVA\ASS2> javac ass2\_01.java

PS C:\Users\Shruti Pathak\Documents\MCA 2ND SEM\JAVA\ASS2> java ass2\_01

Enter the credit limit:

1000

Enter customer id:

101

Enter customer name:

shruti

Enter customer phone no:

988676980

Enter customer current loan amount:

0

Customer Details:

Customer id: 101

Customer name: shruti

Customer phone no: 988676980

Customer current loan amount: 0.0

Do you want to change the name of the customer(TRUE or FALSE)?

true

Enter new customer name:

Annesa

Do you want to change the phone no of the customer(TRUE or FALSE)?

false

Enter the loan amont:

500

Loan is sanctioned!!!

Your total loan amount is: 500.0

Your credit value is: 1000.0

Your current loan amount is: 500.0

Amount of loan, you can seek: 500.0

For privilleged customer!

Enter the credit limit for privilleged customer:

5000

Enter customer id:

501

Enter customer name:

Puja

Enter customer phone no:

987563548

Enter customer current loan amount:

4000

Customer Details:

Customer id: 501

Customer name: Puja

Customer phone no: 987563548

Customer current loan amount: 4000.0

Do you want to change the name of the customer(TRUE or FALSE)?

false

Do you want to change the phone no of the customer(TRUE or FALSE)?

true

Enter new customer phone no:

979854678

Enter the loan amont:

2000

Exceed credit limit, loan cannot be sanctioned!!!

Your credit value is: 5000.0

Your current loan amount is: 4000.0

Amount of loan, you can seek: 1000.0

**6. Consider a wrapper class for a numeric basic type. Check the support for the following: conversion from i) basic type to object ii) object to basic type iii) basic type to String iv) String (holding numeric data) to numeric object v) object to String.**

**SOURCE CODE:**

import java.util.Scanner;

public class ass2\_06 {

    public static void main(String[] args) {

        Scanner sc = new Scanner(System.in);

        System.out.println("Enter a integer: ");

        int a = sc.nextInt();

        Integer i = Integer.valueOf(a);

        System.out.println("Basic type to object => " + i);

        int b = i.intValue();

        System.out.println("Object to basic type => " + b);

        String num = String.valueOf(b);

        System.out.println("Basic type to string => " + num);

        Integer newNum = Integer.parseInt(num);

        System.out.println("String (holding numeric data) to  numeric object => " + newNum);

        String newString = Integer.toString(b);

        System.out.println("Object to string => " + newString);

        sc.close();

    }

}

## output:

PS C:\Users\Shruti Pathak\Documents\MCA 2ND SEM\JAVA\ASS2> javac ass2\_06.java

PS C:\Users\Shruti Pathak\Documents\MCA 2ND SEM\JAVA\ASS2> java ass2\_06

Enter a integer:

20

Basic type to object => 20

Object to basic type => 20

Basic type to string => 20

String (holding numeric data) to numeric object => 20

Object to string => 20

## python ASSIGNMENT 1:

1. **Write a prime generator program using only primes and using python loops.**

**SOURCE CODE:**

min=int(input("Enter the lowest range: "))

max=int(input("Enter the upper range: "))

print("The Prime numbers in the range are: ")

for i in range(min,max+1):

    if i > 1:

        for j in range(2,i):

            if (i%j) == 0:

                break

        else:

            print(i)

## output:

PS C:\Users\Shruti Pathak\Documents\MCA 2ND SEM\PYTHON> py ass1.py

Enter the lowest range: 10

Enter the upper range: 30

The Prime numbers in the range are:

11

13

17

19

23

29

1. **Write a discount coupon code using dictionary in Python with different rate coupons for each day of the week.**

**SOURCE CODE:**

import datetime

coupon\_codes={

    "Monday": 0.10,

    "Tuesday": 0.15,

    "Wednesday": 0.20,

    "Thursday": 0.25,

    "Friday": 0.30,

    "Saturday": 0.35,

    "Sunday": 0.40,

}

current\_day= datetime.datetime.now().strftime("%A")

if current\_day in coupon\_codes:

    discount\_rate = coupon\_codes[current\_day]

    coupon\_code= f"DISCOUNT{int(discount\_rate \* 100)}"

    print(f"Today is {current\_day}, and the discount rate is {discount\_rate \*100}%")

    print(f"Use coupon code '{coupon\_code}' at checkout to avail the discount!")

else:

    print("No discount for today")

## output:

PS C:\Users\Shruti Pathak\Documents\MCA 2ND SEM\PYTHON> py ass2.py

Today is Saturday, and the discount rate is 35.0%

Use coupon code 'DISCOUNT35' at checkout to avail the discount!

