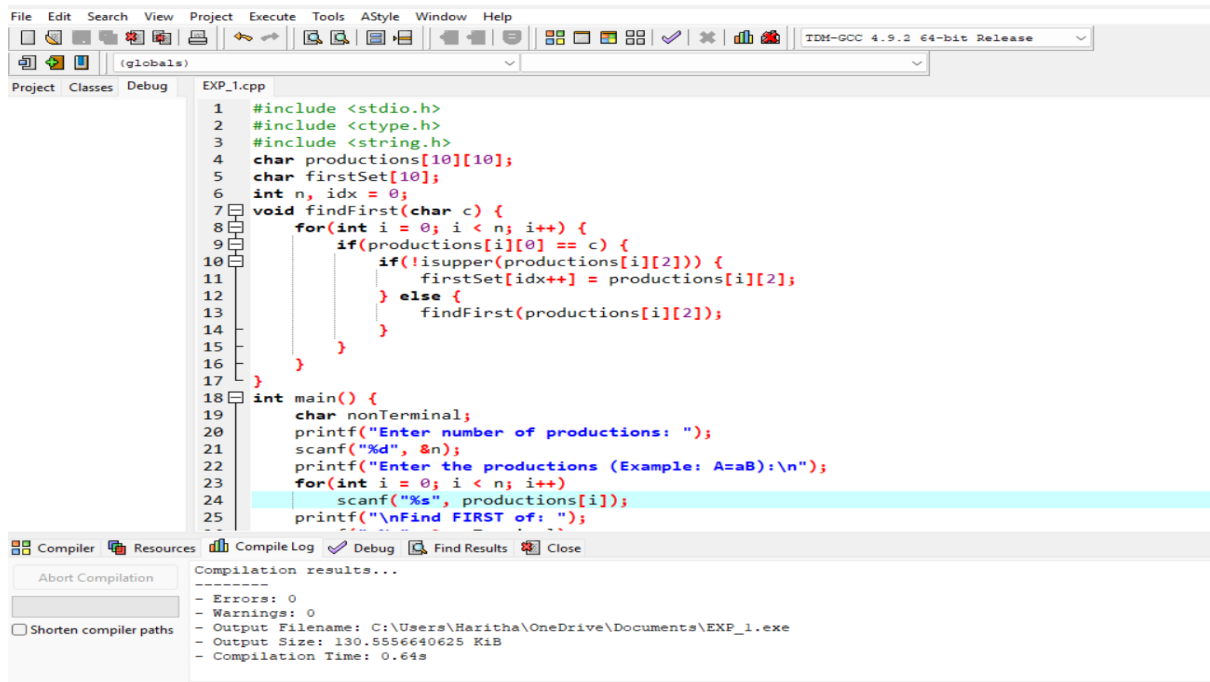


# EXPERIMENT-7

## AIM:

Write a C program to find FIRST( ) - predictive parser for the given grammar

## PROGRAM:



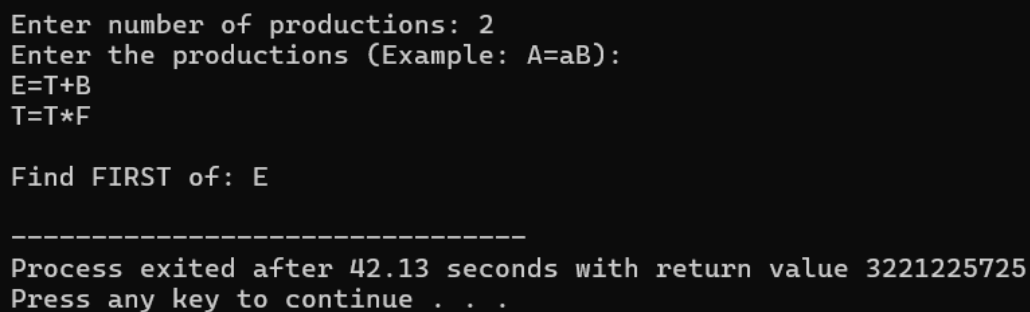
The screenshot shows a C program in a code editor (TDM-GCC 4.9.2 64-bit Release) and its compilation results. The program is named EXP\_1.cpp and is designed to find the FIRST set for a given grammar. It includes headers for stdio.h, ctype.h, and string.h. It defines a character array 'productions' of size 10x10 and a character array 'firstSet' of size 10. It takes an integer 'n' and a character 'c' as input. The 'findFirst' function recursively finds the FIRST set for a given character 'c'. The 'main' function prompts the user to enter the number of productions and the productions themselves. It then calls 'findFirst' to find the FIRST set for the first production.

```
1 #include <stdio.h>
2 #include <ctype.h>
3 #include <string.h>
4 char productions[10][10];
5 char firstSet[10];
6 int n, idx = 0;
7 void findFirst(char c) {
8     for(int i = 0; i < n; i++) {
9         if(productions[i][0] == c) {
10             if(!isupper(productions[i][2])) {
11                 firstSet[idx++] = productions[i][2];
12             } else {
13                 findFirst(productions[i][2]);
14             }
15         }
16     }
17 }
18 int main() {
19     char nonTerminal;
20     printf("Enter number of productions: ");
21     scanf("%d", &n);
22     printf("Enter the productions (Example: A=aB):\n");
23     for(int i = 0; i < n; i++) {
24         scanf("%s", productions[i]);
25         printf("\nFind FIRST of: ");
26     }
27 }
```

Compilation results...

- Errors: 0
- Warnings: 0
- Output Filename: C:\Users\Haritha\OneDrive\Documents\EXP\_1.exe
- Output Size: 130.5556640625 KiB
- Compilation Time: 0.64s

## OUTPUT:



The screenshot shows the output of the program in a terminal window. The user enters the number of productions as 2 and the productions as E=T+B and T=T\*F. The program then finds the FIRST set for the first production, which is E. The output is displayed as 'Find FIRST of: E'. The program then exits after 42.13 seconds with a return value of 3221225725.

```
Enter number of productions: 2
Enter the productions (Example: A=aB):
E=T+B
T=T*F

Find FIRST of: E

-----
Process exited after 42.13 seconds with return value 3221225725
Press any key to continue . . .
```