Experiment 3:

Obj: Find the coverage and Def-use-graph of the following program using JaButi Tool:

3.1: Write a program for a calculator and find the test case and coverage and Def-use-graph

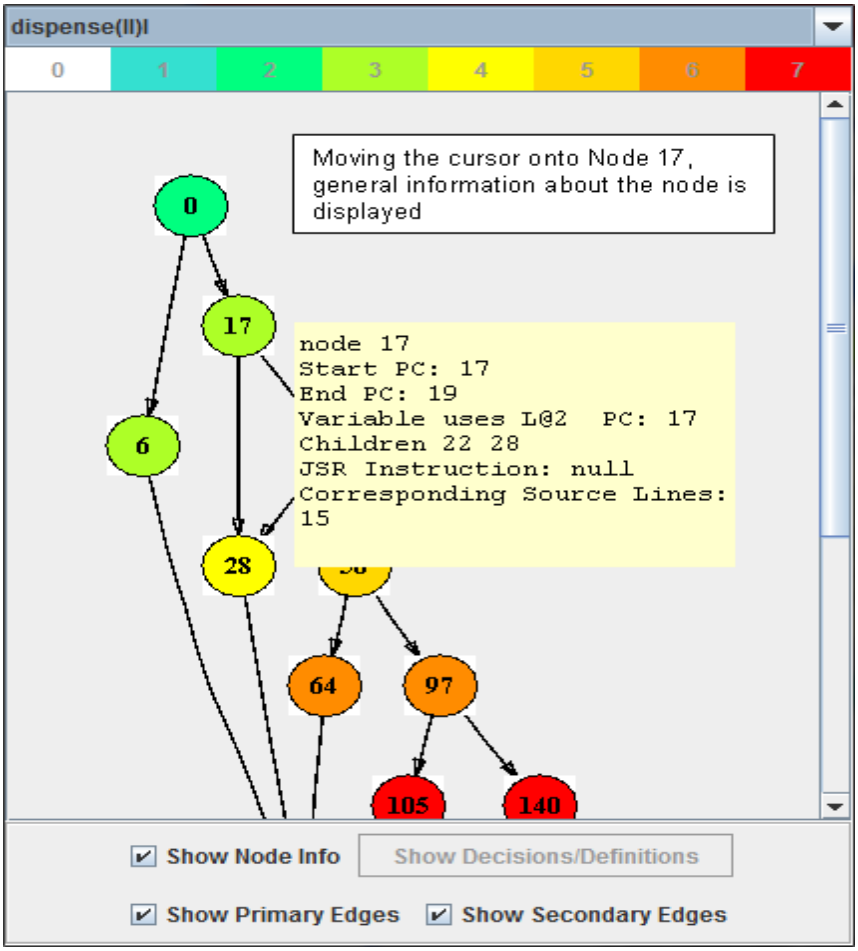
3.2: Write a program that reads two words representing passwords from the java console and outputs the number of character in the smaller of the two. For example, if the words are open and sesame, then the output should be 4, the length of the shorter word, open. And test this program using JaButi

Def-use-graph:

A dataflow graph of a program, also known as def-use graph, captures the flow of definitions (also known as defs) and uses across basic blocks in a program.

It is similar to a control flow graph of a program in that the nodes, edges, and all paths in the control flow graph are preserved in the data flow graph.

An example follows.



3.1: Write a program for a calculator and find the test case and coverage and Def-use-graph

Code:

```
import java.util.Scanner;

class Calc {
  public static void main(String[] args) {

    char operator;
    Double number1, number2, result;

    Scanner input = new Scanner(System.in);

    System.out.println("Enter first number");
    number1 = input.nextDouble();

    System.out.println("Enter second number");
    number2 = input.nextDouble();

    System.out.println("Choose an operator: +, -, *, or /");
    operator = input.next().charAt(0);

    switch (operator) {


      case '+':
        result = number1 + number2;
        System.out.println(number1 + " + " + number2 + " = " + result);
        break;


      case '-':
        result = number1 - number2;
        System.out.println(number1 + " - " + number2 + " = " + result);
        break;
```

```
      case '*':
        result = number1 * number2;
        System.out.println(number1 + " * " + number2 + " = " + result);
        break;


      case '/':
        result = number1 / number2;
        System.out.println(number1 + " / " + number2 + " = " + result);
        break;

      default:
        System.out.println("Invalid operator!");
        break;
    }

    input.close();
  }
}
```

Output:

3.2: Write a program that reads two words representing passwords from the java console and outputs the number of character in the smaller of the two. For example, if the words are open and sesame, then the output should be 4, the length of the shorter word, open. And test this program using JaButi

Code:

```
package urlpackage;
```

```
import java.util.Scanner;

public class PwdLen {
	public static void main(String args[]){
		String word1,word2;

		Scanner sc = new Scanner(System.in);

		System.out.println("Enter the First word words that representing passwords");
		word1= sc.nextLine();

		System.out.println("Enter the Second word words that representing passwords");
		word2= sc.nextLine();

		if (word1.length()<= word2.length()){

			System.out.println(word1.length());
		}
		else{
			System.out.println(word2.length());
		}

	 sc.close();

	}

}
```