

**SIKSHA 'O' ANUSANDHAN**  
**DEEMED TO BE UNIVERSITY**

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**Laboratory Record**

**Programming in Python (CSE 3142)**

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## INDEX

## Minor Assignment - 9

### File and Exceptions

- a1) Write a function that takes two file names, file1 and file2 as input. The function should read the contents of the file line by line and should write them to another file file2 after adding a newline at the end of each line.

Program :-

```
def fun(file1, file2):
    file1 = open('file1.txt', 'w')
    file1.write('Welcome to iter')
    file1.write('\n SOA University')
    file1.close()
    with open('file1.txt', 'r') as file1:
        with open('file2.txt', 'w') as file2:
            for line in file1:
                file2.write(line)
            file2.close()
    fun('file1.txt', 'file2.txt')
```

- a2) Write a function that reads a file and displays the number of words and the number of vowels in the file.

Program :-

```
def fun(file1):
    file1 = open('file1.txt', 'w')
    file1.write('Welcome to iter')
    file1.write('\n SOA University')
    file1 = open('file1.txt', 'r')
    word_count = 0
```

```
vowels_count = 0
str = file1.read()
for ch in str:
    if (ch == 'a' or ch == 'e' or ch == 'i' or ch == 'o' or ch == 'u' or
        ch == 'A' or ch == 'E' or ch == 'I' or ch == 'O' or ch == 'U' or
        ch == 'U'):
        vowels_count += 1
word = str.split()
word_count = word_count + len(words)
print(vowels_count)
print(word_count)
file1.close()
fun('file1.txt')
```

Q3) Write a function that takes data to be stored in the file file1 as interactive input from the user until he responds with nothing as input. Each line taken as input from the user should be capitalized, and stored in the file file1.

Program :-

```
def fun(file1):
    file1 = open('file1.txt', 'w')
    s1 = input("Enter a sentence : ")
    while (s1 != ''):
        file.write(s1.capitalize())
        s1 = input("Enter a sentence : ")
    file1.close()
    file1 = open('file1.txt', 'r')
    print(file1.read())
fun('file1.txt')
```

Q4) Write a function that reads the file file1 and copies only alternative lines to another file file2. Alternative lines copied should be the odd numbered lines. Handle all exceptions that can be raised.

Program :-

```
def fun(file1, file2):
    file1 = open('file1.txt', 'r')
    file1.write("Hello world this is good now to save")
    file1.close()

    try:
        file1 = open('file1.txt', 'r')
        file2 = open('file2.txt', 'w')
    except IOError:
        print('File doesn't exist')
        context = file1.readlines()
        type(context)
        for i in range(0, len(context)):
            if i%2 == 0:
                file2.write(context[i])
            else:
                pass
        file2.close()
    fun('file1.txt', 'file2.txt')
```

Q5) Write a function that takes two files of equal size as input from the user. The first file contains weights of items & the second file contains corresponding forces. Create another file that should contain force per unit weight for each item

```
def fun(file1, file2):
    lst = []
    file1 = open('file1.txt', 'r')
    file2 = open('file2.txt', 'r')
    file3 = open('file3.txt', 'w')
    for line in file1.read():
        for word in line.split():
            while (i < len(lst)):
                file3.write(str(int(word)/int(lst[i])) + ",")
            i = i + 1
    fun('file1.txt', 'file2.txt')
```

Q6) Write a function that reads the contents of the file Poem.txt and counts the number of alphabets, blank spaces, lower-case letters and uppercase letters, the number of words starting with a vowel and the number of occurrences of word 'beautiful' in the file.

