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**Course Code and Name:** 2CS701 Compiler Construction

**Practical No: 6**

**AIM :** To generate Three Address code for assignment statement

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

int tempCount = 0;

char* newTemp() {
    static char tempVar[5];
    sprintf(tempVar, "t%d", tempCount++);
    return tempVar;
}

void generateTAC(char* statement) {
    char lhs[10], op[3], rhs[10], op1[10], op2[10];

    if (strstr(statement, "+=") || strstr(statement, "-=") ||
        strstr(statement, "*=") || strstr(statement, "/=")) {
        sscanf(statement, "%s %s %s", lhs, op, rhs);
        char operation = op[0];
        char* temp = newTemp();

        printf("%s = %s %c %s\n", temp, lhs, operation, rhs);
        printf("%s = %s\n", lhs, temp);
    }
    else if (sscanf(statement, "%s = %s %s %s", lhs, op1, op, op2) ==
4) {
        char* temp = newTemp();

        printf("%s = %s %s %s\n", temp, op1, op, op2);
        printf("%s = %s\n", lhs, temp);
    }
    else if (sscanf(statement, "%s = %s", lhs, rhs) == 2) {
        printf("%s = %s\n", lhs, rhs);
    }
    else {
        printf("Invalid statement format.\n");
    }
}
```

```

    }
}

int main() {
    char statement[30];

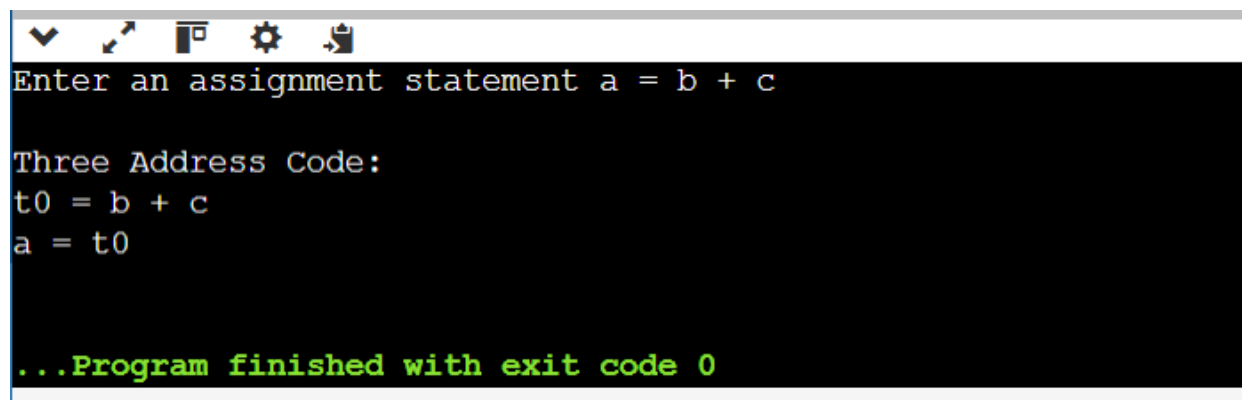
    printf("Enter an assignment statement ");
    fgets(statement, sizeof(statement), stdin);
    statement[strcspn(statement, "\n")] = 0;

    printf("\nThree Address Code:\n");
    generateTAC(statement);

    return 0;
}

```

## OUTPUT



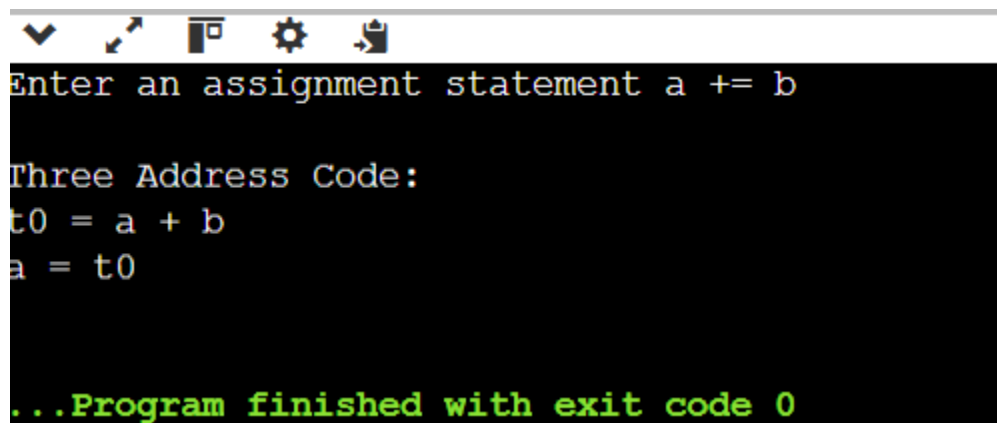
```

Enter an assignment statement a = b + c

Three Address Code:
t0 = b + c
a = t0

...Program finished with exit code 0

```



```

Enter an assignment statement a += b

Three Address Code:
t0 = a + b
a = t0

...Program finished with exit code 0

```