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Batch: B2	Date of Experiment:5/09/2020
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Practical 7

(PART – A)

Aim: To develop a turing machine.

Outcome: After successfully competing of this practical, students will be able to learn:

- What is turing machine?

- How it works?

- How to convert Turing machine to unrestricted grammar?

A.1 Reading

Read Page 70 to 102 of lab manual.

A.2 Tasks

1. Develop a single tape turing machine for the language $L = \{a^n b^n c^n\}$ for $n > 0$ using JFLAP tool.

2. Convert it to unrestricted grammar using JFLAP tool.

PART B

(PART B: TO BE COMPLETED BY STUDENTS)

(Students must submit the soft copy as per following segments within two hours of the practical. The soft copy must be uploaded on the Portal or emailed to the concerned lab in charge faculties at the end of the practical in case the there is no portal access available)
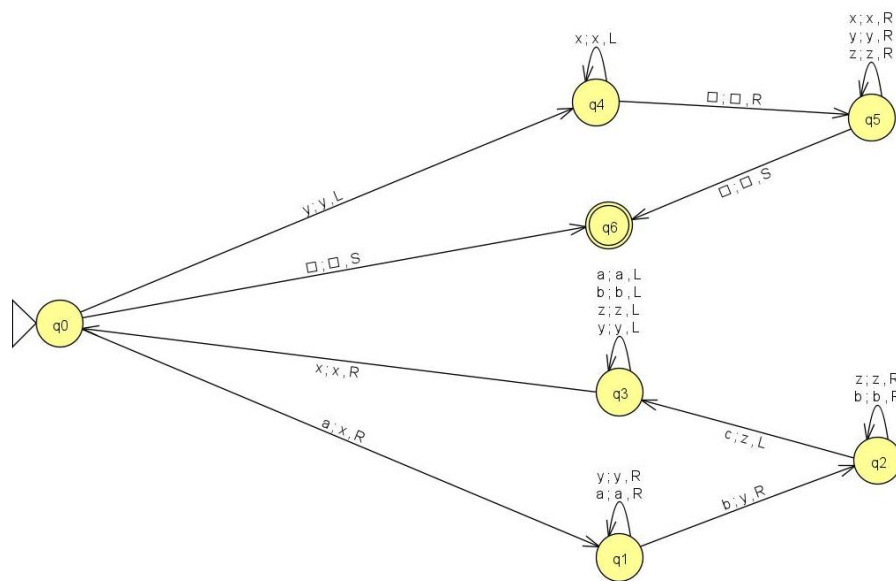
B.1 Output:

1. Write a procedure to generate the Turing machine using JFLAP tool.

- Start JFlap tool
- click on the Preferences in the menu
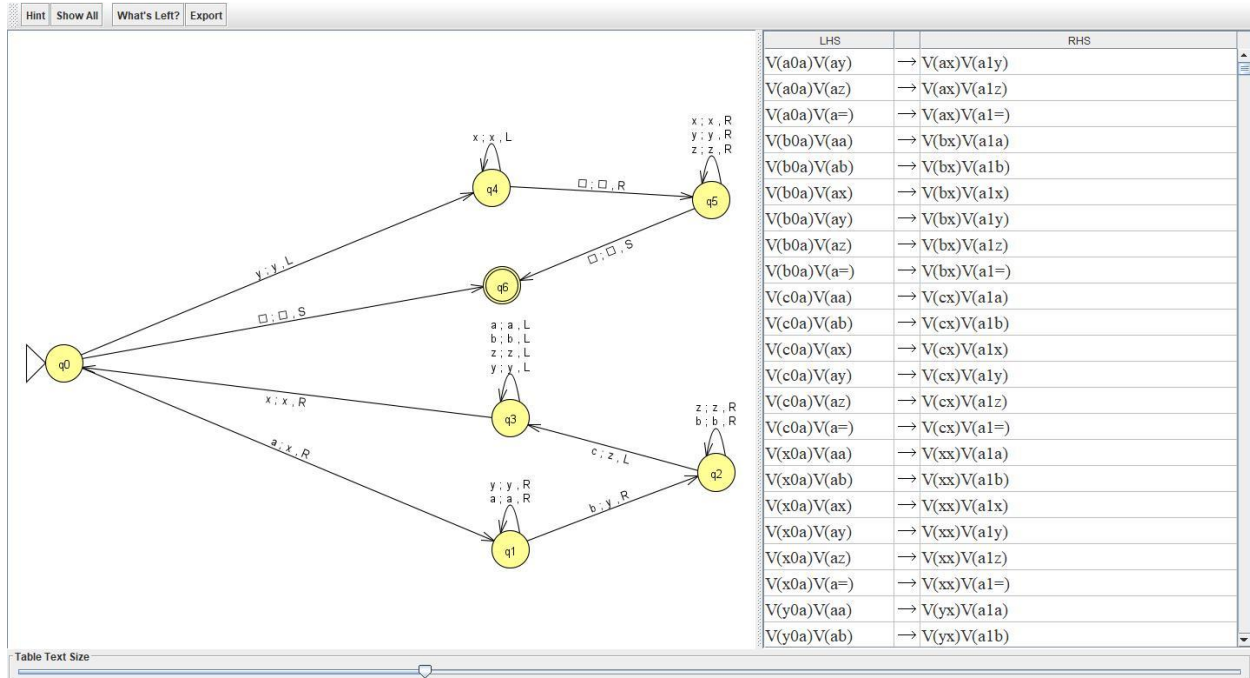- select Enable Transitions from Turing Machine Final States.
- Select Turing machine from menu
- Add states to the screen and set initial state and the final state

2. Write a procedure to convert turing machine to unrestricted grammar using the JFLAP tool.

- Go to convert option.
- Click on convert to unrestricted grammar.
- Click on show all.

B.2 Observations/Learning

LHS		RHS
V(a0a)V(ay)	→	V(ax)V(a1y)
V(a0a)V(az)	→	V(ax)V(a1z)
V(a0a)V(a=)	→	V(ax)V(a1=)
V(b0a)V(aa)	→	V(bx)V(a1a)
V(b0a)V(ab)	→	V(bx)V(a1b)
V(b0a)V(ax)	→	V(bx)V(a1x)
V(b0a)V(ay)	→	V(bx)V(a1y)
V(b0a)V(az)	→	V(bx)V(a1z)
V(b0a)V(a=)	→	V(bx)V(a1=)
V(c0a)V(aa)	→	V(cx)V(a1a)
V(c0a)V(ab)	→	V(cx)V(a1b)
V(c0a)V(ax)	→	V(cx)V(a1x)
V(c0a)V(ay)	→	V(cx)V(a1y)
V(c0a)V(az)	→	V(cx)V(a1z)
V(c0a)V(a=)	→	V(cx)V(a1=)
V(x0a)V(aa)	→	V(xx)V(a1a)
V(x0a)V(ab)	→	V(xx)V(a1b)
V(x0a)V(ax)	→	V(xx)V(a1x)
V(x0a)V(ay)	→	V(xx)V(a1y)
V(x0a)V(az)	→	V(xx)V(a1z)
V(x0a)V(a=)	→	V(xx)V(a1=)
V(y0a)V(aa)	→	V(yx)V(a1a)
V(y0a)V(ab)	→	V(yx)V(a1b)

B.3 Conclusion:

We were able to learn about Turing machine, how it works and how to convert them to unrestricted grammar