

Софтверски квалитет и тестирање

Домашна бр.2

Марко Манчов 151211

За функцијата **stut**, <https://cs.gmu.edu/~offutt/softwaretest/java/Stutter.java>, потребно е да се направи покривање со помош на графови и да се дефинираат соодветните тест случаи (според Data Flow Criteria, на ист начин како примерот од вежби).

Како помош, можете да ја искористите и алатката која се наоѓа на овој линк: <https://cs.gmu.edu:8443/offutt/coverage/DFGraphCoverage>.

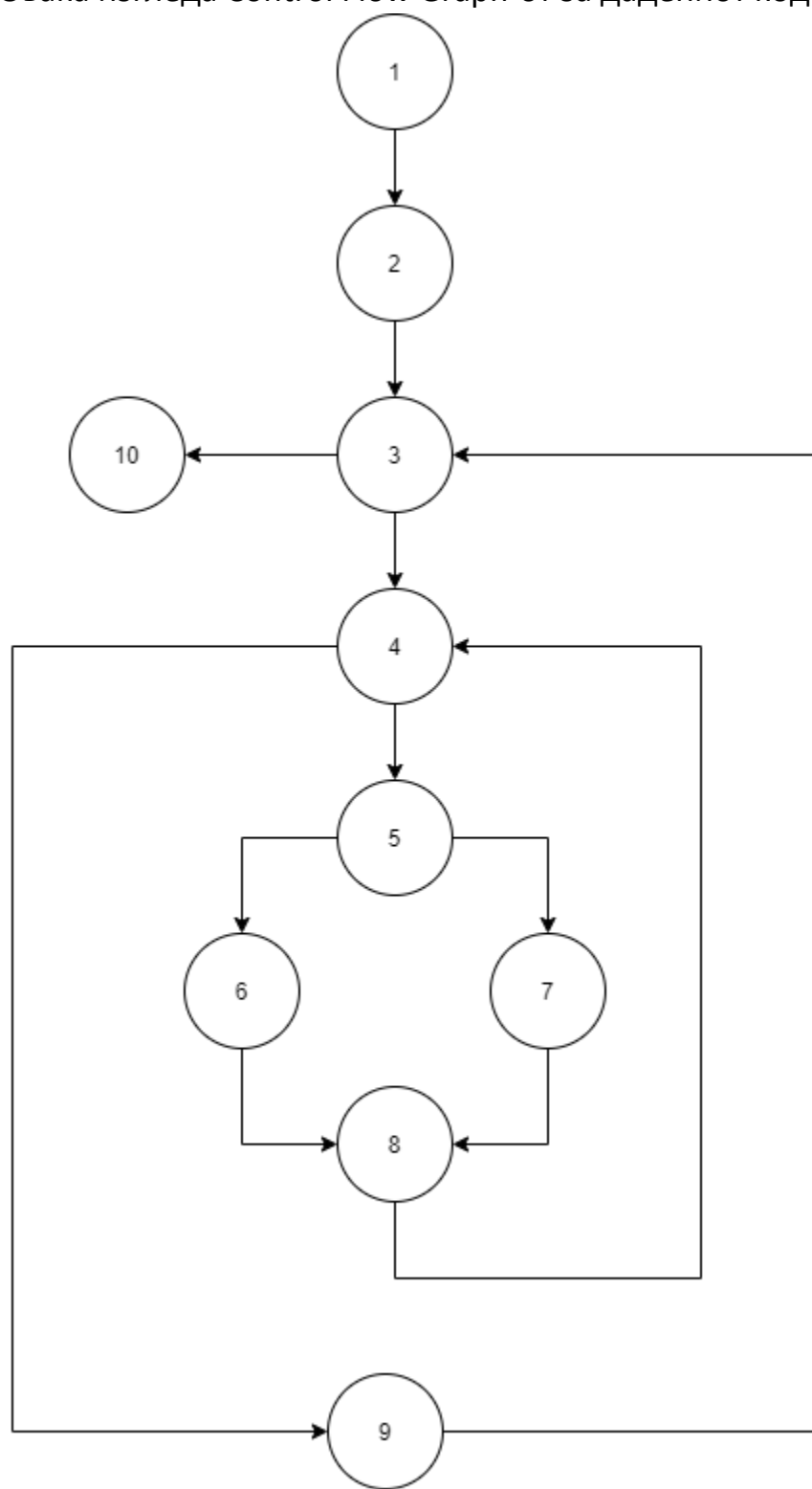
Дадениот код кој ќе служи за решавање на оваа вежба:

```
private static void stut (BufferedReader inFile) throws IOException
{
    String inLine;
    char c;
    int linecnt = 1;
    while ((inLine = inFile.readLine()) != null)
    { // For each line

        for (int i=0; i<inLine.length(); i++)
        { // for each character
            c = inLine.charAt(i);

            if (isDelimit (c))
            { // Found an end of a word.
                checkDupes (linecnt);
            }
            else
            {
                lastdelimit = false;
                curWord = curWord + c;
            }
        }
        checkDupes (linecnt);
        linecnt++;
    }
}
```

Овака изгледа Control Flow Graph-от за дадениот код



DU Pairs for all variables are:

Variable	DU Pairs
infile	[1, (3, 10)] [1, (3, 4)]
inline	[2,4] [2,5] [(3, 10), 4] [(3, 4), 4] [(3, 10), 5] [(3, 4), 5]
c	[2,6] [5,6] [2, (5, 7)] [2, (5, 6)] [5, (5, 7)] [5, (5, 6)]
linecnt	[2,7] [2,9]

DU Paths for all variables are:

Variable	DU Paths
infile	[1,2,3,4] [1,2,3,10]
inline	[3,4,5]
c	[5,6] [5,7]
linecnt	[2,3,4,9] [2,3,4,5,7]

All Def Coverage for all variables are:

Variable	All Def Coverage
infile	[1,2,3,4,9,3,10]
inline	[1,2,3,4,5,6,8,4,9,3,10]
c	[1,2,3,4,5,6,8,4,9,3,10]
linecnt	[1,2,3,4,9,3,10]

All Use Coverage for all variables are:

Variable	All Use Coverage
infile	[1,2,3,10] [1,2,3,4,9,3,10]
inline	[1,2,3,4,5,6,8,4,9,3,10]
c	[1,2,3,4,5,6,8,4,9,3,10] [1,2,3,4,5,7,8,4,9,3,10]
linecnt	[1,2,3,4,5,7,8,4,9,3,10] [1,2,3,4,9,3,10]

All DU Path Coverage for all variables are:

Variable	All DU Path Coverage
infile	[1,2,3,4,9,3,10] [1,2,3,10]
inline	[1,2,3,4,5,6,8,4,9,3,10]
c	[1,2,3,4,5,6,8,4,9,3,10] [1,2,3,4,5,7,8,4,9,3,10]
linecnt	[1,2,3,4,9,3,10] [1,2,3,4,5,7,8,4,9,3,10]

Код за тест:

```
import org.junit.jupiter.api.*;
import org.junit.jupiter.api.Test;

import org.junit.jupiter.params.provider.MethodSource;

import java.io.BufferedReader;
import java.io.FileNotFoundException;

public class StutterTest
{
    private BufferedReader infile;
    public StutterTest(BufferedReader infile)
    {
        this.infile = infile;
    }
    // The following values are from the 1st edition, Table 2.4, page 59
    // Need an update to the new edition table number and page number.
    @Test
    public void testTextFlow()
    {
        Assertions.assertThrows(FileNotFoundException.class,
            () -> {
                Stutter.main(new String[]{"text3.txt"});
            });
    }
}
```