## Program Code

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

struct statement
{
    char lhs[2];
    char rhs[4];
};

void move(char a, char b)
{
    printf("MOV AX, %c\n", b);
    printf("MOV %c, AX\n", a);
}

void add(char a, char b, char c)
{
    printf("MOV AX, %c\n", b);
    printf("MOV BX, %c\n", c);
    printf("ADD AX, BX\n");
    printf("MOV %c, AX\n", a);
}

void sub(char a, char b, char c)
{
    printf("MOV AX, %c\n", b);
    printf("MOV BX, %c\n", c);
    printf("SUB AX, BX\n");
    printf("MOV %c, AX\n", a);
}

void mul(char a, char b, char c)
{
    printf("MOV AX, %c\n", b);
    printf("MOV BX, %c\n", c);
    printf("MUL AX, BX\n");
    printf("MOV %c, AX\n", a);
}

void div(char a, char b, char c)
{
    printf("MOV AX, %c\n", b);
    printf("MOV BX, %c\n", c);
    printf("DIV AX, BX\n");
    printf("MOV %c, AX\n", a);
}

void main()
{
    int n;

    printf("Enter the number of statements in Intermediate Code: ");
    scanf("%d", &n);
    struct statement statements[n];

    printf("Enter the statements:\n");
    for(int i = 0; i < n; i++)
```

```c
    {
        scanf(" %s, %s", statements[i].lhs, statements[i].rhs);
    }

    printf("\nGenerated Code:\n");
    for(int i = 0; i < n; i++)
    {
        if(strlen(statements[i].rhs) == 1)
        {
            move(statements[i].lhs[0], statements[i].rhs[0]);
        }
        else
        {
            switch(statements[i].rhs[1])
            {
            case '+':
                add(statements[i].lhs[0], statements[i].rhs[0],
statements[i].rhs[2]);
                break;
            case '-':
                sub(statements[i].lhs[0], statements[i].rhs[0],
statements[i].rhs[2]);
                break;
            case '*':
                mul(statements[i].lhs[0], statements[i].rhs[0],
statements[i].rhs[2]);
                break;
            case '/':
                div(statements[i].lhs[0], statements[i].rhs[0],
statements[i].rhs[2]);
                break;
            default:
                printf("Invalid statement!\n");
                return;
            }
        }
    }
}
```

## Output

```
students@pgcse-HP-280-G1-MT:~/Desktop/R7_66/R7_66/3/11$ ./11
Enter the number of statements in Intermediate Code: 5
Enter the statements:
a=5
b=3
c=a+b
d=c/a
e=d

Generated Code:
MOV AX, 5
MOV a, AX
MOV AX, 3
MOV b, AX
MOV AX, a
MOV BX, b
ADD AX, BX
MOV c, AX
MOV AX, c
MOV BX, a
DIV AX, BX
MOV d, AX
MOV AX, d
MOV e, AX
```