Character	Function	Example
literal characters	Directly matches characters	<ul><li>"cat"</li><li>"cat"</li><li>"dog" (no match)</li></ul>
\d	Matches a digit from 0 to 9	<ul> <li>"\d"</li> <li>"A" (no match)</li> <li>"_" (no match)</li> <li>"!" (no match)</li> <li>" " (no match)</li> </ul>
\D	Matches a non-digit	<ul> <li>"\D"</li> <li>"1" (no match)</li> <li>"A"</li> <li>"-"</li> <li>"!"</li> <li>""</li> </ul>
\w	Matches a word character (letter, digit, or underscore)	<ul> <li>"1"</li> <li>"A"</li> <li>"-"</li> <li>"!" (no match)</li> <li>" " (no match)</li> </ul>

\W	Matches any non-word character	<ul> <li>"\W"</li> <li>"1" (no match)</li> <li>"A" (no match)</li> <li>"_" (no match)</li> <li>"!"</li> <li>""</li> </ul>
\\s	Matches any whitespace character, such as spaces and tabs	<ul> <li>"1" (no match)</li> <li>"A" (no match)</li> <li>"_" (no match)</li> <li>"!" (no match)</li> <li>""</li> </ul>
\\S	Matches any non- whitespace character	<ul> <li>"1"</li> <li>"A"</li> <li>""</li> <li>"!"</li> <li>" (no match)</li> </ul>
[ ]	Character Set  Matches any characters inside the brackets. Can specify ranges of characters as well.	<ul><li>"[A-C]"</li><li>"A"</li><li>"B"</li><li>"C"</li><li>"D" (no match)</li></ul>

• "E" (no match)

[^ ]	Negative Character Set  Matches anything <i>not</i> inside the brackets	<ul> <li>"[^C-E]"</li> <li>"A"</li> <li>"B"</li> <li>"C" (no match)</li> <li>"D" (no match)</li> <li>"E" (no match)</li> </ul>
	Wildcard  Matches any character (except a newline)	• "1" • "A" • "A" • "!" • "!"
*	Matches 0 or more times	"ca*t"
+	Matches 1 or more times	"ca+t"  • "ct"  • "cat"

8.3.9: Write Regular Expressions: Bootcamp: UT-MCC-VIRT-DATA-PT-08-2021-U-B-MW		
	• "caat"	
	• "caaat"	
	• "caaaat"	
	"ca?t"	
	• "ct"	
	• "cat"	
Matches 0 or 1 time	• "caat"	
	• "caaat"	
	• "caaaat"	
	(   (2)	
	"ca{2}t"	
	• "ct"	
	• "cat"	
Matches a specific number of times	• "caat"	
	• "caaat"	
	• "caaaat"	
	"ca{2,}t"	
	• "ct"	
Matches at least a	• "cat"	
specific number of times	• "caat"	
	• "caaat"	
	• "caaaat"	

[{#,#}]

**[**{**#**,}]

{#}

Matches within a specific

"ca{2,3}t"

</code>

	range of times	<ul><li> "ct"</li><li> "cat"</li><li> "caat"</li><li> "caaat"</li><li> "caaaat"</li></ul>
	Alternation  Matches either the expression before or the expression after	"cat dog"  • "cat"  • "dog"  • "bird"
^	Start of the string	<ul> <li>"cat"</li> <li>"catsup"</li> <li>"concatenate" (no match)</li> <li>"kitty-cat" (no match)</li> </ul>
\$	End of the string	<ul> <li>"cat\$"</li> <li>"catsup" (no match)</li> <li>"concatenate" (no match)</li> <li>"kitty-cat"</li> </ul>

**Escape Character** 

"\\$"

( ... )

Escapes the next character to be treated as a literal character

• "\$"

## **Capture Group**

Identifies matches that should be extracted

 $ig( "c(\mathsf{at})" ig)$ 

- "cat" ("at" is captured)
- "bat" (no match)

## **Non-Capturing Group**

Identifies matches that should not be extracted

"c(?:at)"

- "cat" ("c" is captured)
- "bat" (no match)

## Negative Lookahead Group

Identifies expressions that negate earlier matches

"cat(?! burglar)"

- "cat"
- "cats"
- "cat burglar" (no match)

(?! ... )

(?: ...)