

1. Look through the String source code
2. **[OPTIONAL]** Read chapter #15 about Strings of 'Java: The Complete Reference - Herbert Schildt'
3. Learn format specifiers and flags for string formatting. Link to official oracle docs - <https://docs.oracle.com/javase/8/docs/api/java/util/Formatter.html>

Conversion	Argument Category	Description
'b', 'B'	general	If the argument <i>arg</i> is null, then the result is "false". If <i>arg</i> is a boolean or Boolean, then the result is the string returned by <code>String.valueOf(arg)</code> . Otherwise, the result is "true".
'h', 'H'	general	If the argument <i>arg</i> is null, then the result is "null". Otherwise, the result is obtained by invoking <code>Integer.toHexString(arg.hashCode())</code> .
's', 'S'	general	If the argument <i>arg</i> is null, then the result is "null". If <i>arg</i> implements <code>Formattable</code> , then <code>arg.formatTo</code> is invoked. Otherwise, the result is obtained by invoking <code>arg.toString()</code> .
'c', 'C'	character	The result is a Unicode character
'd'	integral	The result is formatted as a decimal integer
'o'	integral	The result is formatted as an octal integer
'x', 'X'	integral	The result is formatted as a hexadecimal integer
'e', 'E'	floating point	The result is formatted as a decimal number in computerized scientific notation
'f'	floating point	The result is formatted as a decimal number
'g', 'G'	floating point	The result is formatted using computerized scientific notation or decimal format, depending on the precision and the value after rounding.
'a', 'A'	floating point	The result is formatted as a hexadecimal floating-point number with a significand and an exponent. This conversion is <b>not</b> supported for the <code>BigDecimal</code> type despite the latter's being in the <i>floating point</i> argument category.
't', 'T'	date/time	Prefix for date and time conversion characters. See Date/Time Conversions.
'%'	percent	The result is a literal '%' ('\u0025')
'n'	line separator	The result is the platform-specific line separator

## Flags

The following table summarizes the supported flags. y means the flag is supported for the indicated argument types.

Flag	General	Character	Integral	Floating Point	Date/Time	Description
'L'	y	y	y	y	y	The result will be left-justified.
'#'	y <sup>1</sup>	-	y <sup>3</sup>	y	-	The result should use a conversion-dependent alternate form
'+'	-	-	y <sup>4</sup>	y	-	The result will always include a sign
' '	-	-	y <sup>4</sup>	y	-	The result will include a leading space for positive values
'0'	-	-	y	y	-	The result will be zero-padded
','	-	-	y <sup>2</sup>	y <sup>5</sup>	-	The result will include locale-specific grouping separators
('	-	-	y <sup>4</sup>	y <sup>5</sup>	-	The result will enclose negative numbers in parentheses

<sup>1</sup> Depends on the definition of `Formattable`.

<sup>2</sup> For 'd' conversion only.

<sup>3</sup> For 'o', 'x', and 'X' conversions only.

<sup>4</sup> For 'd', 'o', 'x', and 'X' conversions applied to `BigInteger` or 'd' applied to `byte`, `Byte`, `short`, `Short`, `int` and `Integer`, `long`, and `Long`.

<sup>5</sup> For 'e', 'E', 'f', 'g', and 'G' conversions only.

Any characters not explicitly defined as flags are illegal and are reserved for future extensions.

4. Look through the source code of formatting examples  
[https://github.com/AndriiPiatakha/learnit\\_java\\_core/blob/master/src/com/itbulls/learnit/javacore/string/FormatterDemo.java](https://github.com/AndriiPiatakha/learnit_java_core/blob/master/src/com/itbulls/learnit/javacore/string/FormatterDemo.java)
5. Implement console program which meet the following requirements:

- a. Program starts and prints Math.PI five times in console output
  - b. The first Math.PI contains only one fraction digit
  - c. The second Math.PI contains two fraction digits
  - d. The third time Math.PI contains three fraction digits
  - e. The fourth time Math.PI contains four fraction digits
  - f. The fifth time Math.PI contains five fraction digits
6. Learn regular expressions with this service: <https://regexone.com/>  
Complete 15 lessons. Take hints and look solutions if needed.
7. Use this online tool to practice your skills in regular expressions - <https://regex101.com/>
8. Implement console program which meet the following requirements:
  - a. Program starts and asks user to input any text
  - b. Program prints array of words entered by user without any spaces or punctuation marks