Java Programming Cheat Sheet

Header image and title

Java Basics

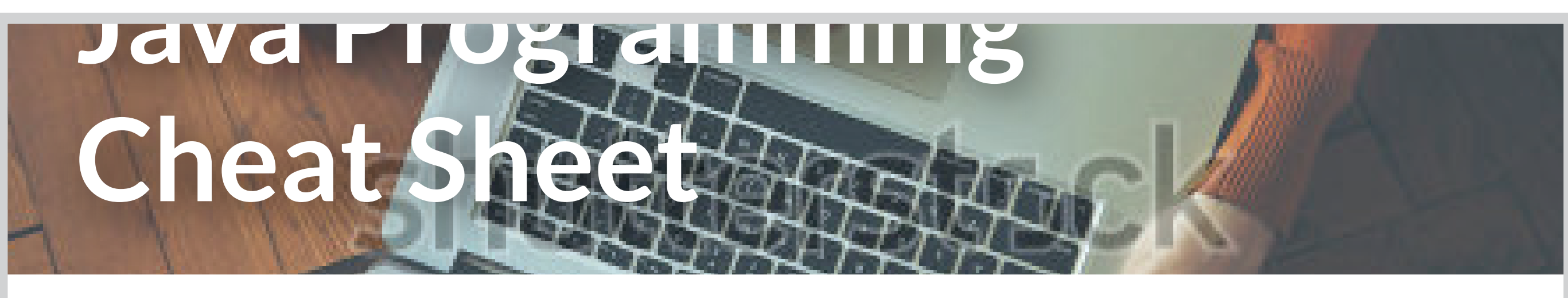
Sections expand when user clicks the plus sign or the header text

+ Built in Data Types
+ Decleration and Assignment Statements
+ Arithmetic Operators
+ Unary Operators
+ Conditional Operators
+ Shortcuts
+ Relational Operators
+ Data Type Conversion
+ if-else Conditional Statements
+ While loops
+ Do While
+ For loop
+ Foundations

97TH FLOOR

Approval Signature
(features, movements and functionality)

DESKTOP VERSION



Java Programming Cheat Sheet

Java Basics

Expanded content for all sections

– Built in Data Types

Type	Set of values	Memory Size
Int	from (-2^31) to (2^31 - 1)	4 bytes
long	from (-2^63) to (2^63 - 1)	8 bytes
short	from (-2^15) to (2^15 - 1)	2 bytes
byte	from (-2^7) to (2^7 - 1)	1 byte
double	±1.79769313486231570E+308 (15 significant decimal digits)	8 bytes
float	±3.40282347E+38F (6-7 significant decimal digits)	4 bytes
boolean	TRUE or FALSE	1 bit
char	from 0 to 2^16 (Unicode characters)	2 bytes

– Decleration and Assignment Statements

Decleration: Declares the data type

declares r as an integer

int r;

Assignment: Assigns a new value to the variable

example:

r = 100;

– Arithmetic Operators

Operators	Operations
+	Additive operator (also used for String concatenation)
-	Subtraction operator
*	Multiplication operator
/	Division operator
%	Remainder operator (Only for integers)

– Unary Operators

Definition: the unary operator applies to the value, variable or expression.

Operators	Operations
+	Unary plus operator; indicates positive value
-	Unary minus operator; negates an expression
++	Increment operator; (By 1)
--	Decrement operator; (By 1)
!	Inverts the value of a boolean

– Conditional Operators

Definition: Primitive data type that has two possible values, true or false.

Operators	Operations
&&	Conditional AND
||	Conditional OR
(condition)?(expr1):(expr2)	Ternary (shorthand for if-then-else statement)

– Shortcuts

Definition: An operator that apply the right-hand expression to the left-hand value and assigns the result to the left-hand variable.

Operators	Operations
+=	Add and assign
-=	Subtract and assign
*=	Multiply and assign
/=	Divide and assign
%=	Remind and assign
&=	Apply bitwise AND and assign (only integers)
|=	Apply bitwise OR and assign (only integers)
^=	Apply bitwise XOR and assign (only integers)
++	Increment
--	Decrement

– Relational Operators

Definition: An operator that compares two operands and determines whether one is less than, less than or equal to, greater than, or greater than or equal to each other.

Operators	Operations
>	Greater than
>=	Greater than or equal to
<	Less than
<=	Less than or equal to
==	Equal to
!=	Not equal to
instanceof	Checks whether object is instance of class or not

Operators	Operations
~	Unary bitwise complement (Bitwise NOT)
<<	Signed left shift of bits
>>	Signed right shift of bits
&	Bitwise AND
^	Bitwise exclusive OR
|	Bitwise inclusive OR

– Data Type Conversion

Definition: Converts one data type to another data type. There are two types of data conversion: Widening or Narrowing.

Examples of Widening Conversion:

char can be converted to → int, float, double
int can be converted to → float, double
float can be converted to → double

Definition: Converts one data type to another data type. There are two types of data conversion: Widening or Narrowing.

Examples of Narrowing Conversion
(note: All narrowing conversions are not done implicitly by JVM and require explicit casting)

int can be converted to → char
long can be converted to → char
float can be converted to → char, int, long
double can be converted to → char, int, long, float

– if-else Conditional Statements

Definition: A basic control statement that allows you to execute sections of code only if a test is true.

Example of IF statement:

```
if (condition) {
        execute this statement
}
```

if-else statement: Executes the first set of statements if the condition is true, otherwise the second set of statements will be executed.

Example of If-Else Statement:

```
if (condition) {
        execute statements if condition is true
    } else {
        execute statements if condition is false
    }
```

– While loops

Definition: A loop that tests a condition and executes the loop for as long as that condition is true.

Example:

```
while (termination) {
        execute statements
}
```

– Do While

Do while loops are similar to while loops. A do while loop will always execute the code in the while loop at least once even if the condition is not true.

Example:

```
do {
execute statement
    } while (termination)
```

– For loop

The For Loop will execute the loop for as long as the condition is true.

Example 1:

```
for (initialization; termination; increment) {
    execute statements
    }
```

Example 2:

```
for (Variable initialization : iterable object or array) {
    execute statements
    }
```

– Foundations

Anatomy	Definition
Object	Class Object is the root of the class hierarchy. Every class has Object as a superclass. All objects, including arrays, implement the methods of this class.
Class	Class is templates that are used to create objects, and to define object data types and methods. Core properties include the data types and methods that may be used by the object.
Function	A function is a body of code that returns a value. The value returned may depend on arguments provided to the function.

97TH FLOOR

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MOBILE
VERSION

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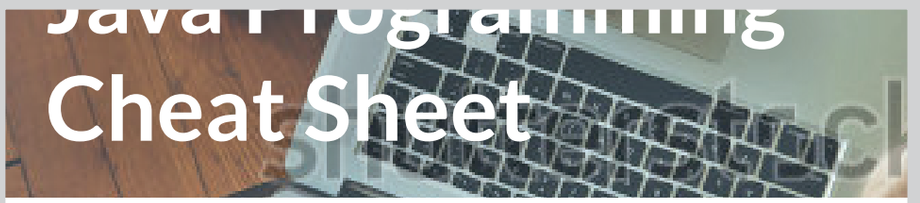

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