

YourName: Shyaan Khan period: 4

Directions: Complete all questions

Single For Loop Explanation and MiniLabs

```
1.  *
2.  Simple For loop Example
3.  This Java Example shows how to use for loop to iterate in Java program.
4.  */
5.
6.  public class SimpleForLoopExample {
7.
8.      public static void main(String[] args) {
9.
10.         /* Syntax of for loop is
11.            *
12.            * for(<initialization> ; <condition> ; <expression> )
13.            *   <loop body>
14.            *
15.            * where initialization usually declares a loop variable, condition is a
16.            * boolean expression such that if the condition is true, loop body will be
17.            * executed and after each iteration of loop body, expression is executed
            which
18.            * usually increase or decrease loop variable.
19.            *
20.            * Initialization is executed only once.
21.            */
22.
23.            for(int index = 0; index < 5 ; index++)
24.                System.out.println("Index is : " + index);
25.
26.            /*
27.            * Loop body may contain more than one statement. In that case they
            should
28.            * be in the block.
29.            */
30.
```

```
31.     for(int index=0; index < 5 ; index++)
32.     {
33.         System.out.println("Index is : " + index);
34.         index++;
35.     }
36.
37.     /*
38.         * Please note that in above loop, index is a local variable whose scope
39.         * is limited to the loop. It can not be referenced from outside the loop.
40.         */
41. }
42.}
43.
44. /*
45. Output would be
46. Index is : 0
47. Index is : 1
48. Index is : 2
49. Index is : 3
50. Index is : 4
51. //output for 2nd for loop
52. Index is : 0
53. Index is : 2
54. Index is : 4
55. */
```

#1 MiniLab: You Try: write in Eclipse using a for loop that prints:

