

## **for:**

**for (first value for the counter (1) ; condition to stop (2) ; change the counter (3))  
statement;**

- 1- This statement will execute one time when starting the for.**
- 2- This statement will execute every time in the for.**
- 3- This statement will execute every time in the for after first round.**

**if you have more then one statement you must put block {}.**

### **Example 1:**

```
int i;
```

```
for (i = 1 ; i <= 10 ; i++)  
    System.out.println("OK");
```

prints OK 10 times

you can put the counter change i++ or ++i

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### **Example 2:**

```
int i;
```

```
for (i = 1 ; i <= 3 ; i++)  
    System.out.println("OK");
```

```
System.out.println("I = " + i);
```

**prints:**

OK

OK

OK

4

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### **Example 3:**

```
for (int i = 1 ; i <= 3 ; i++)  
    System.out.println("OK");
```

```
System.out.println("I = " + i);
```

Error in the last print statement, i is not defined  
i is defined inside for statement, you can use it only inside for.

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### **Example 4:**

```
int i;
```

```
for (i = 1 ; i <= 10 ; i++)  
    System.out.println(i);
```

**prints:**

11

it prints 11, because there is ; empty statement after the for.

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### **Example 5:**

```
int i = 1;
```

```
for ( ; i <= 3 ; i++)  
    System.out.println("OK");
```

**prints:**

OK

OK

OK

you can leave the first statement empty, but you have to give the counter value before the condition.

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### **Example 6:**

```
int i = 1;

for ( ; i <= 3 ; )
{
    System.out.println("OK");
    i++;
}
```

**prints:**

OK  
OK  
OK

you can leave the first statement empty, but you have to give the counter value before the condition.

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### **Example 7:**

Print even numbers from 1 to 100

**Bad design:**

```
for (int i = 1 ; i <= 100 ; i++)
{
    if (i % 2 == 0)
        System.out.println(i);
}
```

**Good design**

```
for (int i = 2 ; i <= 100 ; i = i + 2) or i += 2
    System.out.println(i);
```

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### **Example 8:**

read n (number of marks) calculate the average and print it, then print the maximum value.

```
Scanner input = new Scanner(System.in);
int n , total = 0;
int mark;
String name;
int max = 0;
String MaxName = "";
```

```
System.out.print("Enter how many numbers: ");
n = input.nextInt();
```

```
for (int i = 1 ; i <= n ; i++)
{
    System.out.print("Enter mark: ");
    mark = input.nextInt();

    System.out.print("Enter name: ");
    name = input.nextLine();

    total = total + mark; // or total += mark

    if (mark > max)
    {
        max = mark;
        maxName = name;
    }
}

if (n == 0)
    System.out.println("No marks");
else
{
    double avg = total / n;
    System.out.println("Average : " + avg);

    System.out.println("Maximum mark : " + max);
    System.out.println("Maximum mark name : " + maxName);
}
```