1. **Print first 10 odd and even numbers using iterators and compress. You can use duck typing.**

**SOURCE CODE:**

from itertools import compress,count

numbers=count(1)

odd\_pattern= [True,False]\*10

odd\_numbers= compress(numbers,odd\_pattern)

print("First 10 odd numbers : ")

for \_ in range(10):

    print(next(odd\_numbers),end = " ")

print()

numbers=count(1)

even\_pattern= [False,True]\*10

even\_numbers= compress(numbers,even\_pattern)

print("First 10 even numbers : ")

for \_ in range(10):

    print(next(even\_numbers),end = " ")

print()

## output:

PS C:\Users\Shruti Pathak\Documents\MCA 2ND SEM\PYTHON> py ass3.py

First 10 odd numbers :

1 3 5 7 9 11 13 15 17 19

First 10 even numbers :

2 4 6 8 10 12 14 16 18 20

1. **Write a regular expression to validate a phone number.**

**SOURCE CODE:**

import re

n=input('Enter Mobile number : ')

r=re.fullmatch('[6-9][0-9]{9}',n)

if r!=None:

    print('Valid Number')

else:

    print('Not a valid number')

## output:

PS C:\Users\Shruti Pathak\Documents\MCA 2ND SEM\PYTHON> py ass4.py

Enter Mobile number : 7679532692

Valid Number

PS C:\Users\Shruti Pathak\Documents\MCA 2ND SEM\PYTHON> py ass4.py

Enter Mobile number : 234567

Not a valid number

PS C:\Users\Shruti Pathak\Documents\MCA 2ND SEM\PYTHON> py ass4.py

Enter Mobile number : oiuyft

Not a valid number

1. **Write first seven Fibinacci numbers using generator next function/ yield in python. Trace  and memorize the function.**

**SOURCE CODE:**

def fibo\_generator():

    a,b=0,1

    count=0

    while count < 7:

        yield a

        a,b=b,a+b

        count +=1

fib\_gen= fibo\_generator()

print("Fibonacci Sequence with 7 terms: ")

for i in range(7):

    fibo\_num=next(fib\_gen)

    print(fibo\_num, end= " ")

## output:

PS C:\Users\Shruti Pathak\Documents\MCA 2ND SEM\PYTHON> py ass5.py

Fibonacci Sequence with 7 terms:

0 1 1 2 3 5 8

**6. Write a simple program which loops over a list of user data (tuples containing a username, email and age) and adds each user to a directory if the user is at least 16 years old. You do not need to store the age. Write a simple exception hierarchy which defines a different exception for each of these error conditions:**

* **the username is not unique**
* **the age is not a positive integer**
* **the user is under 16**
* **the email address is not valid (a simple check for a username, the @ symbol and a domain name is sufficient)**

**Raise these exceptions in your program where appropriate. Whenever an exception occurs, your program should move onto the next set of data in the list. Print a different error message for each different kind of exception.**

**SOURCE CODE:**

userdata=[

    ["user1", "user1@gmail.com",12],

    ["user2", "user2@gmail.com",15],

    ["user3", "user3@gmail.com",19],

    ["user3", "user3@gmail.com",19],

    ["user4", "user4@gmail.com",30],

    ["user5", "user5@gmail.com",-21],

    ["user6", "user6@gmail.com",67],

    ["user7", "user7@gmail.com",18],

    ["user8", "user8gmail.com",19]

]

user\_dict={}

for user in userdata:

    try:

        if(user[0] in user\_dict.keys()):

            raise Exception("The username is not unique for: " +user[0])

        elif(user[2] <0):

            raise Exception("The age is not a positive integer for: "+user[0])

        elif(user[2]<16):

            raise Exception("The user is under 16 for: "+user[0])

        elif '@' not in user[1] or '.com' not in user[1]:

            raise Exception("The email address is not valid for: "+user[0])

        else:

            user\_dict[user[0]]= user[1]

    except Exception as e:

        print("Exception occured!!!",str(e))

        continue

print("\nValid users are: ")

print(user\_dict)

