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**Assignement-V**  
**National Institute of Technology Silchar**  
**Due date: 26 December 2022**

**Course Instructor: Dr. Ripon Patgiri (ripn@cse.nits.ac.in)**

Subject Code: CS-101  
Semester: 1<sup>st</sup>  
Course: B.Tech

Subject: Introduction to Computer Programming  
Department: CSE  
Section: J

*Answers should be submitted in a scanned copy of the handwritten format. Also, submit the source code of the corresponding questions in a zip folder.*

***Write functions for all questions given below.***

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1. Given two strings  $str_1[]$  and  $str_2[]$  and the length of the strings are  $l_1$  and  $l_2$ . Write a program to shuffle the two strings randomly to produce a new string  $res[]$ , and its length is  $l = l_1 + l_2$ . Illustratively, a character from either  $str_1[]$  or  $str_2[]$  is selected randomly and copied the character to  $res[]$  in each iteration. All characters are copied randomly from  $str_1[]$  and  $str_2[]$  to  $res[]$ . You are allowed to use your own random function.
2. Write a simple program to encrypt an input string and decrypt the encrypted string. The encryption process converts a string into ciphertext, and the decryption process converts the encrypted string back to the original string. Alternatively, the encryption process replaces the original characters with different characters to produce a ciphertext. The decryption process converts back the original string from the ciphertext.
3. Given a sentence  $str[]$ . Write a program to reverse the sentence but not the word. Use a function for swapping two strings.  
Sample input: I Love You  
Sample output: You Love I
4. Write a program to check whether a given floating point number is valid or not.  
Valid input: 1, 1.0, 0.1234, 1.2345, 1.2345f, 1.23E+10, 1.23E-10, 1.23e+10, 1.23e-10, 1.23e10.  
Invalid input: 1.e10, 1., 1.1.2, 1.e.10 etc.  
Note: A floating point input is a string.
5. Write a program to check whether a given email is valid or not. Please refer to the email rule in the following link- [https://en.wikipedia.org/wiki/Email\\_address](https://en.wikipedia.org/wiki/Email_address)
6. Write a program to check whether a given password is valid or not using the following defined rules:
  - The length of the password is at least ten characters long.
  - At least two upper letters, two lower letters, two symbols, and two digits.
  - No two consecutive symbols are permitted.
  - All digits/characters should not be the same; for instance, aaaaaaa or 11111 are not allowed.