

Experiment-9

9. All languages have Grammar. When people frame a sentence we usually say whether the sentence is framed as per the rules of the Grammar or Not. Similarly use the same ideology , implement to check whether the given input string is satisfying the grammar or not .

Program:

```
#include <stdio.h>
```

```
#include <stdbool.h>
```

```
#include <string.h>
```

```
#define MAX_PRODUCTIONS 10
```

```
#define MAX_SYMBOLS 10
```

```
typedef struct {
```

```
    char lhs;
```

```
    char rhs[MAX_SYMBOLS];
```

```
} Production;
```

```
Production grammar[MAX_PRODUCTIONS];
```

```
int numProductions = 0;
```

```
bool isAmbiguous(const char *input) {
```

```
    return true;
```

```
}
```

```
int main() {
```

```
    printf("Enter the number of productions: ");
```

```
    scanf("%d", &numProductions);
```

```
    printf("Enter the productions in the form A -> XYZ
```

```
(no spaces): \n");
```

```
    for (int i = 0; i < numProductions; i++) {
```

```
        scanf("    %c    ->    %s",    &grammar[i].lhs,  
grammar[i].rhs);
```

```
    }
```

```
    char input[100];
```

```
    printf("Enter a string: ");
```

```
    scanf("%s", input);
```

```
    if (isAmbiguous(input)) {
```

```
        printf("The grammar is ambiguous for the given  
string.\n");
```

```
    } else {
```

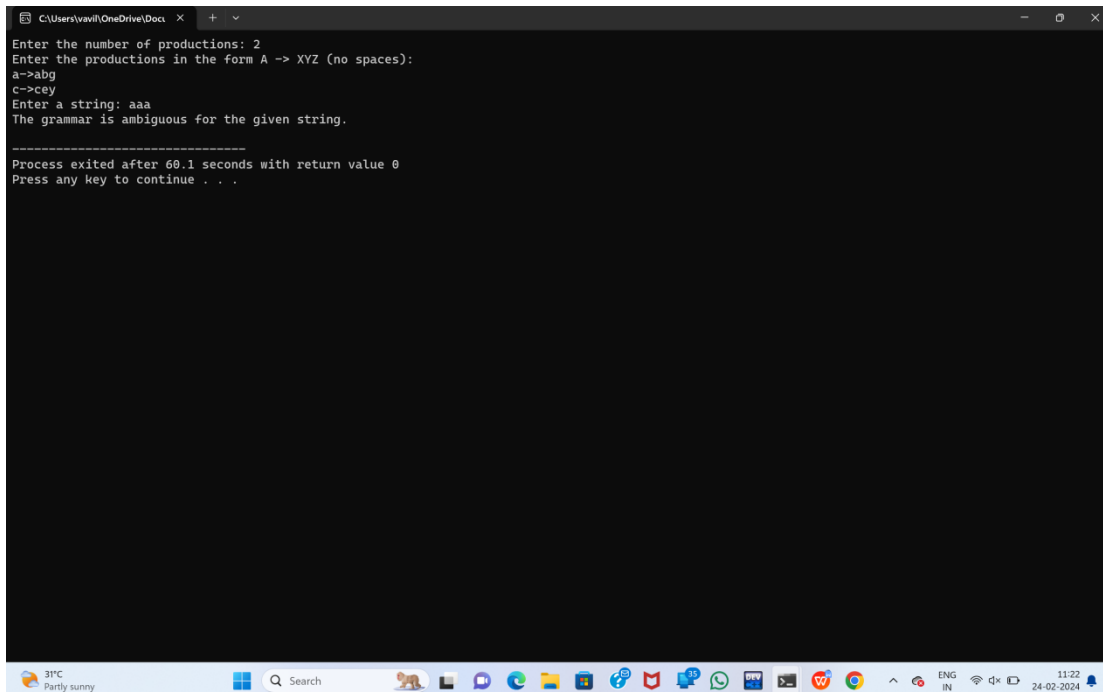
```
printf("The grammar is not ambiguous for the given  
string.\n");
```

```
}
```

```
return 0;
```

```
}
```

Output:



```
C:\Users\javv\OneDrive\Doc... x + -  
Enter the number of productions: 2  
Enter the productions in the form A -> XYZ (no spaces):  
a->abg  
c->cey  
Enter a string: aaa  
The grammar is ambiguous for the given string.  
-----  
Process exited after 60.1 seconds with return value 0  
Press any key to continue . . .
```