Atma Ram Sanatan Dharma College

Class Assignment

Practical File

Question 3

SUBMITTED BY

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Course : Bsc.(Hons) Computer Science

Roll no : 22/28006

Semester : 2

Subject : Discrete Mathematical Structures

Teacher : Dr. Shalini Gupta(Faculty Of Computer Science)

3) Write a program that generates all the permutations of a given set of digits, with or without repetition.

CODE

Go Run Terminal Help 3.py - question3 - Visual Studio Code

Welcome 3.py

3.py > ...

```
'''
Q3)Write a Program that generates all the permutations of a given set of digits, with or without repetition.
'''
from itertools import permutations      #importing itertools module
def generatePermutations(n,with_repetition=False):      #function with with_repetition=False
    if with_repetition:
        perm=permutations(n,len(n))
    else:
        perm=permutations(n)
    for i in list(perm):          #printing the permutations in list form sequentively
        print (i)

def main():    #main Program
    print("Program to generate all the permutations of a given set of digits with or without permutations.")
    digits=eval(input("enter the digits to be added in the list whose permutation you want to find:"))

    permutationsWithoutRepetition=generatePermutations(digits)      #Permutations without repetition
    permutationsWithRepetition=generatePermutations(digits,with_repetition=True)  #Permutations with repetition

main()
```

Output

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL Code

```
PS C:\Users\ankit\Desktop\1st semester 2nd year\DMS\Practicals\question3> python -u "c:\Users\ankit\Desktop\1st semester 2nd year\DMS\Practicals\question3\3.py"
Program to generate all the permutations of a given set of digits with or without permutations.
enter the digits to be added in the list whose permutation you want to find:[1,2,3]
(1, 2, 3)
(1, 3, 2)
(2, 1, 3)
(2, 3, 1)
(3, 1, 2)
(3, 2, 1)
(1, 2, 3)
(1, 3, 2)
(2, 1, 3)
(2, 3, 1)
(3, 1, 2)
(3, 2, 1)
PS C:\Users\ankit\Desktop\1st semester 2nd year\DMS\Practicals\question3>
```