

# Creating constants

The “final” keyword is a modifier that can be used when declaring variables to prevent any subsequent changes to the values that are initially assigned to them. This is useful when storing a fixed value in a program to avoid it becoming altered accidentally.

Variables created to store fixed values in this way are known as “constants” and it is convention to name constants with all uppercase characters – to distinguish them from regular variables. Programs that attempt to change a constant value will not compile and the **javac** compiler will generate an error message.

Follow these steps to create a Java program featuring constants:



Constants.java

1 Start a new program named “Constants” containing the standard main method

```
class Constants
{
    public static void main ( String[] args ) {
    }
}
```

2 Between the curly brackets of the main method, insert this code to create and initialize three integer constants

```
final int TOUCHDOWN = 6 ;
final int CONVERSION = 1 ;
final int FIELDGOAL = 3 ;
```

3 Now declare four regular integer variables

```
int td , pat , fg , total ;
```

4 Initialize the regular variables – using multiples of the constant values

```
td = 4 * TOUCHDOWN ;
pat = 3 * CONVERSION ;
fg = 2 * FIELDGOAL ;
total = ( td + pat + fg ) ;
```

5 Add this line to display the total score

```
System.out.println( "Score: " + total ) ;
```

6 Save the program as **Constants.java** then compile and run the program to see the output, Score: 33  
( 4 x 6 = 24, 3 x 1 = 3, 2 x 3 = 6, so 24 + 3 + 6 = 33 ).

## Hot tip



The \* asterisk character is used here to multiply the constant values, and parentheses surround their addition for clarity.