

SSN COLLEGE OF ENGINEERING, KALAVAKKAM
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
UCS 2702 - Compiler Lab
Programming Assignment-8 Implementation of code generation

Consider the given sequence of three address code as input and generate the output in the form of assembly code written using the instruction set of 8086.

Your code generator supports assignment statement, arithmetic operators, relational operators, iterative constructs, and conditional constructs.

The source program, generated TAC and the assembly code is shown below.

Source Program:

```
x=0;
for(i=1;i<=10;i++)
x=x+1
```

Three address code:

```
    x=0
    i=1
L3: if i<=10 goto L1
    goto L2
L1: t1=x+i
    x=t1
    t2=i+1
    i=t2
    goto L3
L2:
```

Assembly code generated would be

```
    MOV  R0,#0

    MOV  R1,#1

    MOV  R2,#10

L3: CMP  R1, R2

    JLE  L1

    JMP  L2

L1: ADD  R0, R1

    MOV  R3, #1

    ADD  R1, R3

    JMP  L3

L2:
```