STUDENT PORTFOLIO

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Semester: 5

Subject Title: 18CSC301T Formal Language and Automata

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Assignment
(Write about the assignment questions and how u solved differently)

1. Design a DFA That ends with abbaa

2. Convert to RE for the given DFA

3. PDA

4. Consider the following Micro English context free grammar S
   → (NP)(VP) (NP) → (Article)(Noun)(Object) (VP) → (Verb)(OptNP)(object)
   (OptNP)
   → e|(NP) (Object) → e|(Prep)(Article)(Noun) (Noun)
   → man|dog|girl|table (Article) → a|the (Prep) → of|with|from (Verb) →
   loves|likes|hates
   Remove the null production

5. Write the regular expression accepting the string over Σ (0, 1) which starts with two consecutive 0's and ends with two consecutive 1's.

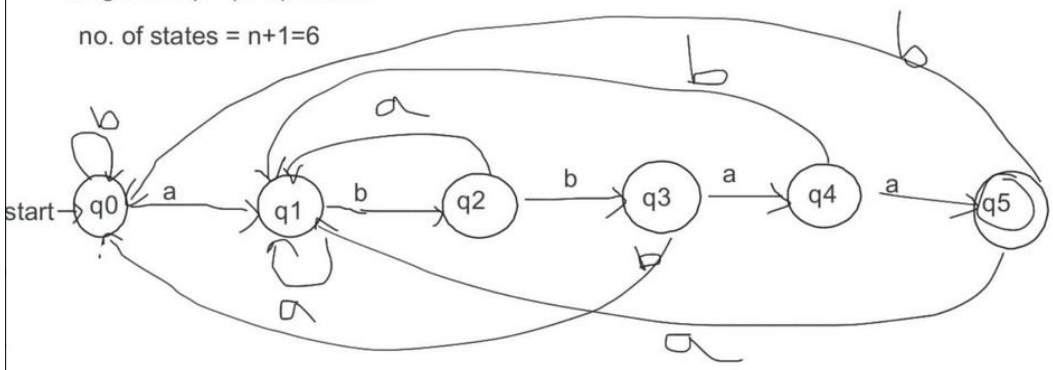
Assignment
(what is the most interesting part in the assignment)

The most interesting part of the assignment was to solve all the mathematical questions and how it helped me understand the subject.

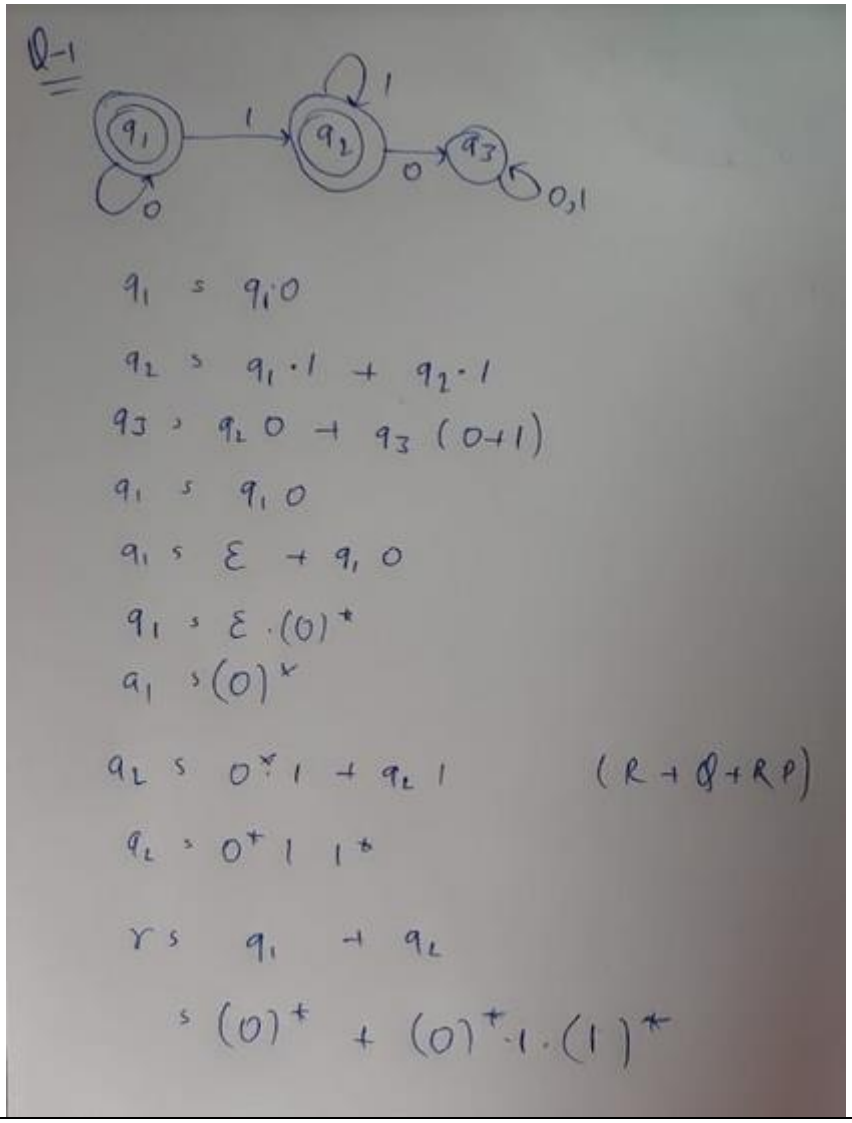
length of string (n) = 5 $\Sigma = \{a, b\}$ Q={q0,q1,q2,q3,q4,q5}

