

## 1. Break in a For Loop:

Write a Java program that prints numbers from 1 to 10, but stops when the number 7 is encountered.

```
java
Copy code
public class Main {
    public static void main(String[] args) {
        for (int i = 1; i <= 10; i++) {
            if (i == 7) {
                break; // Breaks the loop when i equals 7
            }
            System.out.println(i);
        }
    }
}
```

### Output:

```
Copy code
1
2
3
4
5
6
```

### Explanation:

The loop prints the numbers from 1 to 6. When it reaches 7, the `break` statement is executed, causing the loop to terminate.

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## 2. Continue in a For Loop:

Write a Java program that prints numbers from 1 to 10, but skips printing the number 5.

```
java
Copy code
public class Main {
    public static void main(String[] args) {
        for (int i = 1; i <= 10; i++) {
            if (i == 5) {
                continue; // Skips the current iteration when i equals 5
            }
            System.out.println(i);
        }
    }
}
```

## Output:

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```
1
2
3
4
6
7
8
9
10
```

## Explanation:

The loop prints all numbers except 5. When `i == 5`, the `continue` statement causes the loop to skip the current iteration, so 5 is not printed.

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## 3. Break in a While Loop:

Write a Java program that counts from 1 upwards, but stops when the count reaches 100.

java

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```
public class Main {
    public static void main(String[] args) {
        int i = 1;
        while (true) {
            System.out.println(i);
            if (i == 100) {
                break; // Stops the loop when i equals 100
            }
            i++;
        }
    }
}
```

## Output:

python

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```
1
2
3
...
100
```

## Explanation:

This is an infinite `while(true)` loop. However, the `break` statement terminates the loop once the count reaches 100.

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#### 4. Continue in a While Loop:

Write a Java program that prints even numbers between 1 and 20, skipping all odd numbers.

```
java
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public class Main {
    public static void main(String[] args) {
        int i = 1;
        while (i <= 20) {
            i++;
            if (i % 2 != 0) {
                continue; // Skips odd numbers
            }
            System.out.println(i);
        }
    }
}
```

#### Output:

```
Copy code
2
4
6
8
10
12
14
16
18
20
```

#### Explanation:

The loop increments `i` from 1 to 20, but when it encounters an odd number, the `continue` statement skips the rest of the iteration, so only even numbers are printed.