7. REGEX USES

Natural Language Processing (NLP)

Introduction
Natural Language Processing (NLP) focuses on enabling computers to understand language by analysing the structure of sentences and tagging different words.

Traditional Parts of Speech
The term "parts of speech" is used to describe the role that each word plays in a sentence. We'll have a look at a few of these parts of speech, and we'll see how they can be used to help analyse the structure of a sample sentence.

- *Noun*: A word to describe people, places, or things.

Sample Sentence	"*The **cat** sat on the **mat***."
Tagged words	"*The* [**NOUN**] *sat on the* [**NOUN**]."

- *Verb*: A word to describe an action.

Sample Sentence	"*The cat **sat** on the mat*."
Tagged words	"*The* [**NOUN**] [**VERB**] *on the* [**NOUN**]."

- *Preposition*: A word to describe the relationship between two nouns.

Sample Sentence	"*The cat sat **on** the mat*."
Tagged words	"*The* [**NOUN**] [**VERB**] [**PREPOSITION**] *the* [**NOUN**]."

Natural Language Processing
We have almost all of the words in our sample sentence categorised, so for the rest of them, we can use two additional structures from Natural Language Processing.

- *Noun Phrase*: A group of words that function as a noun, it can include a Main Noun, Adjectives, Determiners, and Modifiers.

Sample Sentence	"***The cat** sat on **the mat***."
Tagged words	"[**NOUN PHRASE**] [**VERB**] [**PREPOSITION**] [**NOUN PHRASE**]."

- *Verb Phrase*: A group of words that function as a verb, it can include a Main Verb, Adverbs, Prepositions, Direct Objects, and Indirect Objects.

Sample Sentence	"*The cat **sat on** the mat*."
Tagged words	"[**NOUN PHRASE**] [**VERB PHRASE**] [**NOUN PHRASE**]."

Once the structure is defined, Regular Expressions can be used to help analyse it.