

Day - 3

Assignment - 4

* Section 2 :

Guess the output.

1) Snippet 1 :

```
public class NestedLoopOutput {
    public static void main (String[] args) {
        for (int i = 1 ; i <= 3 ; i++) {
            for (int j = 1 ; j <= 2 ; j++) {
                System.out.print (i + " " + j + " ");
            }
            System.out.println ();
        }
    }
}
```

→ Dry Run :

- ① Outer loop (i) runs 3 times (i = 1 to 3).
- ② Inner loop (j) runs 2 times (j = 1 to 2). each "i" outer loop calls or perform.
- ③ Firstly s.o.p `Ci + " " + j + " "`; Prints values of i & j.
- ④ After inner loop execute/complite iterations it comes next line.

Like,

$i = 1 ; i <= 3 ; i++$
 $1 <= 3$
 $j = 1 ; j <= 2 ; j++$
 $1 <= 2$
 Print $i = 1 \ j = 1, 1$
 ~~$(i = 1) \ j = 2, 2$~~
 stop

$i = 2 ; 2 <= 3 ; 2++$
 $j = 1 ; 1 <= 2 ; 1++$
 $j = 2 ; 2 <= 2 ; 2++$
 before ~~$(i = 2) \ j = 2$~~
 stop

$i = 3$; $3 \leq 3$; $i++$
 $j = 1$; $1 \leq 2$; $j++$
 $i = 2$; $2 \leq 2$; $i++$
 stop

$i = 3$; $j = 1$
 $j = 2$

Expected Output :

1 1 1 2
 2 1 2 2
 3 1 3 2

2) snippet 2 :

```

public class Decrementing Loop {
    public static void main (String [] args) {
        int total = 0;
        for (int i = 5; i > 0; i--) {
            total += i;
            if (i == 3) continue;
            total -= 1;
        }
        System.out.println (total);
    }
}
    
```

→ Dry Run :

* iteration 1 when $(i = 5)$

condⁿ $\rightarrow i > 0 \rightarrow 5 > 0 \rightarrow \text{True}$; (loop continues)

$\text{total} += i$; $\text{total} = 0$; $0 + 5 = 5$;

check if $(5 == 3) \rightarrow \text{False}$; (skip continue)

After it decrement

$i = 4$ & $\text{total} = 4$

* Iteration 2 ($i=4$)

1. Condition check: $4 > 0 \rightarrow \text{True}$ goes
2. $\text{total} += i \rightarrow \text{total} = 4$; $4 + 4 = 8$
3. check if $(4 == 3) \rightarrow \text{False}$
4. $\text{total} -= 1$; $\rightarrow 8 - 1 = 7$
5. Decrement $i-- \rightarrow 4 - 1 = 3$

$i = 3$ & $\text{total} = 7$

* Iteration 3 ($i=3$)

1. Condition check: $3 > 0 \rightarrow \text{True}$ goes
2. $\text{total} += i \rightarrow 7 + 3 = 10$
3. check if $(3 == 3) \rightarrow \text{True}$ continue
4. $\text{total} -= 1$
5. decrement $i = 3 - 1 = 2$

$i = 2$ & $\text{total} = 10$

* Iteration 4 & 5 same as 1 & 2 and then loop stop to execute.

* Expected Output:

11 \rightarrow Final value

3 * Snippet 3:

public class WhileLoopBreak {

public static void main (String [] args) {

int count = 0;

while (count < 5) {

system.out.print (count + " ");


```

        count++;
        if (count == 3) break;
    }
    System.out.println(count);
}

```

→ Dry Run :

- Step 1 : $count = 0$ so $count < 5$, $0 < 5$ ✓
 $count++$, $count = 1$, Break $count == 3$ ✗
 So loop continue.
- Step 2 : $1 < 5$ ✓ print (1), $count = 2$ break
 condition $2 == 3$ ✗ so loop continue.
- Step 3 : $2 < 5$ ✓, print (2), $count = 3$, $3 = 3$ ✓
 so loop ends

→ Expected Output :

∴ 0 1 2 3

* Snippet 4 :

→ Dry Run :

- Step 1 : $i = 1$, print(1); $1++ = 2$; $i < 5 = 2 < 5$ goes next
 $i = 2$, print(2); $2++ = 3$; $3 < 5$ ✓ goes next
 $i = 3$, print(3); $3++ = 4$; $4 < 5$ ✓ goes next
 $i = 4$, print(4); $4++ = 5$; $5 < 5$ ✗ stop loop

