PRACTICAL-10

AIM: Write a program to implement Recursive Decent Parser for following grammar and check given input strings accepted by grammar or not?

expr → digit rest

rest → +digit rest |- digit rest| Є

digit → 0 | 1 | 2 | 3 |…| 9

Code:

```
#include<stdio.h>
#include<ctype.h>
#include<string.h>
void Tprime();
void Eprime();
void E();
void check();
void T();
void dollar();
char expression[10];
int count, flag;
int main() {
count = 0;
flag = 0;
printf("\nEnter an Algebraic Expression:\t");
scanf("%s", expression);
E();
if ((strlen(expression) == count) && (flag == 0)) {
printf("\nThe Expression %s is Valid\n", expression);
} else {
printf("\nThe Expression %s is Invalid\n", expression);
}
}
void E() {
```

```
T();
Eprime();
dollar();
}
void T() {
check();
Tprime();
}
void Tprime() {
if (expression[count] == '-') {
count++;
check();
Tprime();
}
}
void check() {
if (isalnum(expression[count])) {
count++;
} else {
flag = 1;
}
}
void Eprime() {
if (expression[count] == '+') {
count++;
T();
Eprime();
}
}
void dollar() {
if (expression[count] == '$') count++;
}
```

Output:

```
Enter an Algebraic Expression:  10*2-@

The Expression 10*2-@ is Invalid


...Program finished with exit code 0
Press ENTER to exit console.
```

```
Enter an Algebraic Expression:  7+2-1$

The Expression 7+2-1$ is Valid


...Program finished with exit code 0
Press ENTER to exit console.
```