Count is: 1

Count is: 2

Count is: 3

Count is: 4

Count is: 5

Count is: 6

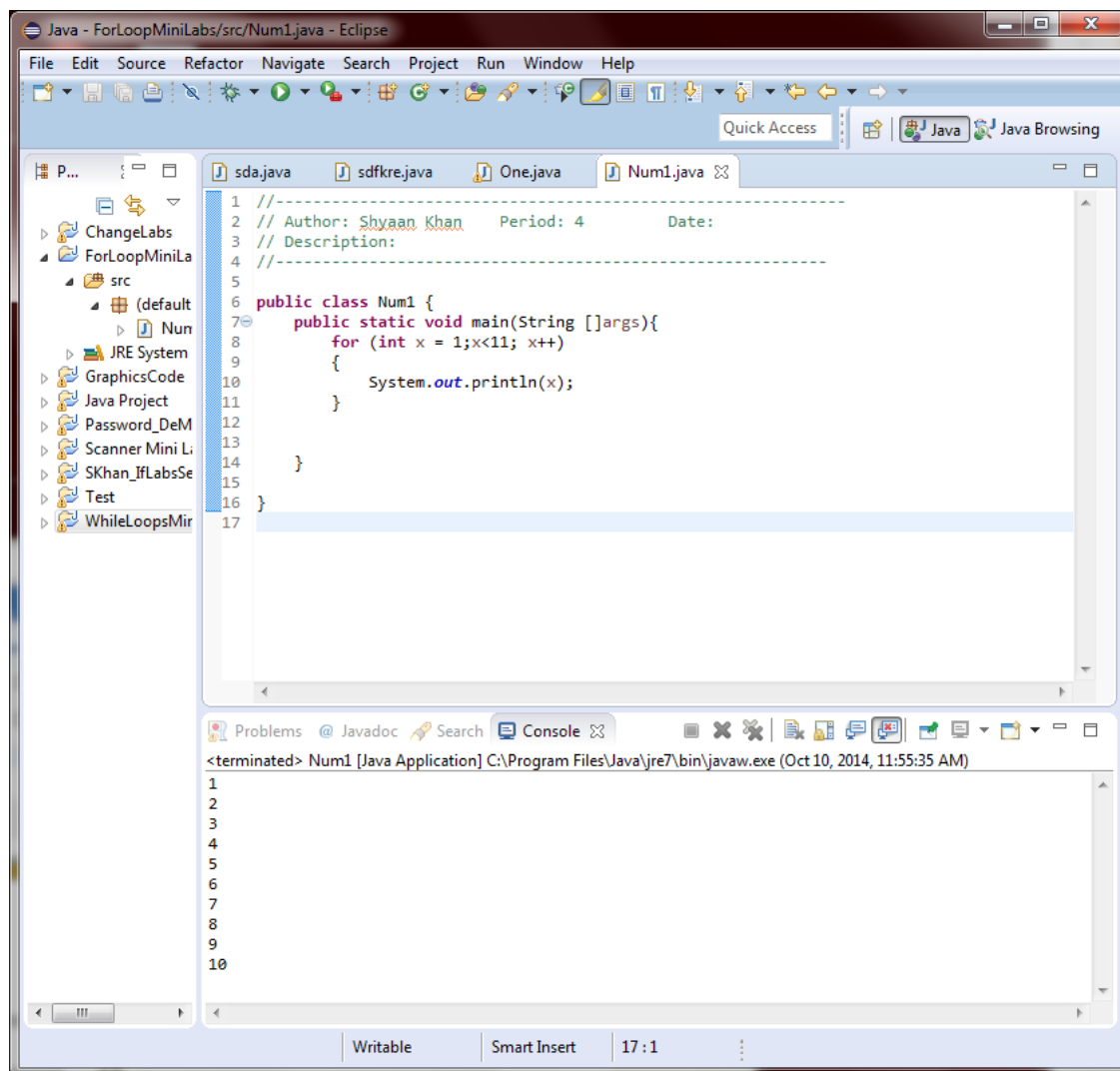
Count is: 7

Count is: 8

Count is: 9

Count is: 10

Paste your code: I NEED TO SEE CODE AND SCREENSHOT OF OUTPUT



#2:

Now try doing it backwards

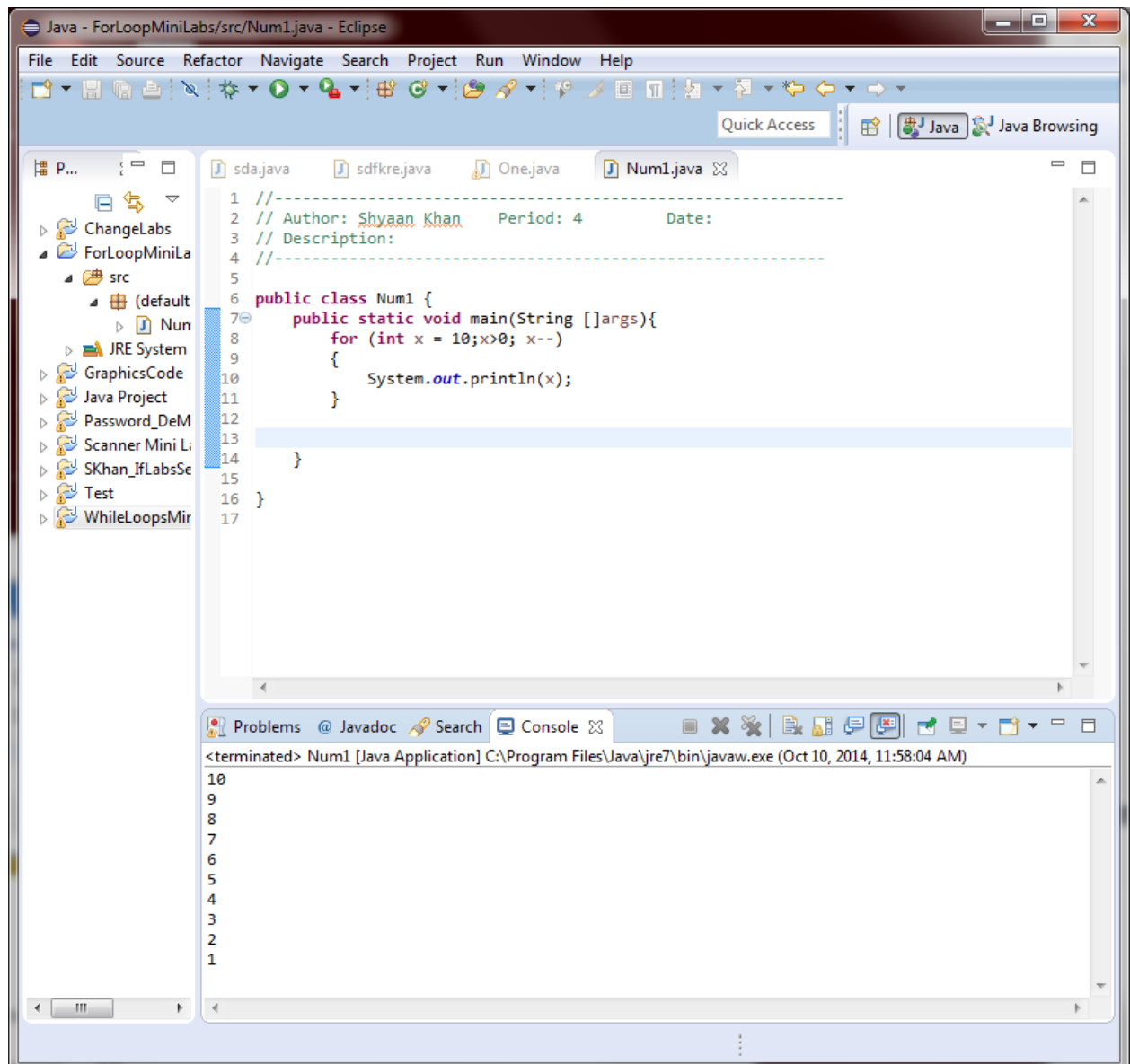
count is : 10

count is : 9

count is: 8

etc up to 1

Paste your code: I NEED TO SEE CODE AND SCREENSHOT OF OUTPUT



The screenshot shows the Eclipse IDE with a Java project named 'ForLoopMiniLabs'. The source file 'Num1.java' is open, displaying the following code:

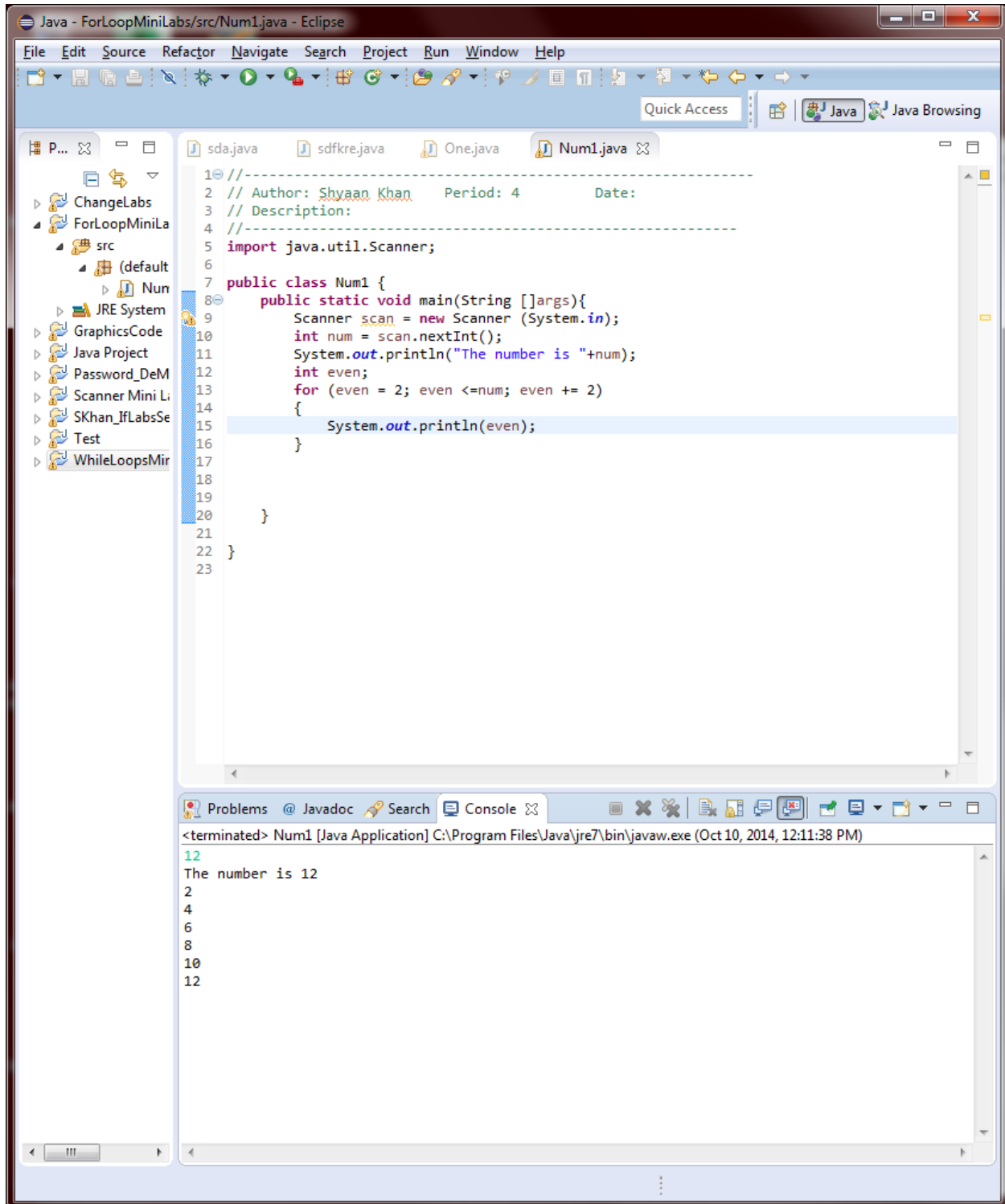
```
1 //-----
2 // Author: Shyaan Khan   Period: 4   Date:
3 // Description:
4 //-----
5
6 public class Num1 {
7     public static void main(String []args){
8         for (int x = 10;x>0; x--)
9         {
10             System.out.println(x);
11         }
12     }
13 }
14
15
16
17 }
```

The console output at the bottom shows the program's execution, printing the numbers 10 through 1 in descending order:

```
<terminated> Num1 [Java Application] C:\Program Files\Java\jre7\bin\javaw.exe (Oct 10, 2014, 11:58:04 AM)
10
9
8
7
6
5
4
3
2
1
```

#3: Write a for loop that prints 6 stars

Paste your code: I NEED TO SEE CODE AND SCREENSHOT OF OUTPUT



The screenshot shows the Eclipse IDE with the file `Num1.java` open. The code defines a `Num1` class with a `main` method that uses a `Scanner` to read an integer `num` and then prints even numbers from 2 to `num` using a `for` loop. The console output shows the program execution, including the prompt `12` and the resulting sequence of even numbers: `2`, `4`, `6`, `8`, `10`, and `12`.