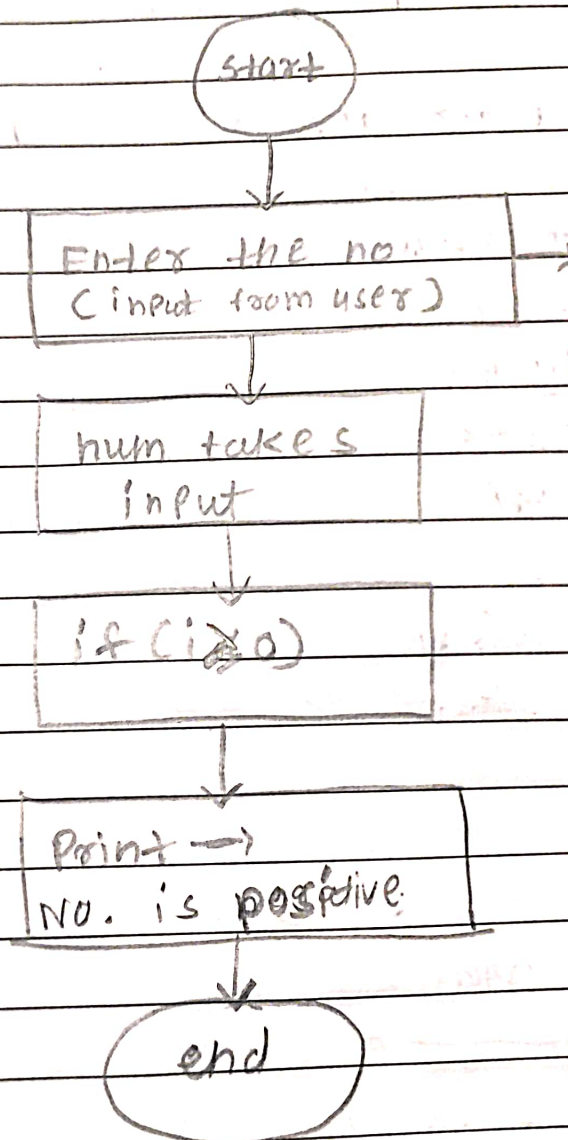
Final Expected output →
 1 2 3 4 5

Day - 2

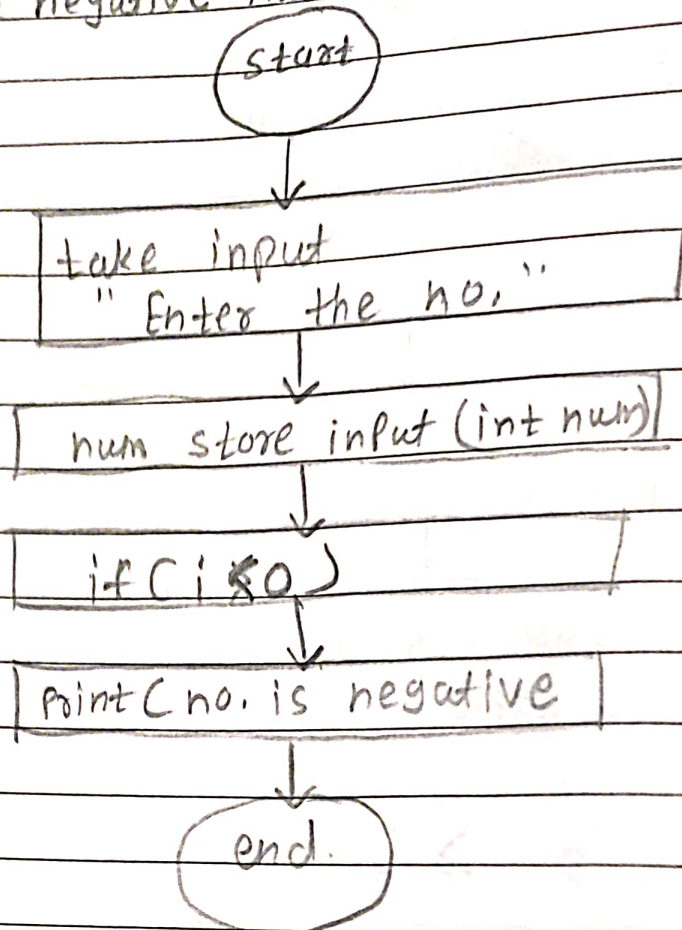
Date _____
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Assignment = 1

