CS 419 Compiler Projects Form

1)Instructions to be Followed (for the Hard Copy):

I. Fill page **NO 4** with the required Fields:
- **I.** Project Idea: The **Idea** will be assigned to you .
- **II.** Team Members NO#: Number of team members **7**
- **III.** Table:
  - ID: Your FCIH ID.
  - Name: Your **Full Name** as registered on College's Database.
  - Level & Department: Your **(Current)** level and department.
  - Section(Day-from-to): Your Section Day and time slot.
  - Role: Your role in project (**Team leader** OR **Member**).
  - Fill Page **NO 5 & 6** with your (**Regular Expressions**, **Finite automata**, **Parse trees** and **abstract syntax tree**) respectively.

2) Minus Policies:

I. **Project Policy:** affects all projects members including team leader.
II. **Member Policy:** affects a member of project's members.

3) General Notes:

I. Total grade of Project is 15
II. **Deadline** to register yourself and your team on online form **Tuesday 05/04/2022 at 11:59 PM** after that **-2 Project Policy** will be applied**.**
III. Once you Registered, **NO modifications** will be done.
IV. Allowed only on registration for team in form, duplication will got **-2 Project Policy.**
V. Each group will be assigned **an Idea, ID and time slot** for **discussion**.
VI. Each team member and team leader in a team **must work in project's coding phase** (including implementation of **finite automata and parse trees**).

4) Discussion Notes:

I. **Copied Code** will be got ZERO Without Discussion.

II. By references to Section 3 (General notes) Point V , **-5 Member policy** will be applied to each team member (including team leader) who does not participate in project coding phase **as well as the team leader who does not report this case**.

III. Each team member must have **a complete knowledge** about the whole project

IV. **Evaluation** will be **Individual Evaluation** not project Evaluation.

V. **-2 Project Policy** will be applied in case of being late for assigned discussion time slot

VI. **NO discussion will be repeated under any circumstances.**

VII. At Discussion day, in case of offline discussions, each team must have **Hard Copy form** including (**Finite automata and parse trees of team's project**).

VIII. Discussion Day will be **sent later** .

5) Notes about Implementation:

I. **.Net or PHP** are only allowed.

II. The project must be a Web (use latest technologies).

III. Your code must be uploaded to github before discussion.

IV. **- 5 Project policy** will be applied in case of using **Built-in Method** within implementation of the scanner or parser, you must create your **own methods to match** for ex (your regular Expressions).

V. Each Project must contain a full functional editor (comment, uncomment, put red line under wrong words, auto complete, navigation to function or class, line NO).

VI. Each Project must contain **two buttons** , one button called "**Scan**" to run scanner and other called "**Parse**" to run parser –parser must take output of scanner to do it's task.

VII. Each project must contain a button named "**Browse**" that allows us to choose a **file from a disk** that allows us to parse or scan this file **Without Showing what is inside the file** and shows the output.

VIII. – 3 Project policy will be applied if the content of the file that is mentioned in point V is opened or viewed.

5) **Notes about Discussion Testing:**

- There will be two types of Testing :
  I. **White Box Testing:** This will be from **Editor**.
  II. **Black Box Testing:** This will be from "**Browse**" Button

Thanks,

CS 419 Compiler

Project Form

Project Idea:

………Project 1…………………………………………………………….

Team Members NO#: ……19……………………………..

ID	Name	Level& Department	Section(Day-from-to)	Role (Lead/Member)	Grade
20190 0477	عزت علي عبد الرحمن	3/cs		Leader	
20190 0353	سمير احمد محمد رضوان	3/cs		Member	
20190 0374	شوقي سيد شوقي	3/cs		Member	
20190 0482	علي احمد فتحي دسوقي	3/cs		Member	
20190 0501	عمر اسامه محمد صابر	3/cs		Member	
20190 0158	اكرم سمير سيد حسين	3/cs		Member	
20190 0476	عز الدين اشرف محمد ابراهيم	3/cs		Member	

Regular Expression, Finite automata and Conversion from RegX to NFA, NFA to DFA

Regular expressions:

Constants	([0-9]+(\.[0-9]+)?)
String	("(.*)")
Reserved Keywords	(Iow|SIow|Chlo|Chain|Iowf| SIowf |Worthless|LoopWhen|IterateWhen|Turnback|Stop|Loli|Include|if||else)
Multiple Comment Statement	((V\\$)(.*)(\\$V))
Single comment statment	(($$$)(.*)($$$))
Identifiers	([(_)a-zA-Z][(_)a-zA-Z0-9]*)
Arithmetic Operators	(\+|-|*|V)
relational Operators	(<|!=|>|==|<=|>=)
Logic Operator	(&&|\\\|||\~)
Assignment Op	(=)
Access operator	(->)
Braces	({|}|[|]|(|))
Quotation mark	("|')