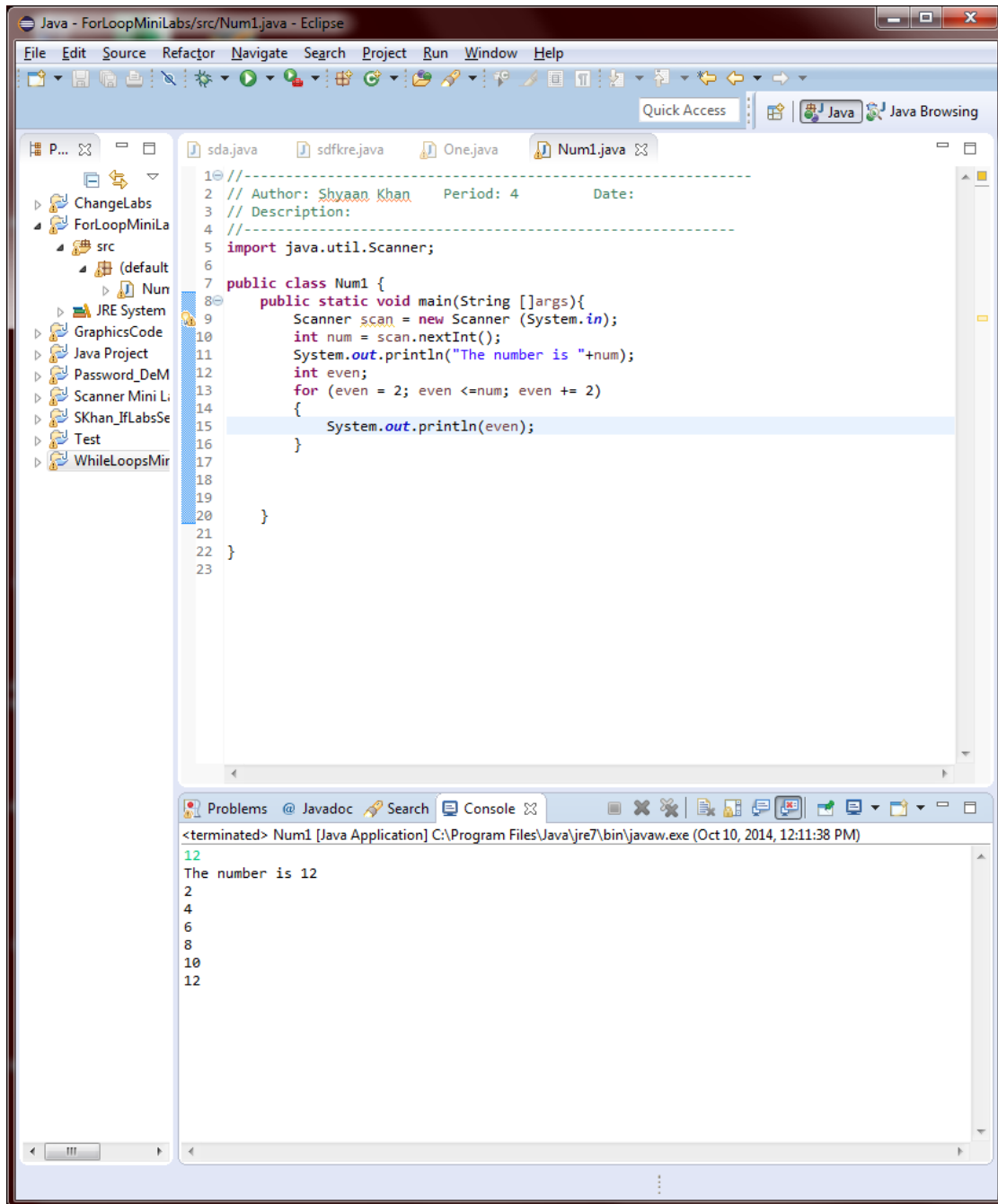
```
1 //-----
2 // Author: Shayaan Khan   Period: 4   Date:
3 // Description:
4 //-----
5 import java.util.Scanner;
6
7 public class Num1 {
8     public static void main(String []args){
9         Scanner scan = new Scanner (System.in);
10        int num = scan.nextInt();
11        System.out.println("The number is "+num);
12        int even;
13        for (even = 2; even <=num; even += 2)
14        {
15            System.out.println(even);
16        }
17    }
18
19 }
20
21
22 }
23
```

<terminated> Num1 [Java Application] C:\Program Files\Java\jre7\bin\javaw.exe (Oct 10, 2014, 12:11:38 PM)

12
The number is 12
2
4
6
8
10
12

#4: Using a **for loop**. Ask a user for a number. Print the number given by the user and all the **even** numbers up to and including the number given.

