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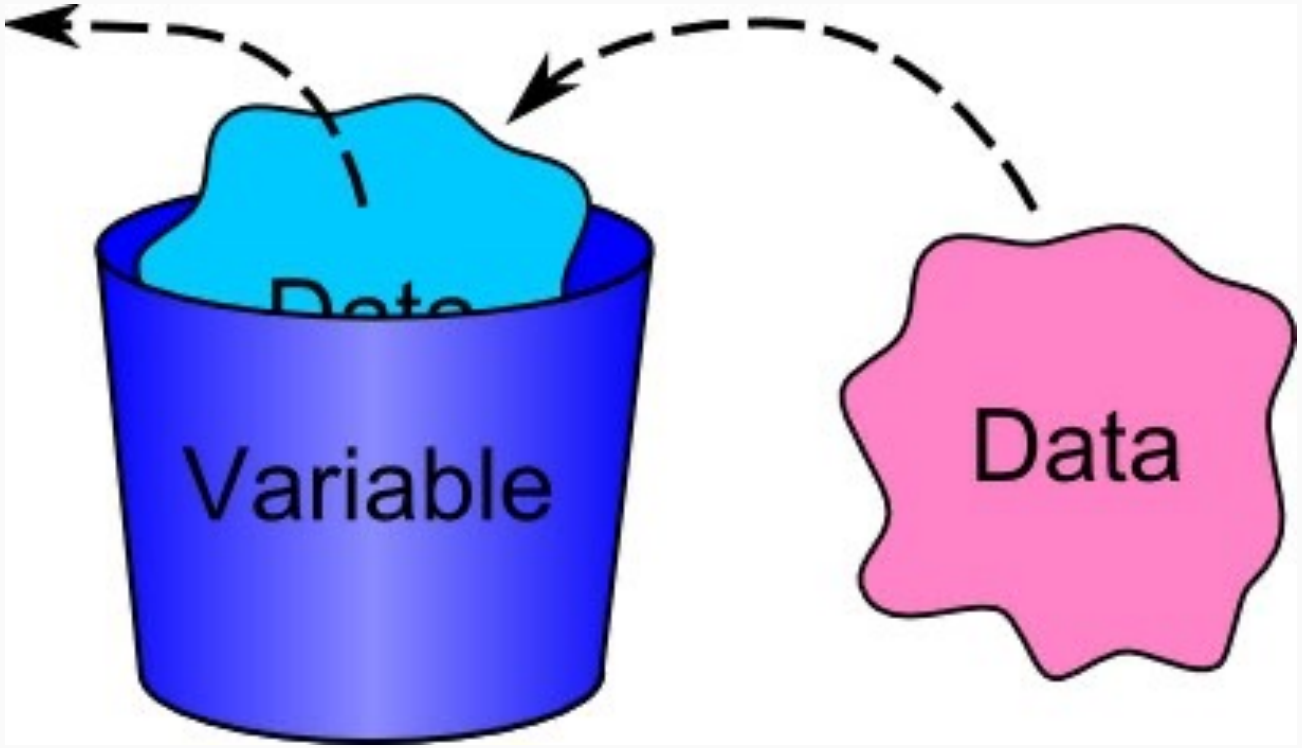
Variables