Dfa:

Assignment Operator

q0 ──── = ───→ ((q1))

Access Operator

a ── - ──→ b ── > ──→ ((c))

Braces

q0 ── [},{,[,],] ──→ ((q1))
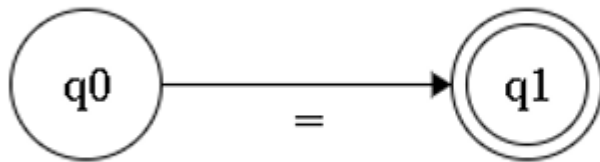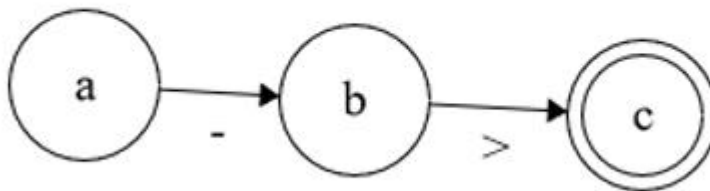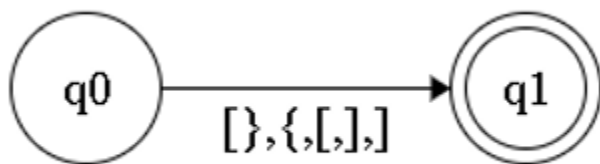
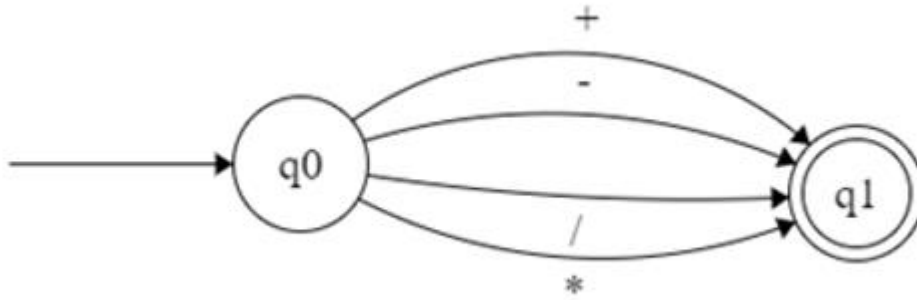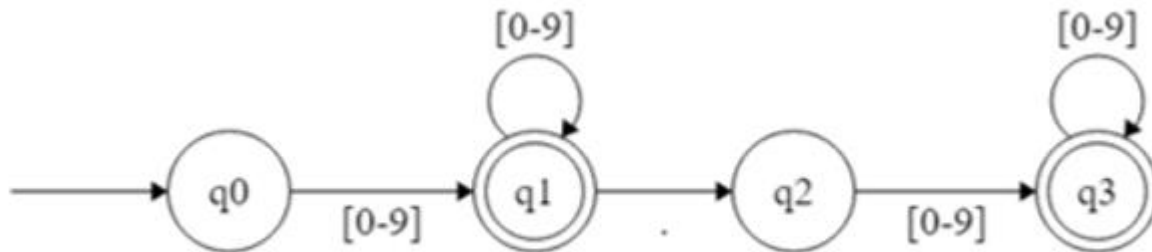# Logical