Paste your code: I NEED TO SEE CODE AND SCREENSHOT OF OUTPUT



The screenshot shows the Eclipse IDE with a Java project named 'ForLoopMiniLa'. The package 'src' contains a class 'Num1'. The code in 'Num1.java' is as follows:

```
1 //-----
2 // Author: Shyaan Khan    Period: 4    Date:
3 // Description:
4 //-----
5 import java.util.Scanner;
6
7 public class Num1 {
8     public static void main(String []args){
9         Scanner scan = new Scanner (System.in);
10        int num = scan.nextInt();
11        System.out.println("The number is "+num);
12        int even;
13        for (even = 2; even <=num; even += 2)
14        {
15            System.out.println(even);
16        }
17    }
18 }
19
20 }
21
22 }
23 }
```

The console output shows the program execution:

```
<terminated> Num1 [Java Application] C:\Program Files\Java\jre7\bin\javaw.exe (Oct 10, 2014, 12:11:38 PM)
12
The number is 12
2
4
6
8
10
12
```

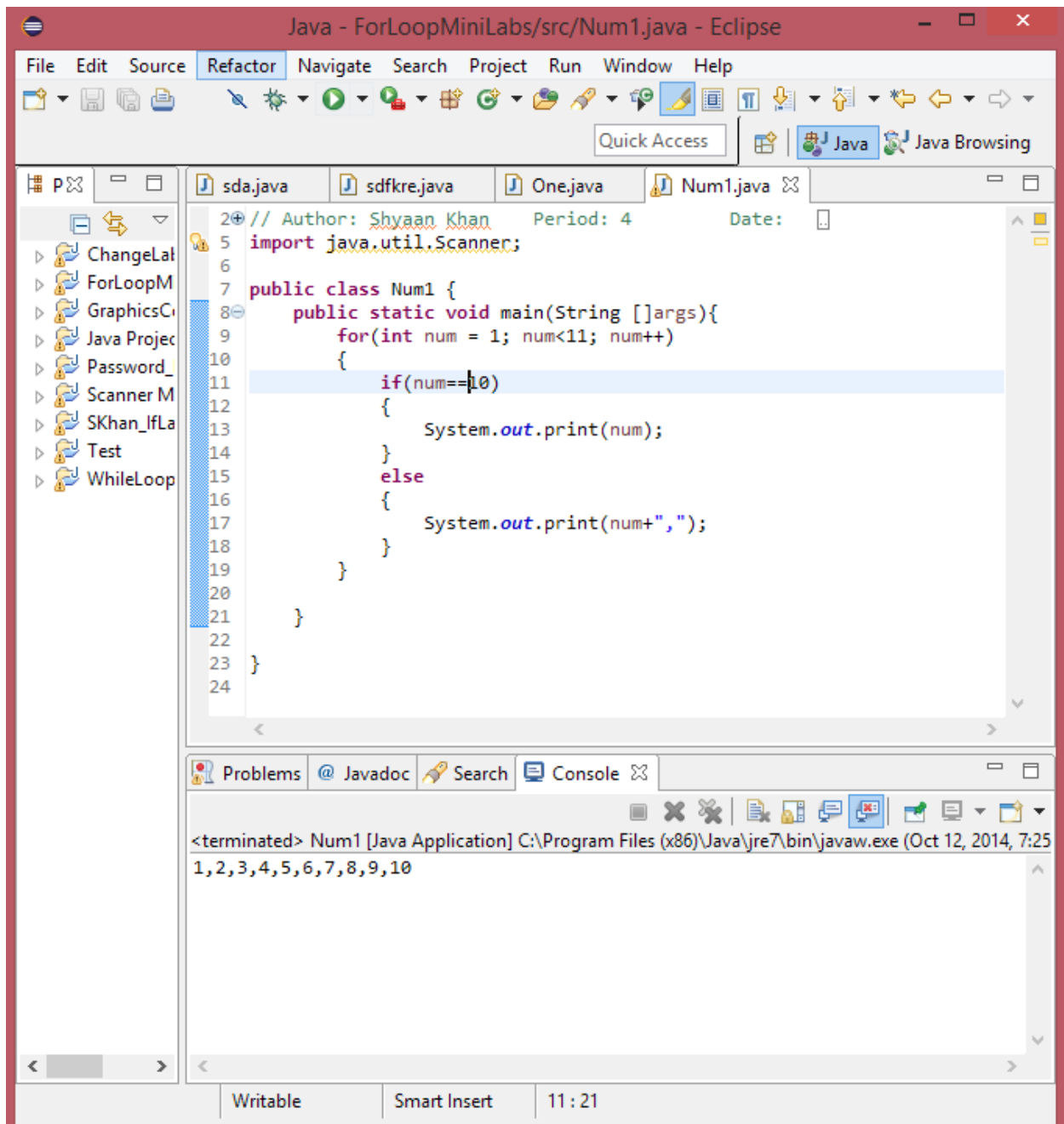
#5: Write a for loop to display numbers 1 through 10. I want to have a comma in-between each number like this:

1, 2, 3, 4, 5, 6, 7, 8, 9, 10

I do not want to have commas after last number - NOT LIKE THIS!

1, 2, 3, 4, 5, 6, 7, 8, 9, 10,

Paste your code: I NEED TO SEE CODE AND SCREENSHOT OF OUTPUT



The screenshot shows the Eclipse IDE interface. The main editor displays the following Java code in `Num1.java`:

```
// Author: Shyaan Khan    Period: 4    Date: 
import java.util.Scanner;

public class Num1 {
    public static void main(String []args){
        for(int num = 1; num<11; num++){
            if(num==10)
            {
                System.out.print(num);
            }
            else
            {
                System.out.print(num+",");
            }
        }
    }
}
```

The left sidebar shows a project explorer with folders like `ChangeLat`, `ForLoopM`, `GraphicsC`, `Java Projec`, `Password_`, `Scanner M`, `SKhan_lfLa`, `Test`, and `WhileLoop`.

The bottom console window shows the output of the program:

```
<terminated> Num1 [Java Application] C:\Program Files (x86)\Java\jre7\bin\javaw.exe (Oct 12, 2014, 7:25)
1,2,3,4,5,6,7,8,9,10
```

The status bar at the bottom indicates the editor is `Writable`, `Smart Insert` is active, and the time is `11:21`.

#6: What will the following print? and Why?

```
int y = 0;
for (int x = 1; x <= 5; x++)
{
    y = y + 10;
}
System.out.println(y);
System.out.println(x);
```

10
5

Because y is the same (y=0) every time the loop runs, and since the print for x is out of the loop, it will print the last loop of x, which is 5 since you add 1 to x until it is less than or equal to 5,

7. What will the following print? and why?

```
int x;
int y = 0;
for (x = 1; x <= 5; x++)
{
    y = y + 10;
}
System.out.println(y);
System.out.println(x);
```

10
5

Because it is almost identical to the previous code. The only difference is that it is declared out of the for loop, which doesn't change the output.

8. More Scope: Which statement below is illegal?

```
int i, j, k;
```

```
for (j = 1; j <= 10; j++)
```

```
{
```

```
    k = j;           =1, =2
```

```
    k = i;
```

```
    i = j;           =1
```

```
    k = i;           =1
```

```
}
```

`k = i;` is illegal.

9. What is the output below of the code fragments with inputs of: 3 6 0 9 -5 2

```
for (count = 1; count <= 5; count++)
```

count number

```
{
```

```
    String input = JOptionPane.showInputDialog("Type a #");
```

```
    int number = Integer.parseInt(input);
```

```
        if (number <= 0)
```

```
            continue;
```

```
        number = number + 2;
```

```
}
```