Variables



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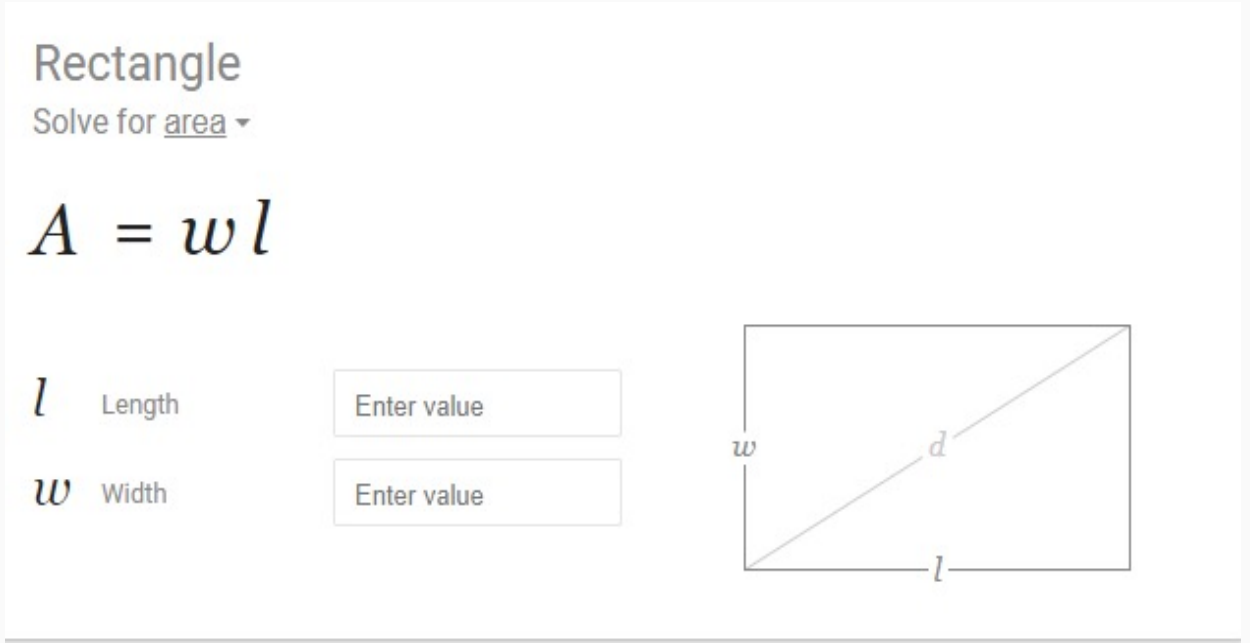
Calculate the area of rectangle

Steps:

- Remember the value of length
- Remember the value of width
- Multiply length by width to get the area
- Return the result to the user



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Variables

- Variables are containers for storing data values
- Improves the reusability of the data
- The value stored in a variable can be changed during program execution
- Variables must be declared before use

```
DataType VariableName = Data;
```

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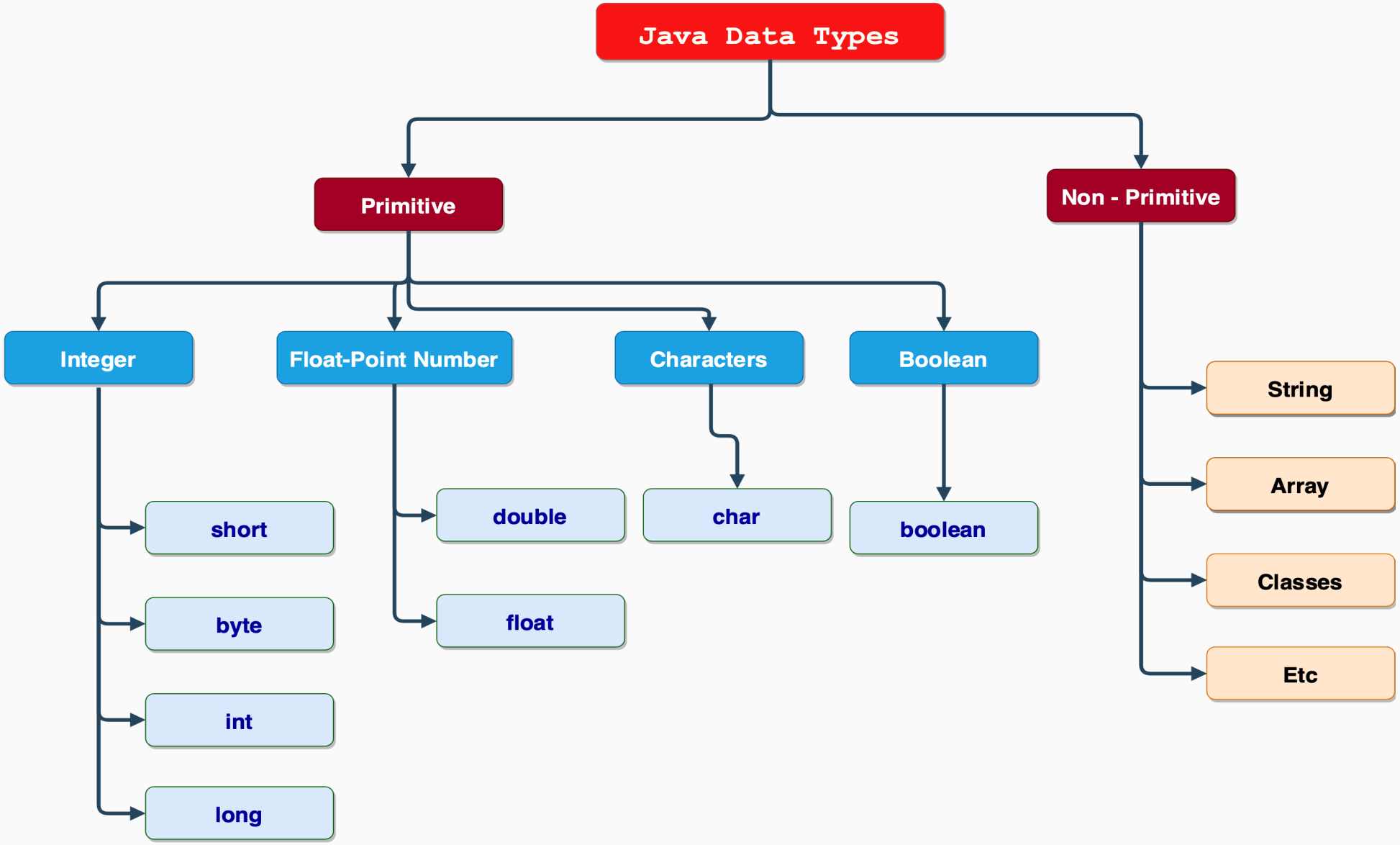
Data Types In Java