Regular exp= (a+b)*abbaa

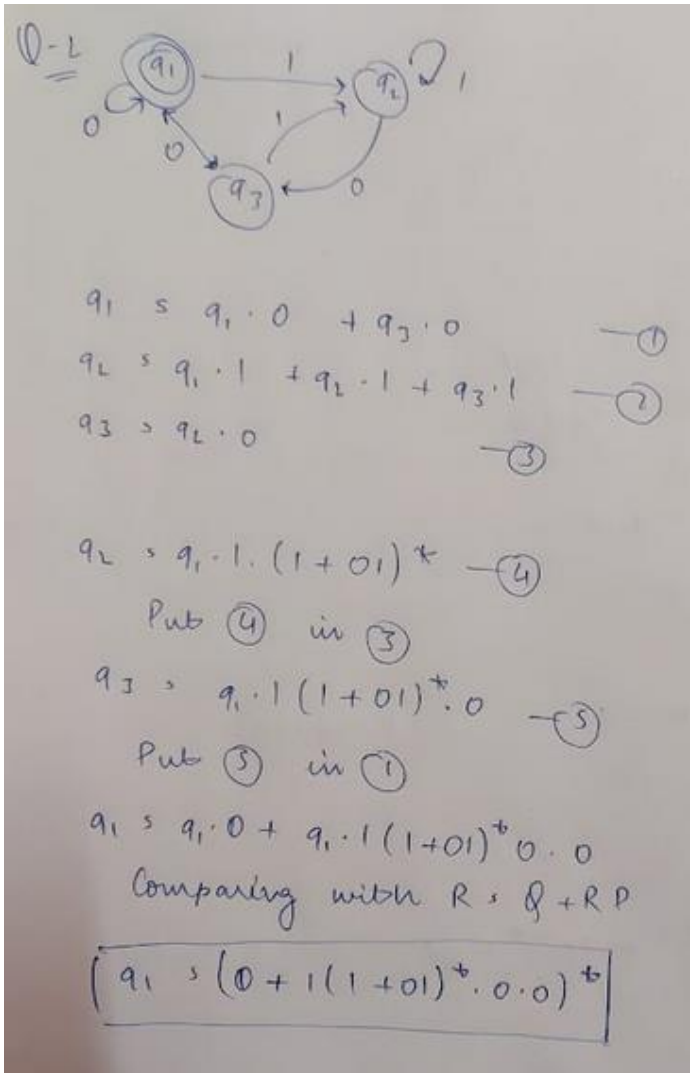
no. of states = n+1=6



D={6,2,12,q0,q5} δ= Q*Σ



Q-2



$q_1 = q_1 \cdot 0 + q_3 \cdot 0$ — (1)

$q_2 = q_1 \cdot 1 + q_2 \cdot 1 + q_3 \cdot 1$ — (2)

$q_3 = q_2 \cdot 0$ — (3)

$q_2 = q_1 \cdot 1 \cdot (1+01)^*$ — (4)

Put (4) in (3)

$q_3 = q_1 \cdot 1 (1+01)^* \cdot 0$ — (5)

Put (5) in (1)

$q_1 = q_1 \cdot 0 + q_1 \cdot 1 (1+01)^* 0 \cdot 0$

Comparing with $R = Q + RP$

$$\boxed{q_1 = (0 + 1(1+01)^* \cdot 0 \cdot 0)^*}$$

z0,E->z0, a,z0->az0, a,a->aa , b,a->a, a,a->E , E,z0->z0

(a) Remove Null prod.

