In [1]:
```
import re

def contains_only_allowed_characters(input_string):
    pattern = re.compile(r'^[a-zA-Z0-9]+$')
    return bool(pattern.match(input_string)
test_string = "Hello123"
result = contains_only_allowed_characters(test_string)

if result:
    print(f'The string "{test_string}" contains only allowed characters.
else:
    print(f'The string "{test_string}" contains characters other than a-
```

```
The string "Hello123" contains only allowed characters.
```

In [2]:
```
import re

pattern = re.compile(r'ab*')

test_strings = ["a", "ab", "abb", "abbb", "ac", "abc"]

for test_string in test_strings:
    if pattern.match(test_string):
        print(f'The string "{test_string}" matches the pattern.')
    else:
        print(f'The string "{test_string}" does not match the pattern.')
```

```
The string "a" matches the pattern.
The string "ab" matches the pattern.
The string "abb" matches the pattern.
The string "abbb" matches the pattern.
The string "ac" matches the pattern.
The string "abc" matches the pattern.
```

In [3]:
```
import re

pattern = re.compile(r'ab+')

test_strings = ["a", "ab", "abb", "abbb", "ac", "abc"]

for test_string in test_strings:
    if pattern.match(test_string):
        print(f'The string "{test_string}" matches the pattern.')
    else:
        print(f'The string "{test_string}" does not match the pattern.')
```

```
The string "a" does not match the pattern.
The string "ab" matches the pattern.
The string "abb" matches the pattern.
The string "abbb" matches the pattern.
The string "ac" does not match the pattern.
The string "abc" matches the pattern.
```

In [5]:
```
import re

pattern = re.compile(r'ab{3}')
```

In [ ]:
```

```

In [ ]:
```
import re
def text_match(text):
        patterns = 'ab{3}?'
        if re.search(patterns,  text):
                return 'Found a match!'
        else:
                return('Not matched!')

print(text_match("abbb"))
print(text_match("aabbbbbc"))
```

In [ ]:
```
import re

pattern = re.compile(r'a.*b$')

def is_match(input_string):
    return bool(pattern.match(input_string))

test_strings = ["acb", "a123b", "axb", "abc", "ab"]
for test_string in test_strings:
    print(f'{test_string}: {is_match(test_string)}')
```

In [7]:
```
import re

pattern = re.compile(r'^\w+')

def find_first_word(input_string):
    match = pattern.search(input_string)
    return match.group() if match else None
test_strings = ["Hello World", "123 numbers", "_underscore", "  leading
for test_string in test_strings:
    result = find_first_word(test_string)
    print(f'Input: "{test_string}", Match: {result}')
```

```
Input: "Hello World", Match: Hello
Input: "123 numbers", Match: 123
Input: "_underscore", Match: _underscore
Input: "  leading space", Match: None
```

In [12]:
```
import re

pattern = re.compile(r'\w+$')

def find_last_word(input_string):
    match = pattern.search(input_string)
    return match.group() if match else None

test_strings = ["Hello World", "123 numbers", "_underscore", "trailing s
for test_string in test_strings:
    result = find_last_word(test_string)
    print(f'Input: "{test_string}", Match: {result}')
```

```
Input: "Hello World", Match: World
Input: "123 numbers", Match: numbers
Input: "_underscore", Match: _underscore
Input: "trailing space  ", Match: None
```

In [10]:
```
import re

pattern = re.compile(r'\b\d{4}\b')

def find_four_digit_words(input_string):
    matches = pattern.findall(input_string)
    return matches

# Test case
test_string = "01 0132 231875 1458 301 2725"
result = find_four_digit_words(test_string)
print(f'Input: "{test_string}", Matches: {result}')
```

```
Input: "01 0132 231875 1458 301 2725", Matches: ['0132', '1458', '272
5']
```

In [ ]:

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In [ ]: