Lab Practice Session # 5

Course Title: Compiler Construction Lab (CSTE-4106)

1. Write a YACC program to recognize string with grammar $\{a^n b^n \mid n \geq 0\}$

Sample Input	**Sample Output**
Enter a string: aab	Invalid string.
Enter a string: aaabbb	Valid string.

2. Write a YACC program for implementing a calculator for computing the given expression

Sample Input	**Sample Output**
Enter your expression: 2+(3*4)	Result: 14 Expression is Valid.
Enter your expression: 4=0	Expression is Invalid.

Assignment (Report #4)

1. Write a YACC program to convert binary number to decimal.
2. Write a YACC program to implement a scientific calculator.
3. Write a C program to Design SLR Parser.

Input:

STATE	ACTION						GOTO		
	id	+	*	(	)	$	E	T	F
0	S_5			S_4			1	2	3
1		S_6				accept			
2		r_2	S_7		r_2	r_2			
3		r_4	r_4		r_4	r_4			
4	S_5			S_4			8	2	3
5		r_6	r_6		r_6	r_6			
6	S_5			S_4				9	3
7	S_5			S_4					10
8		S_6			S_{11}				
9		r_1	S_7		r_1	r_1			
10		r_3	r_3		r_3	r_3			
11		r_5	r_5		r_5	r_5			

Output:

STACK	INPUT	ACTION
(1) 0	**id** * **id** + **id**$	shift
(2) 0 **id** 5	* **id** + **id**$	reduced by $F \rightarrow$ **id**
(3) 0 F 3	* **id** + **id**$	reduced by $T \rightarrow F$
(4) 0 T 2	* **id** + **id**$	shift
(5) 0 T 2 * 7	**id** + **id**$	shift
(6) 0 T 2 * 7 **id** 5	+ **id**$	reduced by $F \rightarrow$ **id**
(7) 0 T 2 * 7 F 10	+ **id**$	reduced by $T \rightarrow T*F$
(8) 0 T 2	+ **id**$	reduced by $E \rightarrow T$
(9) 0 E 1	+ **id**$	shift
(10) 0 E 1 + 6	**id**$	shift
(11) 0 E 1 + 6 **id** 5	$	reduced by $F \rightarrow$ **id**
(12) 0 E 1 + 6 F 3	$	reduced by $T \rightarrow F$
(13) 0 E 1 + 6 T 9	$	$E \rightarrow E + T$
(14) 0 E 1	$	accept

Submission Deadline: 20/10/2024