Primitive Data Types

Type Name	Kind of Value	Memory Used	Range of Values
`byte`	Integer	1 byte	–128 to 127
`short`	Integer	2 bytes	–32,768 to 32,767
`int`	Integer	4 bytes	–2,147,483,648 to 2,147,483,647
`long`	Integer	8 bytes	–9,223,372,036,8547,75,808 to 9,223,372,036,854,775,807
`float`	Floating-point	4 bytes	$\pm 3.40282347 \times 10^{+38}$ to $\pm 1.40239846 \times 10^{-45}$
`double`	Floating-point	8 bytes	$\pm 1.7976931348623157 \times 10^{+308}$ to $\pm 4.9406564584124654 \times 10^{-324}$
`char`	Single character (Unicode)	2 bytes	All Unicode values from 0 to 65,535
`boolean`		1 bit	True or false

Example of Variable Declarations

```
byte inches;

int speed;

short month;

float salesCommisions;

double distance;
```

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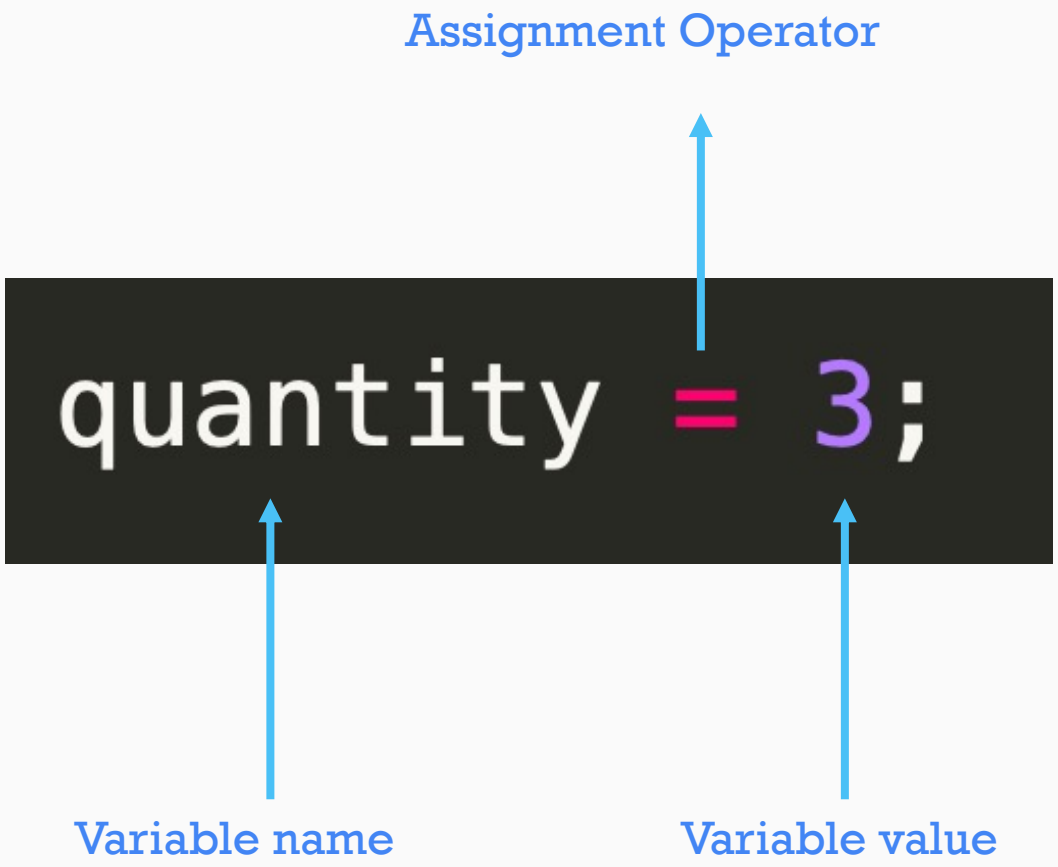
How to ASSIGN value to a variable



