

# Regular Expressions: Takeaways

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## Syntax

- To start using regex, use the `re` module.

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## WILDCARDS

- To indicate that *any* character can be put in its place:

```
strings = ["bat", "robotics", "megabyte"]
regex = "b.t"
```

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## BEGINNINGS AND ENDINGS OF STRINGS

- To match all strings that start with `"a"`, use `"^a"`.
- To match all strings that end with `"a"`, use `"a$"`.

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## COUNTING MATCHES WITHIN THE DATASET

- To check whether "needle" is a match for "haystack".
  - Input:

```
if re.search("needle", "haystack") is not None:
    print("We found it!")
else:
    print("Not a match")
```

- Output:

```
Not a match
```

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## MATCHING MULTIPLE CHARACTERS

- To match multiple characters, specify the characters between "[ ]":

```
~"[bcr]at"~
```

- This expression would match "bat", "cat", and "rat".

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## ESCAPING SPECIAL CHARACTERS

- To escape a character use "\":

```
for row in posts:
    if re.search("\[Serious\]", row[0]) is not None:
        serious_count += 1
```

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## COMBINING REGEX CHARACTERS

- Checking if our code has either "[Serious]" or "[serious]":

```
serious_count = 0
for row in posts:
    if re.search("[[Ss]erious]", row[0]) is not None:
        serious_count += 1
```

- To match either one character or another, use "|":

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## ADDITIONAL REGEX

- To substitute strings, use `sub()`:

```
re.sub("yo", "hello", "yo world")
```

- To match years, use:

```
"[1-2][0-9][0-9][0-9]"
```

- To repeat characters, use "{ }". To repeat the pattern "[0-9]" four times:

```
~"[0-9]{4}"~
```

## Concepts

- A **regular expression** (regex) is a sequence of characters that describes a search pattern. We can use regular expressions to search for and extract data.
- In regular expressions, escaping a character means indicating that you don't want the character to do anything special
  - The `re` module provides a `sub()` function that takes the following parameters (in order):
    - `pattern` : The regex to match
    - `repl` : The string that should replace the substring matches
    - `string` : The string containing the pattern we want to search

## Resources

- [Python Documentation on re](#)
- [Python Documentation on re.search](#)