Object → e , optNP → e

S → (NP)(VP)

NP → (Article)(Noun)

VP → (Verb)(object) | (Verb)(optNP) | Verb

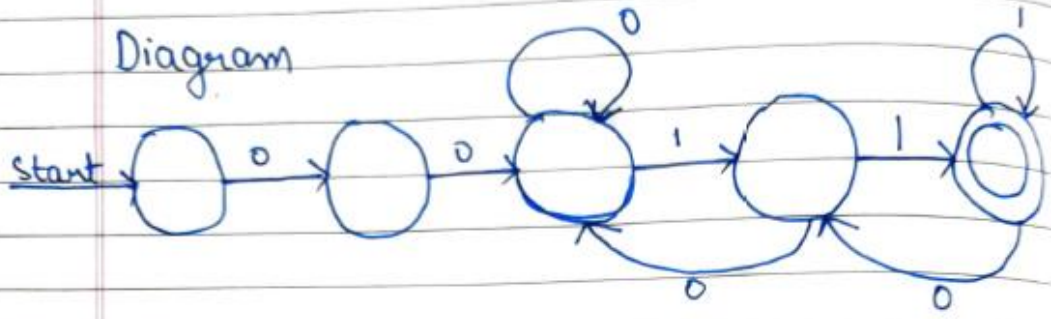
optNP → NP

object → Prep | Article | Noun

Noun
Article
Prep
Verb
} same

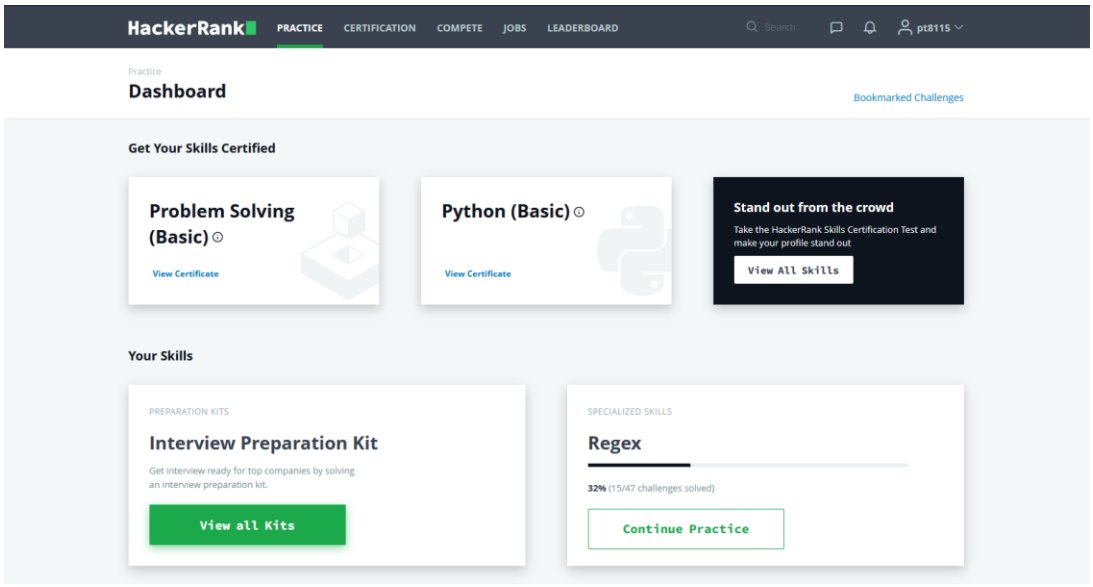
Q.1 RE = 00(0+1)* 11

Diagram



L = {0011, 00011, 00111, 000011, 000111, 001011, 001111 ..... }

Hacker rank Achievements



Signature

Note: Enclose the assignment and relevant certificates along with the profile