**PRACTICAL # 13**

**OBJECT:**

CFG of while loop statement

**THEORY:**

Loops are used to repeat a block of code. There are different types of loops in a programming language. In this lab, we will only discuss while loop CFG and implementation. In this loop, we will design CFG for while loop.

The syntax of while loop is:

*while (condition) {*

*// body of the loop*

*}*

CFG for while loop:

*<Wh\_st> -> while (<Cond>) <Lp\_body>*

*<Cond> -> <ID\_Const> <Rel\_Exp>*

*<ID\_Const> -> ID | <Const>*

*<Rel\_Exp> -> Rel\_Op <ID\_Const> | ε*

*<Lp\_body> -> ; | <S\_st> | {<M\_st>}*

*<S\_st> -> <Wh\_st> | <DoWh\_st> | <If\_st> | <For\_st> | <Dec\_st> | return<Const> | break; | continue;*

*<M\_st> -> <S\_st> <M\_st> | ε*

**ACTIVITIES**

**Activity 1**

Design while loop statement CFG of your own language.

**Activity 2**

Design for loop statement CFG of your own language.

**REVIEW QUESTIONS**

1. What purpose do loop statement serves?
2. What is an infinite loop?
3. How is a loop statement terminated?