LAB 12: String Algorithms

CS211 – Data Structures and Algorithms
Usman Institute of Technology
Fall 2019

- **How to submit:**
  - Create an account on http://www.turnitin.com/ as a Student (if you don't have already)
  - Use following information at time of sign-up

    CS Section A
    - Class ID: 22664649
    - Enrollment Key: DSFALL19CSA

    CS Section B
    - Class ID: 22664651
    - Enrollment Key: DSFALL19CSB

A. Create a class StringOP in order to implement string algorithms.

1. Add a constructor of the class that takes one argument data which initializes the string.

```
class StringOP:
    def __init__(self,data):
        // your code goes here
```

2. Add a function StrLength() which takes a string value as a parameter and returns the length of the string.

```
    def StrLength(self):
        // your code goes here
```

3. Add a function StrConcat() which takes two strings as parameters and returns the concatenated in string.

```
    def StrConcat(self,string1,string2):
        // your code goes here
```

4. Add a function SubString() which takes a string, a starting index and an ending index as parameters and returns a substring consisting of elements between those indices.

```
def SubString(self,text,start,end):
    // your code goes here
```

5. Add a function InsertStr() which takes a string data, string text and position as parameters and returns a string by inserting the text string in data string at given position.

```
def InsertStr(self,data,text,pos):
    // your code goes here
```

6. Add a function DeleteStr() which takes a data string, an index from which the element is to be deleted and length of elements to be deleted as parameters and returns a resulting string.

```
def DeleteStr(self,data,pos,length):
    // your code goes here
```

7. Add a function Naive() which takes a data string and a pattern as parameters. The function checks if pattern is the substring of the data and returns the index from which the pattern is started in the data.

```
def Naive(self,data,pattern):
    // your code goes here
```

Home Assignment

Write a function RabinKarp() which takes a data string and a pattern as paramters. The function should also take radix value and prime value as paramters. The function checks if the pattern is the substring of the data and returns the index of the data at which the pattern started.

```
def RabinKarp(data,pattern,radix,prime):
    // your code goes here
```