

Java Cheat Sheet

Basic Syntax

```
public class Main {  
    public static void main(String[] args) {  
        System.out.println("Hello, World!");  
    }  
}
```

Data Types

```
int x = 10;  
  
double d = 5.5;  
  
boolean b = true;  
  
char c = 'A';  
  
String s = "Hi";
```

Control Statements

If-Else:

```
if (x > 0) {  
    // do something  
} else {  
    // do something else  
}
```

Switch:

```
switch (x) {  
    case 1: System.out.println("One"); break;  
    default: System.out.println("Other");  
}
```

Loops:

```
for (int i = 0; i < 5; i++) { }
```

```
while (x < 10) { x++; }
```

```
do { x++; } while (x < 10);
```

Arrays

```
int[] nums = {1, 2, 3};
```

```
String[] names = new String[5];
```

Methods

```
public static int add(int a, int b) {
```

```
    return a + b;
```

```
}
```

OOP Concepts

Class & Object:

```
class Car {
```

```
    String color;
```

```
void drive() {  
    System.out.println("Driving...");  
}  
  
}  
  
Car c = new Car();  
c.drive();
```

Inheritance:

```
class Animal {  
    void sound() { System.out.println("Sound"); }  
}  
  
class Dog extends Animal {  
    void bark() { System.out.println("Bark"); }  
}
```

Polymorphism:

```
Animal a = new Dog();  
a.sound();
```

Abstraction (Interface):

```
interface Shape {  
    void draw();  
}  
  
class Circle implements Shape {  
    public void draw() {  
        System.out.println("Drawing Circle");  
    }  
}
```

```
}
```

Encapsulation:

```
class Person {  
    private String name;  
    public void setName(String n) { name = n; }  
    public String getName() { return name; }  
}
```

Exception Handling

```
try {  
    int x = 5 / 0;  
} catch (ArithmeticException e) {  
    System.out.println("Error: " + e.getMessage());  
} finally {  
    System.out.println("Cleanup code");  
}
```

Common Java Libraries

```
import java.util.Scanner;  
import java.util.ArrayList;  
import java.util.HashMap;  
import java.util.Collections;
```

Useful Java Shortcuts

Input: `Scanner sc = new Scanner(System.in);`

Date: `LocalDate.now();`

Sleep: `Thread.sleep(1000);`

Next Steps

- Learn Collections (ArrayList, HashMap, etc.)
- Practice File I/O
- Explore Java 8+ features (Streams, Lambda)
- Learn Spring Boot