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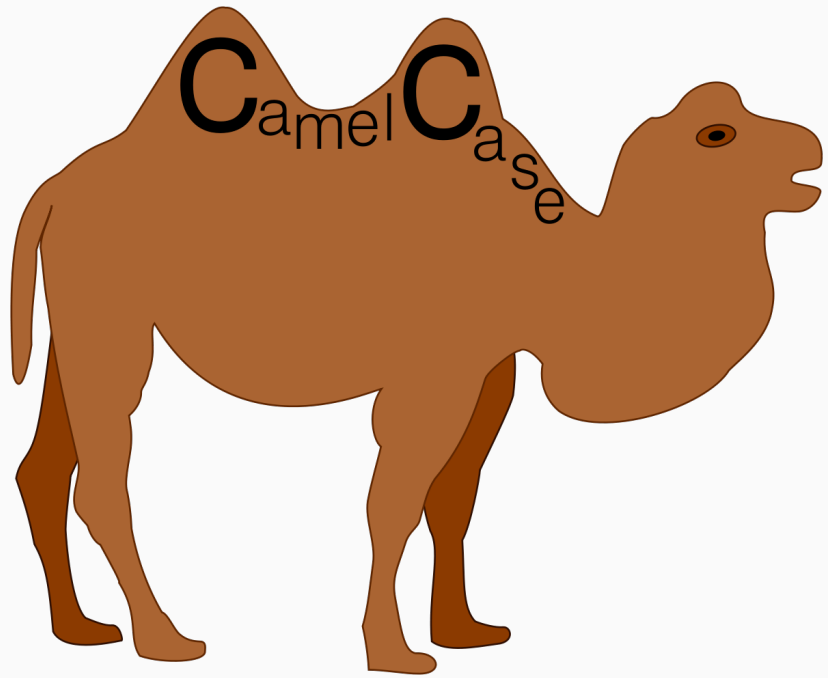
Rules for Variable names

- Variables names should be readable
- When variable names contain two or more words, use camel case




```
int itemsOrdered;

String firstName;

String lastName;

long cardNumber;
```

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Rules for Variable names

- The first character must be one of the letters a - z or A - Z, an underscore (_), or a dollar sign ($)
- After the first character, you may use letters a - z or A - Z, the digits, underscore (_) or dollar sign ($)
- Can Not include spaces

```
double myVar;
int myVar1
long $myVar;
char _myVar;
short my20thBirthday$;
byte ageOfThe_Employer100;
```

Valid Examples

```
byte 1myVar
short *myVar1;
int ageOfThe@Employer100;
long my20Th Birthday$;
```

Invalid Example

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Rules for Variable names

- Variable names can not be Java reserved word

abstract	do	if	private	this
assert	double	implements	protected	throw
boolean	else	import	public	throws
break	enum	instanceof	return	transient
byte	extends	int	short	true
case	false	interface	static	try
catch	final	long	strictfp	void
char	finally	native	super	volatile
class	float	new	switch	while
const	for	null	synchronized	continue
default	goto	package		

String

- String is a sequence of characters, surrounded by double quote (“”)

```
String greeting;

greeting="Hello World";
```

```
String name = "Wooden Spoon";
```

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