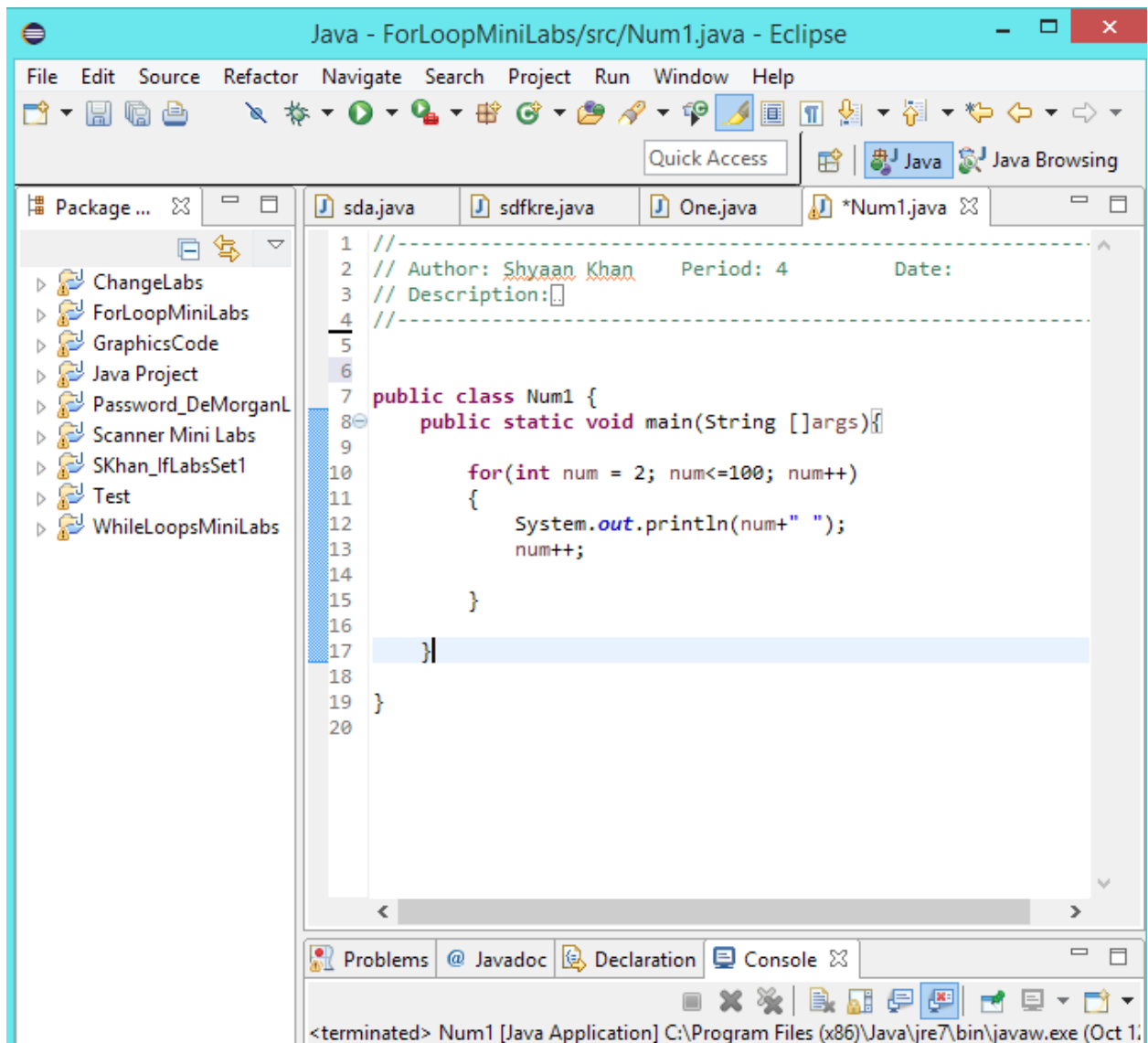
```
System.out.println(number);
```

```
}
```

Input = 3

Output = -5

10) Write a for statement that prints all even numbers from 2 to 100 inclusive. I NEED TO SEE CODE AND SCREENSHOT OF OUTPUT



The screenshot shows the Eclipse IDE interface. The title bar reads "Java - ForLoopMiniLabs/src/Num1.java - Eclipse". The menu bar includes File, Edit, Source, Refactor, Navigate, Search, Project, Run, Window, and Help. The toolbar contains various icons for file operations and development tools. The Package Explorer on the left shows a project structure with folders like ChangeLabs, ForLoopMiniLabs, GraphicsCode, Java Project, Password_DeMorganL, Scanner Mini Labs, SKhan_IfLabsSet1, Test, and WhileLoopsMiniLabs. The main editor window displays the code for Num1.java. The code includes a header with author, period, and date information, followed by a for loop that prints even numbers from 2 to 100. The console at the bottom shows the output of the program.

```
1  //-----
2  // Author: Shayaan Khan   Period: 4       Date:
3  // Description:
4  //-----
5
6
7  public class Num1 {
8      public static void main(String []args){
9
10         for(int num = 2; num<=100; num++)
11         {
12             System.out.println(num+" ");
13             num++;
14         }
15     }
16 }
17
18
19
20
```

