MODERN PROGRAMMING

Mid-Term Assignment
Sir. FaheemUllah

HASSAN MEHDI
15453
Csc-201

Q1: Print IQRA using 16-bit unicode (Hint: Escape Character) Hex values

I=0049 Q=0051 R=0052 A=0041

ANS TO Q1:

```
#Use escape character '\'
print (u'\u0049\u0051\u0052\u0041')
```

#OUTPUT

```
IQRA
```

Q2: Suppose you have a string "Iqra National University" stored in a variable a. Write a program that…

a) Converts the string into a List

ANS TO Q2 TASK A:

```
# Variable 'a'
a = "Iqra National University"

#TASK: Convert the string to a List
a = list(a.split(" "))

#print the results
print(a)
```

#OUTPUT

```
['Iqra', 'National', 'University']
```

b) Insert an Element "Peshawar" at the end

ANS TO Q2 TASK B:

```
# Variable 'a'
a = "Iqra National University"

# Convert the string to a List
a = list(a.split(" "))
```

```
#TASK: Insert an Element "Peshawar" at the end
a.append("Peshawar")

#print the results
print(a)
```

#OUTPUT

```
['Iqra', 'National', 'University', 'Peshawar']
```

c) Sort the list

ANS TO Q2 TASK C:

```
# Variable 'a'
a = "Iqra National University"

# Convert the string to a List
a = list(a.split(" "))

# Insert an Element "Peshawar" at the end
a.append("Peshawar")

#TASK: Sort the list
a.sort()

# print the results
print(a)
```

#OUTPUT

```
['Iqra', 'National', 'Peshawar', 'University']
```

d) Prints Abbreviation of the first 3 Elements and the 4rth Element complete each separated by a dot.

ANS TO Q2 TASK D:

```
# Variable 'a'
a = "Iqra National University"

# Convert the string to a List
a = list(a.split(" "))

# Insert an Element "Peshawar" at the end
```

```
a.append("Peshawar")

#TASK: Print 'I.N.U.Peshawar'
# Change the first 3 elements of 'a' with their abbreviations
for word in a[:3]:
    a.remove(word)
    a.insert(-1, word[0])

# Print I.N.U.Peshawar using formatted string
print(f'{a[0]}.{a[1]}.{a[2]}.{a[3]}')
```

#OUTPUT

```
I.N.U.Peshawar
```

Q3: *Suppose You have a list*
a=[[4,5,9], [1,5,3], [0,8,12], [3,1,9]]
Write a program that finds the list whose sum of elements is highest

ANS TO Q3:

```
# Variable 'a'
a = [[4, 5, 9], [1, 5, 3], [0, 8, 12], [3, 1, 9]]

# Variables to store Highest sum and the list containing the highest sum
highest_sum = 0
highest_sum_list = []

# get the sum of each list and add the highest sum to the variable
for list in a:
   if sum(list) > highest_sum:
      highest_sum = sum(list)
      highest_sum_list = list[:]

# Print the results using formatted string
print(f"""List of highest sum is {highest_sum_list}
The highest sum is {highest_sum}""")
```

#OUTPUT

```
List of highest sum is [0, 8, 12]
The highest sum is 20
```

Q4: *5 Marks Write a program that inputs a Student ID 5 times and determines how many Student ID's are valid. For the purpose of this question a valid Student ID is defined as follows:*

- *exactly 6 characters long*
- *begins with the uppercase characters 'INU'*
- *all characters beside the beginning 'INU' character must be numbers*

ANS TO Q4:

```
print('Enter 5 student IDs\n')

# Variables to store Correct/Incorrect IDs and Condition for
while loop
correct_IDs = 0
incorrect_IDs = 0
count = 5

while count >= 1:
   id_input = input(':> ')

   # User try-except for exception created by
int(id_input[3:])
   try:
      if len(id_input) == 6 and id_input[0:3] == 'INU' and
int(id_input[3:]):
         print(f'ID {id_input} is a correct ID.\n')
         correct_IDs += 1
      else:
         print(f'ID {id_input} is not a correct ID\n')
         incorrect_IDs += 1
   except:
      print(f'ID {id_input} is not a correct ID\n')
      incorrect_IDs += 1

   count -= 1

# print the amount of correct/incorrect IDs
print(f'Correct IDs = {correct_IDs}\nIncorrect IDs =
{incorrect_IDs}')
```

#OUTPUT

```
Enter 5 student IDs

:> INU123
ID INU123 is a correct ID.
```

```
:> INU777
ID INU777 is a correct ID.

:> INu123
ID INu123 is not a correct ID

:> INUabc
ID INUabc is not a correct ID

:> INU12a
ID INU12a is not a correct ID

Correct IDs = 2
Incorrect IDs = 3
```

Q5: *Write a program that takes a string from the user and then print a new string by changing lowercase letters to uppercase letters and uppercase letters to lowercase letters.* ***[Hint: Import String Class]***

ANS TO Q5:

```
print('Enter a String\n')

entered_string = input(':> ')

#use swapcase() method
swaped_string =  entered_string.swapcase()

# print the new string
print(swaped_string)
```

#OUTPUT

```
Enter a String

:> Stay HOME StAy SaFe
sTAY home sTaY sAfE
```