

National University of Computer & Emerging Sciences, Karachi

Spring - 2022

Department of Computer Science

Assignment # 1

Due Date: 25/ Feb/ 2021



Course Code: CS3005	Course Name: Theory of Automata
Instructor Name / Names: Musawar Ali, Bakhtawer Abbasi	
Student Roll No:	Sections: A, B, C, D, E, F

Instructions

- Submit on time, solve by yourself.
- Follow the deadlines.
- Don't cheat and plagiarize.
- Submission method of assignment would be communicated by the course teacher.
- For any query you may contact your course teacher.

Find the regular expression and Deterministic Finite Automata for the following set of languages:

L7 = having exactly one pair of consecutive zeros.

L8 = having exactly one a.

L9 = strings containing no more than 3 a's

L10 = all strings that contain at least one occurrence of each symbol in alphabet

L11 = all strings ending in 0, 1.

L12 = all string not ending in 0, 1

L13 = All strings containing even number of zeros.

L14 = all string having at least two occurrences of substring 00.

L15 = all strings not containing 101.

L18 = The language of all strings containing exactly two a's.

L19 = The language of all strings containing at least two a's.

L20 = The language of all strings that do not end with ab.

L21 = The language of all strings that begin or end with aa or bb.

L22 = The language of all strings not containing the substring aa.

L23 = The language of all strings in which the number of a's is even.

L24 = The language of all strings in which both the number of a's and the number of b's are even.

L25 = The language of all strings containing no more than one occurrence of the string aa. (The aaa string contains two occurrences of aa.)

L26 = The language of all strings in which every a (if there are any) is a followed immediately by bb.

L27 = The language of all strings containing both bb and aa as substrings.

L28 = The language of all strings containing both aba and bab as substring.

Good Luck