Operator
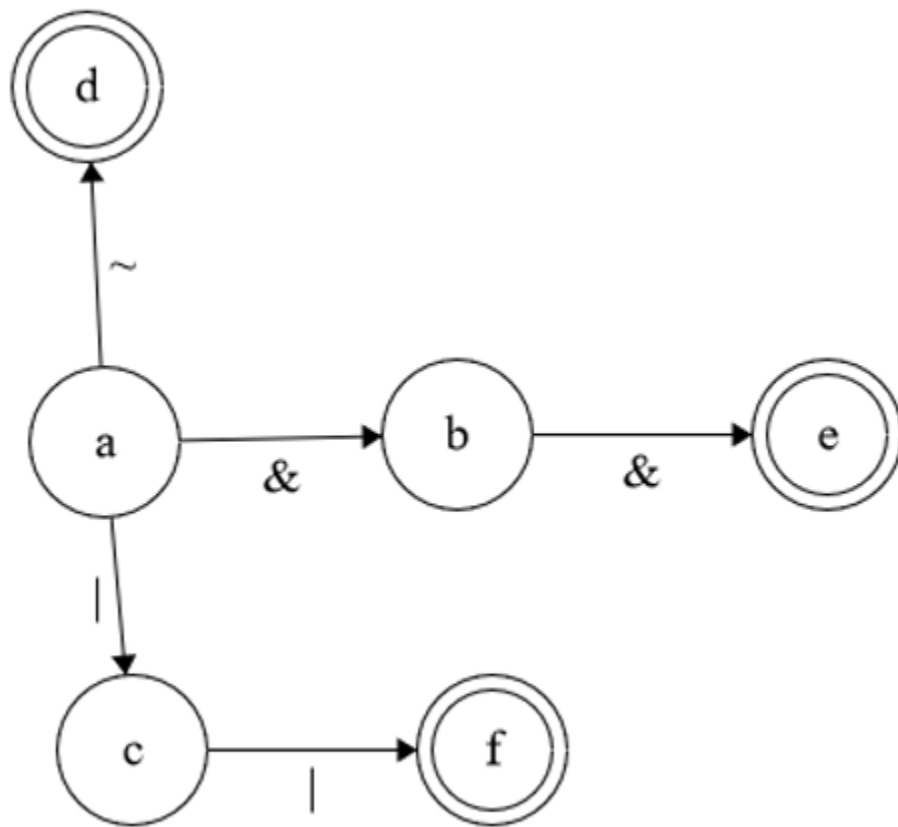
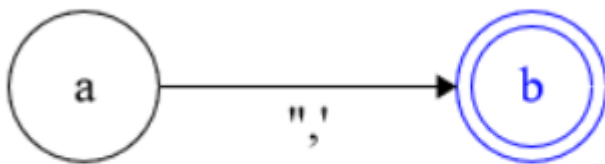
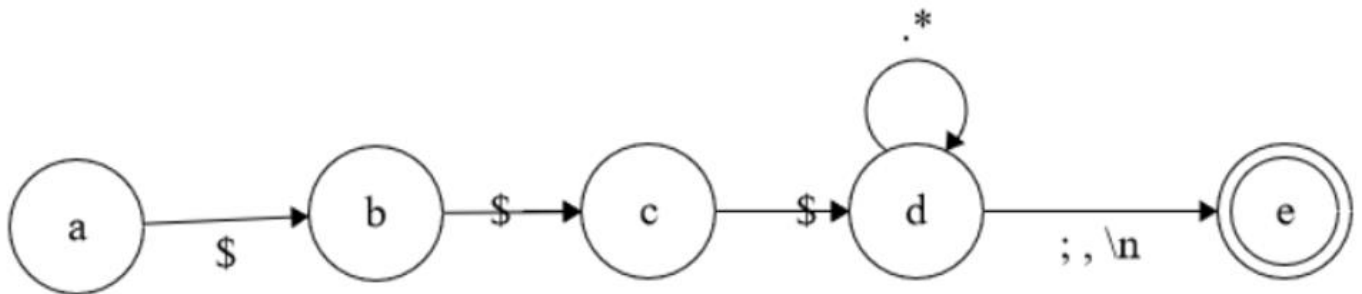# Relational Operator
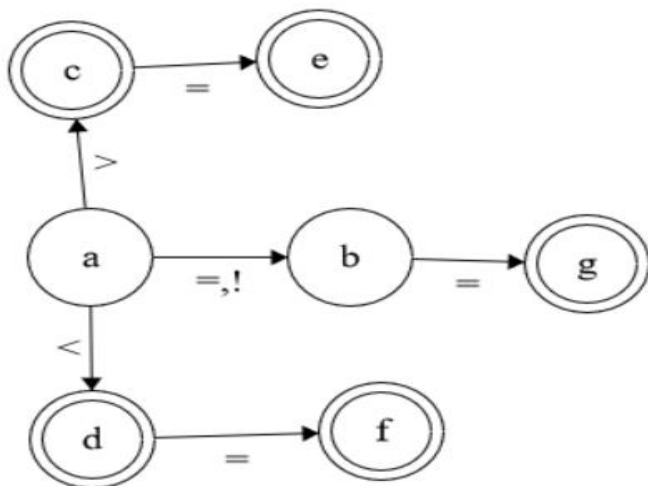
Arthimatic operations
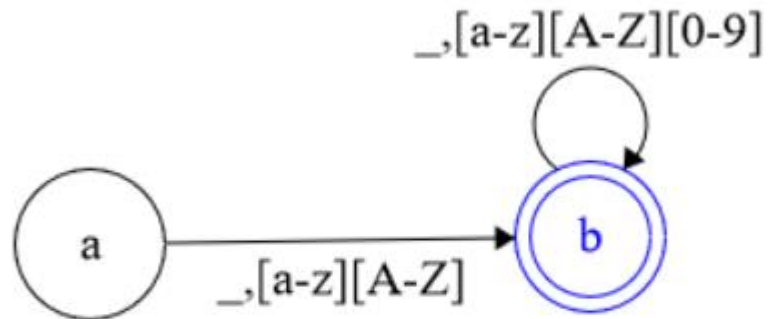