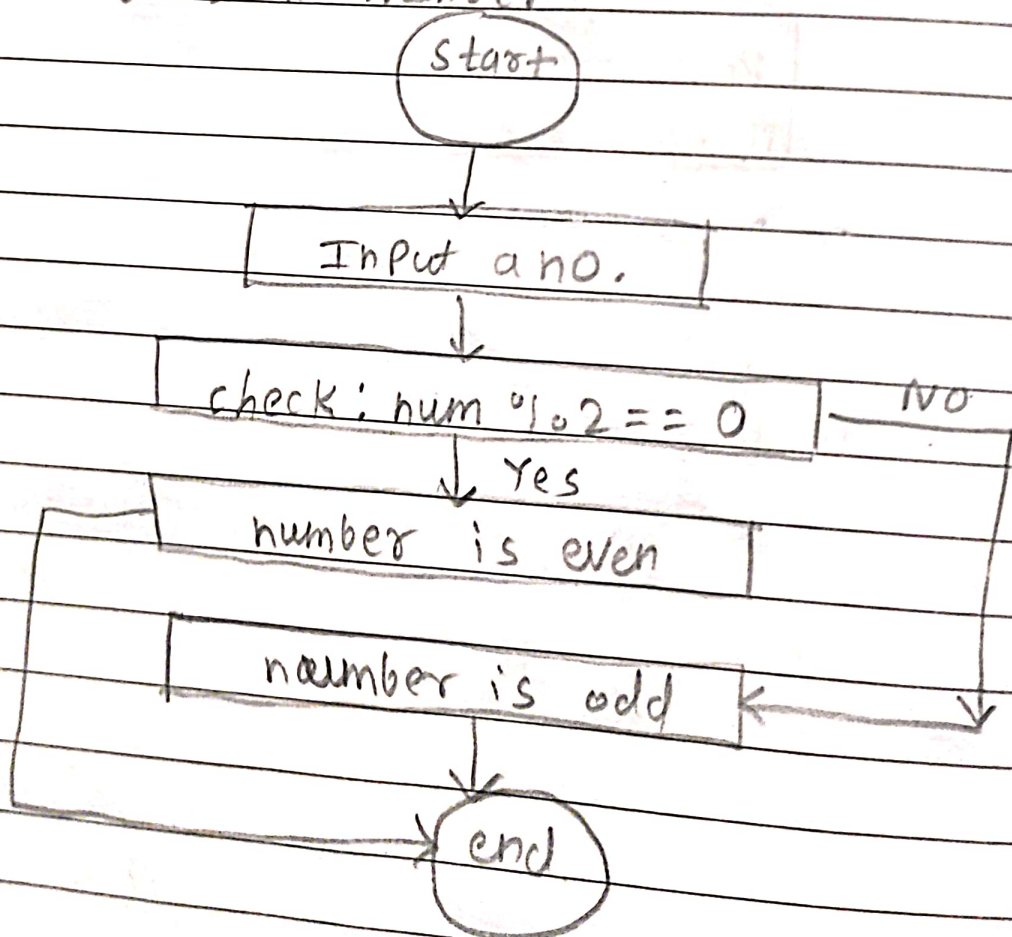
* Q.1) Check Positive Number



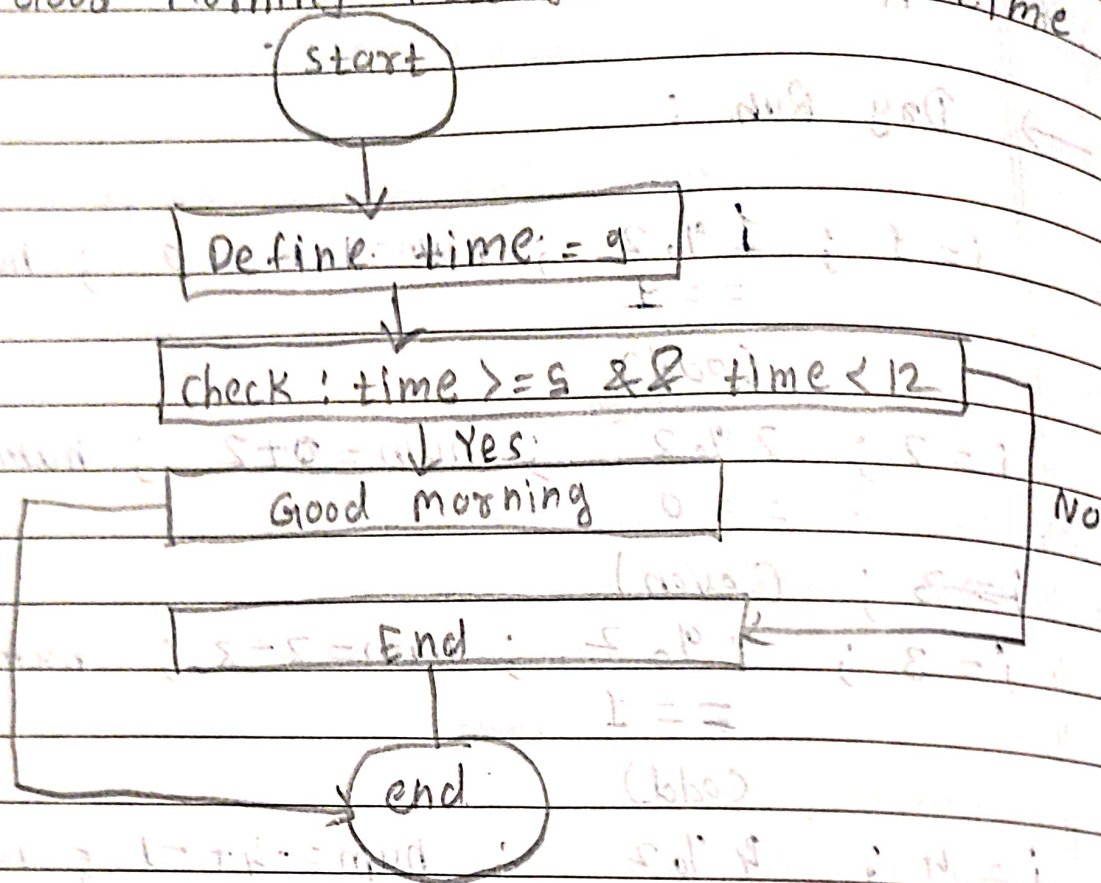
Q.2) Check the negative number



