**Department of Computer Science and Engineering**

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| **Course Code: CSE 420** | **Credits: 1.5** |
| **Course Name: Compiler Design** | **Semester: Summer 2020** |

**Lab 03**

**Introduction**

**I. Topic Overview:**

The lab is designed to introduce the students to the basics concept of a compiler Design. As part of this activity students will be using built in libraries. Basic techniques of coding and required tools will also be shown to students.

**II. Lesson Fit:**

The lab gives a hand on experience of the knowledge of theory class.

**III. Learning Outcome:**

After this lab, the students will be able to:

a. Understand and use built-in library function for tokenization.

b. Use ***Regex*** library effectively.

**IV. Anticipated Challenges and Possible Solutions**

**Possible Solutions:**

a. Use built in methods of java.

**V. Acceptance and Evaluation**

If a task is a continuing task and one couldn’t finish within time limit, he/she will continue from there in the next Lab, or be given as a home work. He/ she have to submit the code and have to face a short viva. A deduction of 30% marks is applicable for late submission. The marks distribution is as follows:

Code: 0%

Viva: 100%

**VI. Activity Detail**

**Activity Detail**

**a. Hour: 1 - 2**

**Discussion:** Learn Regex to Convert Regular Expression.

**Problem Task: Task 1 (page 3-4)**

**b. Hour: 3**

**Discussion:** Code in Regex.

**Problem Task: Task 2 (page 4-5)**

**Assignment 3: Problem Description**

In this assignment, you will work on regular expression. For simplicity, we will assume that there is a fixed set of regular expressions. We will not consider out of these. You must use any built-in method or package in your implementation. The following table contains a fixed set of RE that will be used in this assignment.

|  |  |  |  |
| --- | --- | --- | --- |
| **Description** | **RE** | **Valid** | **Invalid** |
| Zero or more | a(bc)\*de | ade  abcbcde | abde  abcbde |
| One or more | a(bc)+de | abcde  abcbcde | ade  abc |
| Once or not at all | a(bc)?de | ade  abcde | abc  abcbcde |
| Character classes | [a-m]\* | blackmail  imbecile | above  below |
| Negation of character classes | [^aeiou] | b  c | a  e |
| Exactly N times | [^aeiou]{6} | rhythm  syzygy | rhythms  allowed |

**Lab 3: Activity List**

**Task 1:** Learn Regex by searching in google. https://www.tutorialspoint.com/java/java\_regular\_expressions.htm

**Input:**

2

ab\*c\*d

a\*b(cd)+e?f

3

acccd

abbbbbcccc

bcdcdef

**Output:**

YES, 1

NO, 0

YES, 2

**Input:**

3

[a-c]{3}cab+(da)\*f

db\*a[^def]{2}gh

def[k-p]\*p+

5

defkmnpmpp

acbcabbf

pqrstdd

dbaabggh

dbbbbamkgh

**Output:**

YES, 3

YES, 1

NO, 0

NO, 0

YES, 2