Constants(Numbers)

Quotation mark

Multiple line comment

State diagram for multiple line comment with states a, b, c, d, e. Transitions: a → b on /, b → c on $, c → c on .* (self-loop), c → d on $, d → e on /. State e is an accepting state.

Single line comment

State diagram for single line comment with states a, b, c, d, e. Transitions: a → b on $, b → c on $, c → d on $, d → d on .* (self-loop), d → e on ; , \n. State e is an accepting state.
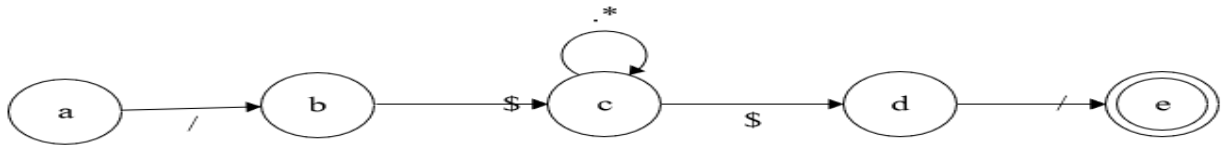
Identifiers

Reserved Keywords

A state-transition diagram (trie automaton):

- A —L→ E
- A —S→ F
- A —T→ G
- A —W, L→ Bc
- A —L→ Bg

- E —o→ Ag —o→ Ah —p→ Ai —w→ Ag —h→ Ak —e→ Al —n→ Am

- F —l→ An —o→ Ao —w→ Ap
- Ao —w→ Aq —f→ Ar
- F —t→ As —o→ At —p→ Au

- G —u→ Av —r→ Aw —n→ Ax —b→ Ay —a→ Az —c→ Ba —k→ Bb

- Bc —o→ Bd —l→ Be —i→ Bf

- Bg —o→ Bh —r→ Bi —t→ Bj —h→ Bk —l→ Bl —e→ Bm —s→ Bn
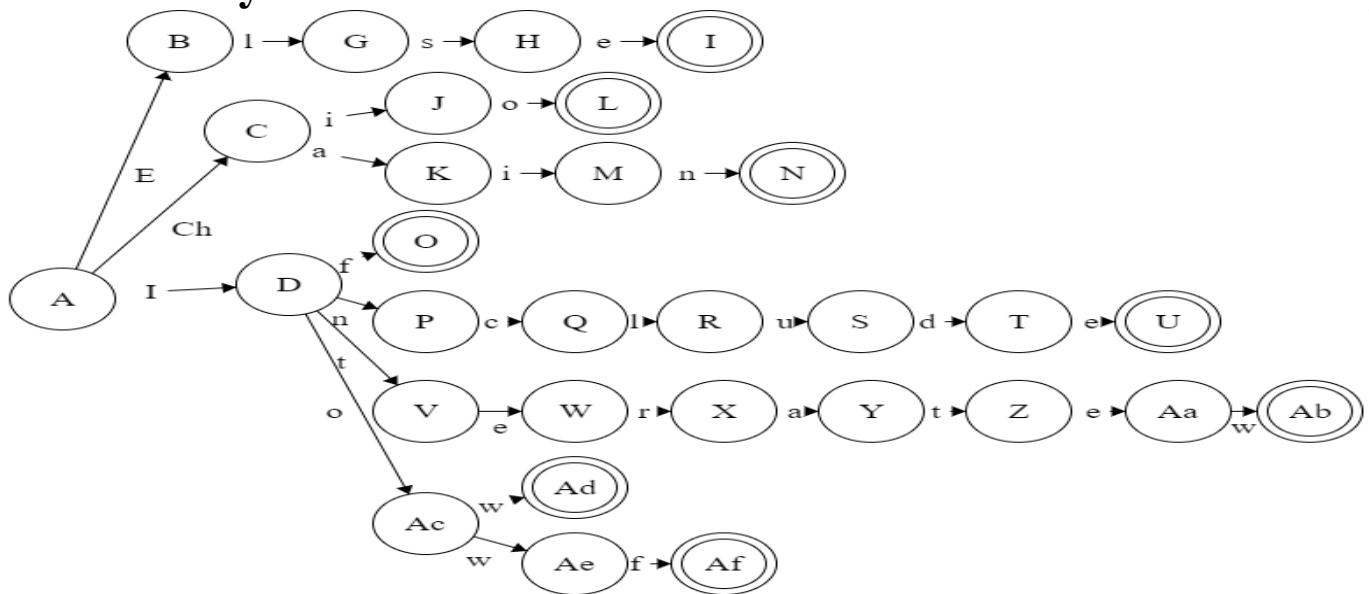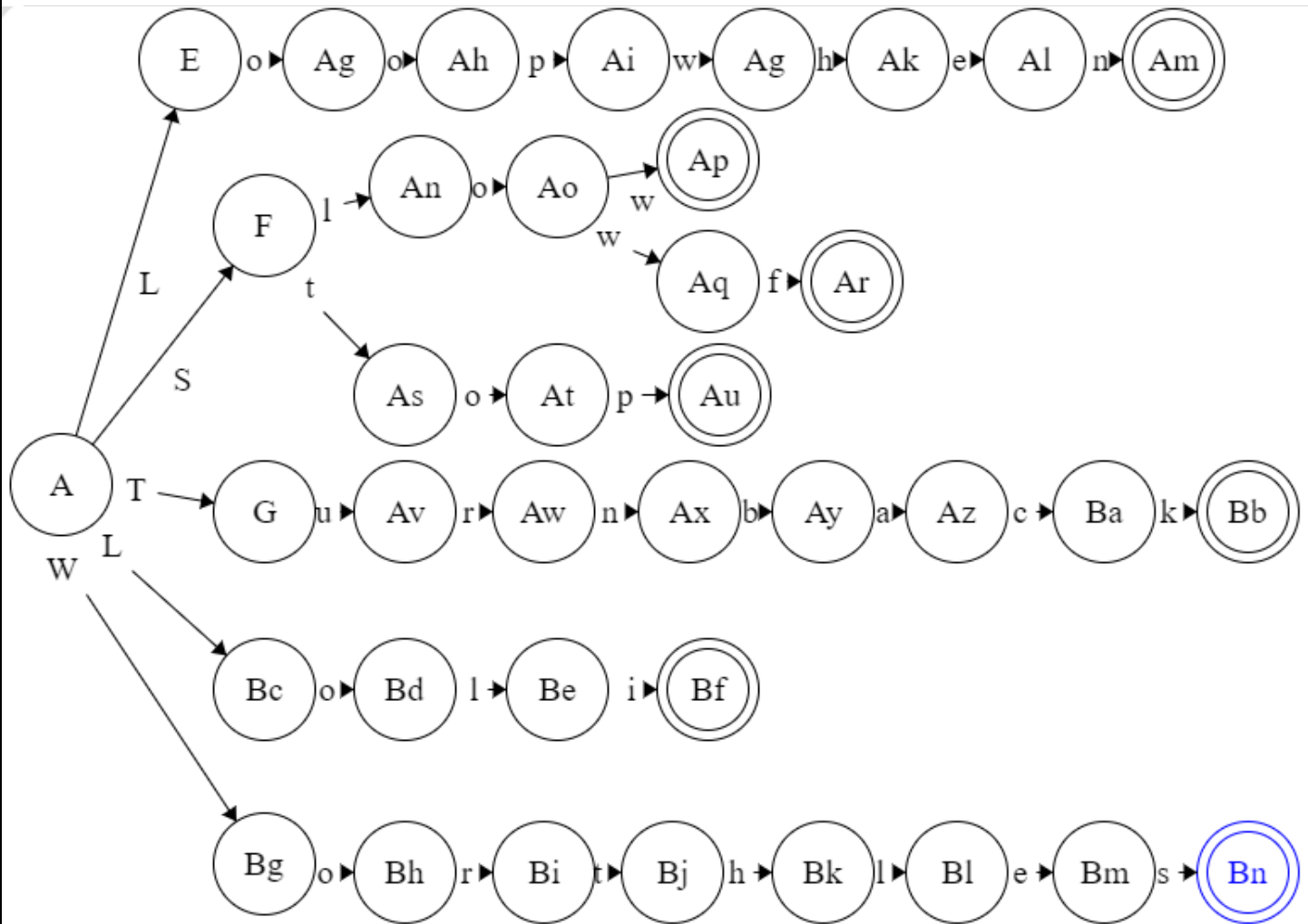
Parse tree and Abstract syntax tree