## output:

PS C:\Users\Shruti Pathak\Documents\MCA 2ND SEM\PYTHON> py ass5.py

Fibonacci Sequence with 7 terms:

0 1 1 2 3 5 8

PS C:\Users\Shruti Pathak\Documents\MCA 2ND SEM\PYTHON> py ass6.py

Exception occured!!! The user is under 16 for: user1

Exception occured!!! The user is under 16 for: user2

Exception occured!!! The username is not unique for: user3

Exception occured!!! The age is not a positive integer for: user5

Exception occured!!! The email address is not valid for: user8

Valid users are:

{'user3': 'user3@gmail.com', 'user4': 'user4@gmail.com', 'user6': 'user6@gmail.com', 'user7': 'user7@gmail.com'}

**8. Create a list of all the numbers up to N=50 which are multiples of five using anonymous function.**

**SOURCE CODE:**

# Create a list of all numbers up to N=50 that are multiples of five using an anonymous function

N = 50

# Use a list comprehension with an anonymous function

multiples\_of\_five = [num for num in range(1, N+1) if (lambda x: x % 5 == 0)(num)]

# Print the list of multiples of five

print(multiples\_of\_five)

## output:

PS C:\Users\Shruti Pathak\Documents\MCA 2ND SEM\PYTHON> py ass8.py

[5, 10, 15, 20, 25, 30, 35, 40, 45, 50]

**10. Filter out the odd squares using map, filter, list.**

**SOURCE CODE:**

import math

def is\_odd(num):

    return math.sqrt(num) % 2 != 0

def square(num):

    return num \* num

# List of numbers

numbers = [1, 2, 3, 4, 5, 6, 7, 8, 9, 10]

# Use map to square each number

squared\_numbers = list(map(square, numbers))

# Use filter to keep only odd numbers

filtered\_numbers = list(filter(is\_odd, squared\_numbers))

print(filtered\_numbers)

## output:

PS C:\Users\Shruti Pathak\Documents\MCA 2ND SEM\PYTHON> py ass10.py

[1, 9, 25, 49, 81]

1. **Let's find all Pythagorean triples whose short sides are numbers smaller than 10. use filter and comprehension.**

**SOURCE CODE:**

# Define the function to check if a triple is a Pythagorean triple

def is\_pythagorean\_triple(triple):

    a, b, c = triple

    return a\*\*2 + b\*\*2 == c\*\*2

# Generate all possible combinations of numbers smaller than 10

numbers = range(1, 10)

# Use filter and comprehension to find the Pythagorean triples

pythagorean\_triples = [

    (a, b, c)

    for a in numbers

     for b in numbers

     for c in numbers

    if is\_pythagorean\_triple((a, b, c))

]

# Print the Pythagorean triples

for triple in pythagorean\_triples:

    print(triple)

## output:

PS C:\Users\Shruti Pathak\Documents\MCA 2ND SEM\PYTHON> py ass11.py

(3, 4, 5)

(4, 3, 5)

1. **Enumerate the sequence of all lowercase ASCII letters, starting from 1, using**

**enumerate.**

**SOURCE CODE**

list\_chars=["a","b","c","d","e","f","g","h","i","j","k","l","m","n","o","p","q",

            "r","s","t","u","v","w","x","y","z"]

i=1

for ascii,char in enumerate(list\_chars,97):

    print(i,". ",char,"-->",ascii,sep='')

    i=i+1

## output:

PS C:\Users\Shruti Pathak\Documents\MCA 2ND SEM\PYTHON> python -u "c:\Users\Shruti Pathak\Documents\MCA 2ND SEM\PYTHON\ass12.py"

1. a-->97

2. b-->98

3. c-->99

4. d-->100

5. e-->101

6. f-->102

7. g-->103

8. h-->104

9. i-->105

10. j-->106

11. k-->107

12. l-->108

13. m-->109

14. n-->110

15. o-->111

16. p-->112

17. q-->113

18. r-->114

19. s-->115

20. t-->116

21. u-->117

22. v-->118

23. w-->119

24. x-->120

25. y-->121

26. z-->122

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