

UNITED COLLEGE OF ENGINEERING AND RESEARCH, GREATER NOIDA

SUBJECT: Python programming

SUBJECT CODE: KNC-402

SEMESTER IV

ASSIGNMENT 2 (UNIT 2)

May 24 ,2023

Task 1: Conditional Statements

- 1) Write a program that asks the user to enter an integer and performs the following checks:

If the number is positive, print "Number is positive."

If the number is negative, print "Number is negative."

If the number is zero, print "Number is zero."

Task 2: Nested If Statements and Elif

- 2) Write a program that asks the user to enter their age and performs the following checks:

If the age is less than 18, print "You are a minor."

If the age is between 18 and 65 (inclusive), print "You are an adult."

If the age is greater than 65, print "You are a senior citizen."

Task 3: Expression Evaluation & Float Representation

- 3) Write a program that asks the user to enter two floating-point numbers and performs the following tasks:

Add the two numbers and print the result.

Multiply the two numbers and print the result.

Calculate the integer division of the first number by the second number and print the result.

Calculate the remainder when the first number is divided by the second number and print the result.

Task 4: Loops

- 4) Write a program that uses loops to perform the following tasks:

Print all even numbers between 1 and 20 (inclusive).

Print the sum of all odd numbers between 1 and 50 (inclusive).

Print the multiplication table of a number entered by the user. The table should be printed from 1 to 10.

Task 5: Nested Loops, Break, and Continue

5) Write a program that uses nested loops to print the following pattern:

```
1
1 2
1 2 3
1 2 3 4
1 2 3 4 5
```

Use the break statement to exit the inner loop if the number 3 is encountered. Use the continue statement to skip printing a number if it is equal to 2.

Task 6: Strings

- 6) What is “slicing of strings”?
- 7) What is “List comprehension” and “Dictionary comprehension”?
- 8) What are mutable sequences?
- 9) Write a program that performs the following operations on a given string:

Calculate and print the length of the string.

Concatenate the string with another string entered by the user and print the result.

Repeat the string a specified number of times (entered by the user) and print the result.

Perform indexing and slicing operations on the string and print the results.

Task 7: Tuples and Unpacking Sequences

10) Write a program that demonstrates the use of tuples and unpacking sequences:

Create a tuple containing the names of three countries.

Unpack the tuple into three variables and print them.

Task 8: Lists and Mutable Sequences

11) Write a program that demonstrates the use of lists and mutable sequences:

Create a list of five integers.

Change the value of the second element in the list.

Append a new element to the end of the list.

Remove the third element from the list.

Print the modified list.

Task 9: List Comprehension

12) Write a program that uses list comprehension to perform the following tasks:

Create a new list that contains the square of each number from 1 to 10.

Create a new list that contains only the even numbers from a given list of integers.

Task 10: Sets and Dictionaries

13) Write a program that demonstrates the use of sets and dictionaries:

Create a set containing the names of five cities.

Print the number of cities in the set.

Create a dictionary that maps the names of cities to their respective populations.

Print the population of a specific city from the dictionary.

Note: Students are required to submit the assignment by 31-05-2023. Assignments submitted after the deadline will not be evaluated.