

## ASSIGNMENT 4: Recursive Descent Parser using C

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### Code:

```
#include<stdio.h>
#include<stdlib.h>
void E();
void Eprime();
void T();
void Tprime();
void F();
char s;
int pos = 0;
void parse(char c)
{
    if(s == c) {
        s = getchar();
    }
    else {
        printf("Error at position %d!\n", pos);
        exit(0);
    }
}
void E()
{
    T();
    Eprime();
}
void Eprime()
{
    if(s == '+') {
        pos++;
        parse('+');
        T();
        Eprime();
    }
}
void T()
{
    F();
    Tprime();
}
void Tprime()
{
    if(s == '*') {
        pos++;
        parse('*');
        F();
        Tprime();
    }
}
```

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```
    }  
}  
void F()  
{  
    if(s == '(') {  
        pos++;  
        parse('(');  
        E();  
        pos++;  
        parse(')');  
    }  
    else if(s == 'i') {  
        pos++;  
        parse('i');  
        parse('d');  
    }  
    else {  
        printf("Error at position %d!\n", pos);  
        exit(0);  
    }  
}  
int main()  
{  
    printf("Enter string to parse: ");  
    s = getchar();  
    E();  
    printf("Parse Success!\n");  
    return 0;  
}
```

### OUTPUT:

```
seccon@ubuntu:~/Desktop$ gcc -o a dp.c  
seccon@ubuntu:~/Desktop$ ./a  
  
Enter a string to parse: ((i+i)  
  
Error parsing at Position 6!  
seccon@ubuntu:~/Desktop$ gcc -o a dp.c  
seccon@ubuntu:~/Desktop$ ./a  
  
Enter a string to parse: ((i+i))  
  
Parse Success!  
seccon@ubuntu:~/Desktop$ █
```

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