

Datatypes – Casting and Converting



Occasionally the Developer will need to change variables to different datatypes, this is called *Casting* ... Not all datatypes will cast into other datatypes, for example a boolean value will not cast into or cannot be cast from, the following slide is a representation of datatypes and their casting with other datatypes.

The basic syntax of casting is as follows, the receiving variable is on the left, the datatype of the receiving variable is in brackets and the value or variable which is to be cast is on the extreme right ...

```
receivingvar = (char)castingvar;
```

This is called an explicit cast, however some datatypes will 'cast' implicitly by just using an equals sign ...

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	boolean	byte	char	double	float	int	long	short	String
boolean		✍	✍	✍	✍	✍	✍	✍	✍
byte	✍		(✍)	✍	✍	(✍)	✍	(✍)	✍
char	✍	(✍)		(✍)	(✍)	(✍)	(✍)	(✍)	✍
double	✍	✍	(✍)		✍	✍	✍	✍	✍
float	✍	✍	(✍)	✍		✍	✍	✍	✍
int	✍	(✍)	(✍)	✍	✍		(✍)	(✍)	✍
long	✍	✍	(✍)	✍	✍	(✍)		✍	✍
short	✍	(✍)	(✍)	✍	✍	(✍)	✍		✍
String	✍	✍	✍	✍	✍	✍	✍	✍	

Ticks in brackets mean that the casting must take place explicitly, casting datatypes without brackets isn't necessary but not a compilation error.

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This is an example of casting a int from a byte ...

```
byte b = 12;  
int i = 0;  
i = (int)b;
```

When casting from int to char, an ascii conversion takes place, and vice versa int to ascii character ..

```
char c;  
int ci = 65;  
c = (char)ci;  
System.out.println(ci);
```

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Casting from a boolean or to a boolean isn't possible and given it only has two states it doesn't take much to program around the problem, if the states need to be saved in a different datatype, not being able to cast from or to a String could be a problem, however a series of methods have been supplied which get round this problem.

The method is called *String.valueOf* and it will convert any of the mentioned datatypes into a String (even booleans !) and in addition will convert arrays of chars (these will be covered later in the Course).