Problems | Javadoc | Declaration | Console

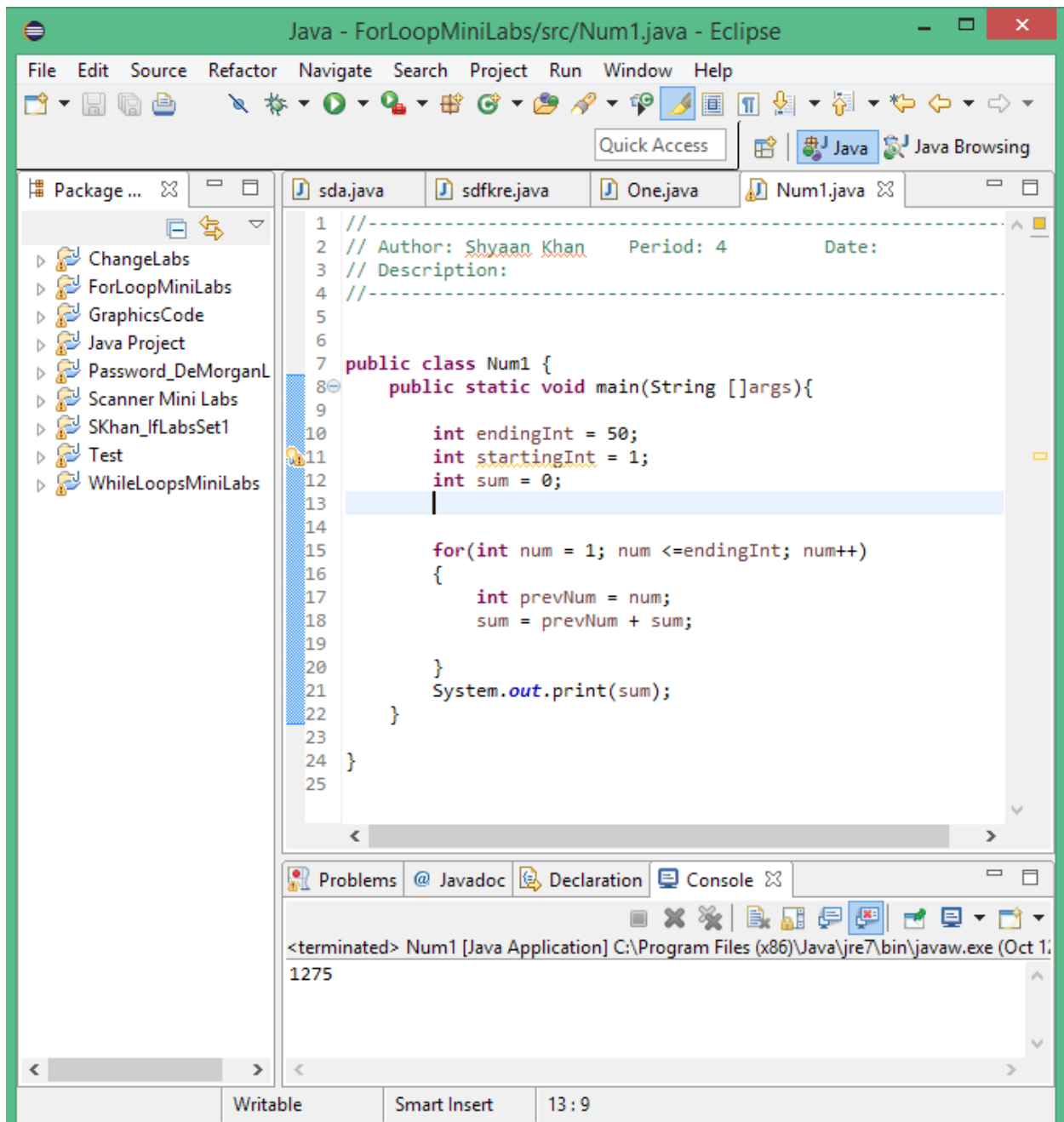
<terminated> Num1 [Java Application] C:\Program Files (x86)\Java\jre7\bin\javaw.exe (Oct 1;

The image shows a Java console window titled "Console" with a standard Windows-style title bar (minimize, maximize, close buttons). The window contains the following text:

```
<terminated> Num1 [Java Application] C:\Program Files (x86)\Java\jre7\bin\javaw.exe (Oct 12, 2012)
2
4
6
8
10
12
14
16
18
20
22
24
26
28
30
32
34
36 |
38
40
42
44
46
48
50
52
54
56 |
58
60
62
64
66
68
70
72
74
76
78
80
82
84
86
88
90
92
94
96
98
100
```

The output consists of even numbers from 2 to 100, printed on separate lines. There are vertical cursor bars (indicated by '|') next to lines 36 and 56. A small blue dot is visible on line 18. The window has a scrollbar on the right side, and the text is left-aligned.

11) Write a for loop that sums the integers from 1 to 50. I NEED TO SEE CODE AND SCREENSHOT OF OUTPUT



The screenshot shows the Eclipse IDE interface. The main editor window displays the file `Num1.java` with the following code:

```
1 //-----
2 // Author: Shyaan Khan    Period: 4    Date:
3 // Description:
4 //-----
5
6
7 public class Num1 {
8     public static void main(String []args){
9
10         int endingInt = 50;
11         int startingInt = 1;
12         int sum = 0;
13
14
15         for(int num = 1; num <=endingInt; num++){
16             {
17                 int prevNum = num;
18                 sum = prevNum + sum;
19             }
20         }
21         System.out.print(sum);
22     }
23 }
24
25
```

The bottom of the IDE shows the `Console` view with the output:

```
<terminated> Num1 [Java Application] C:\Program Files (x86)\Java\jre7\bin\javaw.exe (Oct 1, 2015)
1275
```

The status bar at the bottom indicates the file is `Writable`, `Smart Insert` is active, and the cursor is at `13 : 9`.