Program :-

```
def countAll(file1):
    file1 = open('Poem.txt', 'r')
    data = file1.read()
    alphabets = 0
    blanks = 0
    lower = 0
    upper = 0
    wordsV = 0
    beau = data.count('beautiful')
```

```
for i in range(len(data)):  
    if data[i].isalpha():  
        alphabet += 1  
        if data[i].isupper():  
            upper += 1  
        else:  
            lower += 1  
    if data[i] == ' ':  
        blanks += 1  
    if data[i+1] in 'aeiouAEIOU':  
        wordsV += 1  
print('No. of alphabets = ', alphabets)  
print('No. of blank spaces = ', blanks)  
print('No. of uppercase = ', upper)  
print('No. of lowercase = ', lower)  
print('No. of words starting vowels = ', wordsV)  
print('No. of words start with beautiful = ', beau)  
file1 = open('Poem.txt', 'r')  
countAll(file1)
```

Q7) what will be the output produced on executing function inverse1 when the following input is entered as the value of variable num:

- (a) 5      (b) 0      (c) 2.0      (d) 9c      (e) None

```
def inverse1(c):  
    try:
```

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52

Regd. Number: 1941012407

```
num = input('enter the number: ')
num = float(num)
inverse = 1.0/num
except ValueError:
    print('ValueError')
except TypeError:
    print('TypeError')
except ZeroDivisionError:
    print('ZeroDivisionError')
except:
    print('Any other Error')
else:
    print(inverse)
finally:
    print('Function inverse completed').
```

(Ans)

(a) 0.2

function inverse completed

(b) zeroDivisionError

function inverse completed

(c) ValueError

function inverse completed

(d) ValueError

function inverse completed.

Q8) Examine the following function percentage:

def percentage(marks, total):

Name: Sarwat Mohanty

83

Regd. Number: 1941012407

try :

percentage = (marks / total) \* 100

except ValueError :

print ('ValueError')

except TypeError :

print ('TypeError')

except ZeroDivisionError :

print ('Zero Division Error')

except :

print ('Any other error')

else :

print (percent)

finally :

print ('Function percentage completed')

Determine the output for the following function calls:

a) percentage (150.0, 200.0)

b) percentage (150.0, 0.0)

c) percentage ('150.0', '200.0')

(Ans)

a) 75.0

function percentage completed

b) zeroDivisionError

function percentage completed

c) TypeError

function percentage completed

Q9) Identify two exceptions that may be raised while executing the following statement:

result = a + b

(Ans) TypeError and NameError

Q10) What will be the output for the following code snippets if the file being opened doesn't exist:

a) ~~without newline.~~ try :

```
f = open('file1.txt', 'r')
```

except IOError:

```
print('Problem with Input output ... \n')
```

else:

```
print('No problem with Input output ... \n')
```

Output :-

Problem with Input output

b) try :

```
f = open('file1.txt', 'w')
```

except IOError:

```
print('Problem with Input output ... \n')
```

else:

```
print('No problem with Input output ... \n')
```

Output :-

No problem with Input output.

Q11) Consider the following program. Check for the error, otherwise write the output.

```
f = open('PYTHON', 'w')
f.write('"I am great" and')
f.write('"failure is a part of success"')
f = open('PYTHON', 'r')
print(f.read())
f.close()
```

Output :-

"I am great"

"failure is a part of success"

Q12) Consider the following program. Check for the error, otherwise write the output.

```
f = open('file1', 'r')
f.write('"work is worship"')
f.close()
```

Output :-

FileNotFoundException

Q13) Consider the following program. Write the output.

a) f = open('PYTHON', 'w')
f.write('failure is a part of success')
f = open('PYTHON', 'r')
print(f.read())

Name: Sarwat Mohanty

86

Regd. Number: 1941012407

f.close()

Output :-

fail

b) f = open('PYTHON1', 'w')

f.write('failure is a part of success')

f = open('PYTHON', 'r')

print(f.read())

f.close()

Output :-

failure is a part of success

Q14) consider the following program. Write the output.

f = open('PYTHON', 'w')

f.write('failure is a part of success also, i am file')

f = open('PYTHON', 'r')

print(f.readline())

f.close()

Output :-

failure is a part of success also, i am fine

Q15) consider the following program. Write the output.

f = open('PYTHON', 'w')

description = ['we either choose the pain of discipline \n',

'or \n', 'the pain of regret \n']

f.writelines(description)

f.close()

f = open ('PYTHON', 'r')

print (f.read())

f.close()

Output :-

we either choose the pain of discipline

' , ' or

' , ' the pain of regret