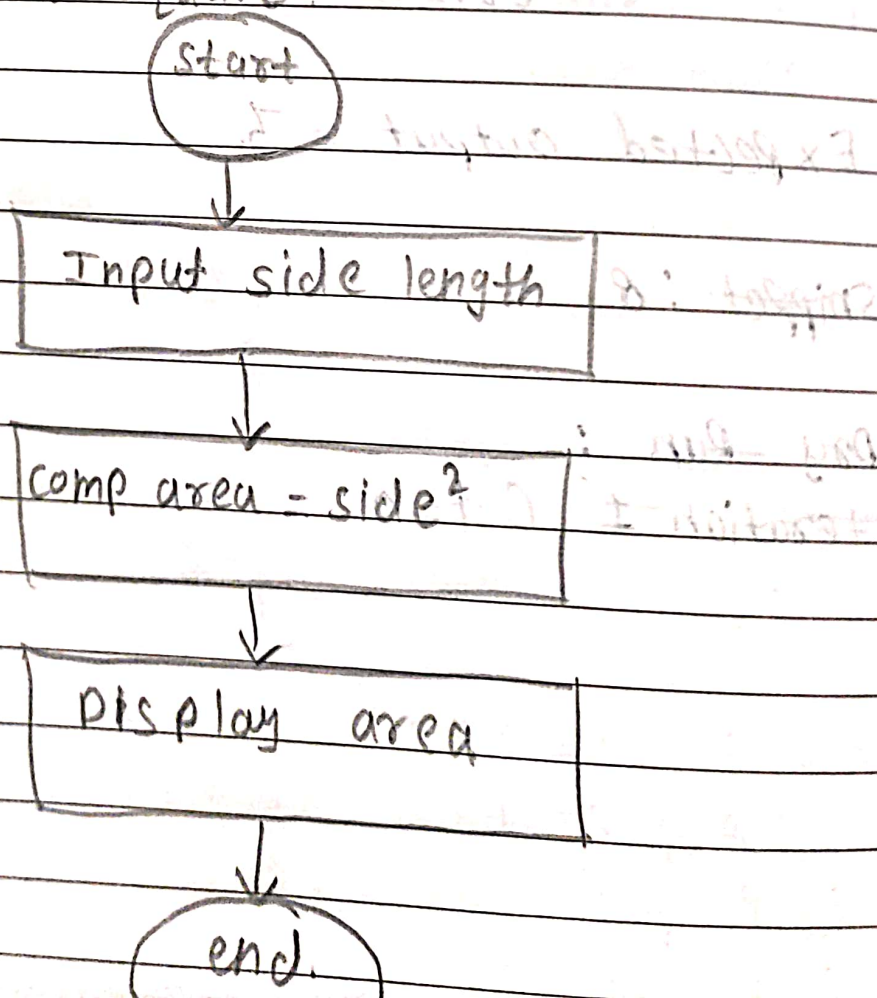
Q.3) Check Odd or Even Number.



Q.4) Display Good Morning message Based on Time



Q.5) Print Area of a Square :



Q.6) Print Area of Rectangle

