Name of the Course : Complete Java SE8 Developer Bootcamp

Level : Moderate

Tool Stack : Java8 and Junit5

Problem Statement : Provide a code solution to count the number of migratory birds in a group, fly above the sky, based on number row formations.

Description : A group of Ornithologists (bird watchers) want to count number of birds in a group flying on the sky during their migration time. Scientists discovered that migratory birds fly in the rows arranging in Fibonacci series but in 1,2,3,5,8,... formation (not 0,1,1,2,3,5...). Based on this feature, the Ornithologists decide to count the numbers of rows in that group, which will ultimately tell the total number of birds in that group flying above the sky. You are required to write solution for calculating number of birds based on row number. Create only one class Main with two methods :-

1.public static int countTotalBirds(int rowNumber): It accepts the number of rows then calculates the total number of birds based on the Fibonacci series of 1,2,3,5... order. Finally returns the total number of birds.

2. public static void main(String arg[]): It accepts the total row numbers, invokes countTotalBirds() then display total number of birds.

Code:

**import** java.util.Scanner;

**public** **class** Main {

**public** **static** **int** countTotalBirds(**int** rowNumber)

{

**if**(rowNumber==1)

**return** 1;

**else**

{

**int** row=0;

**int** row1=1;

**int** row2=2;

**int** totalBirds=row1+row2;

rowNumber=rowNumber-2;

**while**(row<rowNumber)

{

**int** total=row1+row2;

totalBirds=totalBirds+total;

row1=row2;

row2=total;

row++;

}

**return** totalBirds;

}

}

**public** **static** **void** main(String[] args) {

Scanner scanner=**new** Scanner(System.***in***);

System.***out***.println("Enter total number of rows.");

**int** rowNumber=scanner.nextInt();

System.***out***.println(*countTotalBirds*(rowNumber));

}

}

Junit Testing

**import** **static** org.junit.Assert.\*;

**import** org.junit.Test;

**public** **class** MainTest {

@Test

**public** **void** testCountTotalBirds() {

*assertEquals*(19,Main.*countTotalBirds*(5));

*assertEquals*(32,Main.*countTotalBirds*(6));

*assertEquals*(53,Main.*countTotalBirds*(7));

}

}

Test Data1

Enter total number of rows.

5

19

Test Data2

Enter total number of rows.

6

32

Test Data3

Enter total number of rows.

7

53

Learning outcome: Participant could able to learn practical usage of Fibonacci series and moderate programming logic.