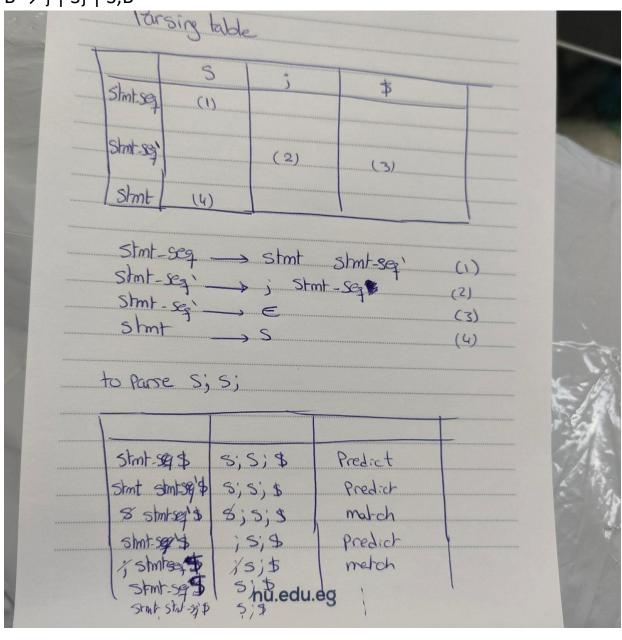
CSCI415 Name :	Compiler Design ID:	Fall2022
Nile University جامعة النيل	Quiz 2	
1) Construct a gramm	iar that represents:	(2 points)
a. The language Ex: $011110$ , $3$ Answer: $S \rightarrow 0S0 \mid 1S1$		(1point)
	kpression : (0   1) *11	(1point)
c. The language o	of all Non palindromes over {0, 1}*	
Answer :		
$S \rightarrow 0S0 \mid 1S1$	L D	
$ extstyle D  ightarrow 1 A0 \mid 0 A$	<b>1</b>	
$A \rightarrow \epsilon \mid 0A \mid 1$	1A	

2) For the following grammar construct the LL(1) parsing table and parse the input: {stmt;}. (4.points)

 $P \rightarrow S$ 

 $S \rightarrow stmt \mid \{B\}$ 

 $B \rightarrow \} | S\} | S;B$ 



3) Consider the following grammar

(4 points)

$$P \rightarrow P + Q \mid Q$$

$$Q \to Q \; d \; F \; | \; F$$

$$F \rightarrow (P) \mid id$$

a) Remove the left-Recursion

b) Get the First and Follow sets

(2 points)
(2 points)

## Answer:

$$P \rightarrow Q P'$$

$$P' \rightarrow + Q P' \mid \epsilon$$

$$Q \rightarrow F Q'$$

$$Q' \to d \; F \; Q' \; | \; \epsilon$$

$$F \rightarrow (P) \mid id$$

Non-Terminal	First	Follow
P	( , id	\$,)
P'	+,ε	\$,)
Q	( , id	\$,),+
Q'	<b>d</b> , ε	\$,),+
F	( , id	\$,),d,+

1) Consider the following grammar

(4 points)

$$S \rightarrow aAd \mid aB$$

$$A \rightarrow a \mid ab$$

$$B \rightarrow ccd \mid ddc$$

c) Remove the left factoring

d) Get the First and Follow sets

(2 points)
(2 points)

## Answer:

$$S \rightarrow a S'$$

$$S' \rightarrow Ad \mid B$$

$$A \rightarrow aA'$$

$$A' \rightarrow b \mid \epsilon$$

$$B \rightarrow ccd \mid ddc$$

Non-Terminal	First	Follow
S	a	\$
S'	a,c,d	\$
Α	A	d
A'	<b>b</b> , ε	d
В	c,d	\$