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# CSC116 DISCUSSION 9

GINA BAI



# TOPICS

- for loops

```
for (<initialization>; <continuation test>; <update>){  
    <controlled statement>;  
    <controlled statement>;  
    ...  
    <controlled statement>;  
}  
<statement>;
```

- Nested loops

- break & continue statements

- break → break out of a loop

- continue → continue to condition test

- Scope

- Testing loops

## PRACTICE

Q: What is the output?

```
int number = 4;

for (int count = 0; count < number; count++) {
    System.out.println(number);
    number = number / 2;
}
```

Output:  
4  
2

Q: Reproduce the following pattern with nested for loops

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**Sample solution:**

```
int row = 5;  
int column = 5;  
  
for (int i = 0; i < row; i++) {  
    for (int j = 0; j < column; j++) {  
        System.out.print("*");  
    }  
    System.out.println();  
}
```

Q: Reproduce the following pattern with nested for loops

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row ( i )	#space	#star (column – 2 * i)	#space
0	0	9	0
1	1	7	1
2	2	5	2
3	3	3	3
4	4	1	4

**Sample solution:**

**int** row = 5;

**int** column = 9;

```
for (int i = 0; i < row; i++) {  
    for (int j = 0; j < i; j++) {  
        System.out.print(" ");  
    }  
    for (int k = 0; k < column – 2 * i; k++) {  
        System.out.print("*");  
    }  
    System.out.println();  
}
```

## LAB 9

Write a program to reproduce the following patterns

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1

22

333

4444

55555

666666

7777777

1

2

3

4

5

1

22

333

4444

55555