

Here are **practice problems** for **Java Regular Expressions (Regex)**. These problems will help you **validate, extract, replace, and manipulate strings** using regex in Java.



Basic Regex Problems

1 Validate a Username

- A valid username:
 - Can only contain **letters (a-z, A-Z), numbers (0-9), and underscores (_)**
 - Must start with a letter
 - Must be **between 5 to 15 characters long**

♦ Example Inputs & Outputs

✓ "user_123" → **Valid**

✗ "123user" → **Invalid** (starts with a number)

✗ "us" → **Invalid** (too short)

2 Validate a License Plate Number

- License plate format: **Starts with two uppercase letters, followed by four digits.**
 - Example: "AB1234" is **valid**, but "A12345" is **invalid**.
-

3 Validate a Hex Color Code

- A valid **hex color**:
 - Starts with a **#**

- Followed by **6 hexadecimal characters** (0-9, A-F, a-f).

- ◆ **Example Inputs & Outputs**

✓ "#FFA500" → **Valid**

✓ "#ff4500" → **Valid**

✗ "#123" → **Invalid** (too short)

Extraction Problems

4 Extract All Email Addresses from a Text

- ◆ **Example Text:**

"Contact us at support@example.com and info@company.org"

- ◆ **Expected Output:**

support@example.com

info@company.org

5 Extract All Capitalized Words from a Sentence

- ◆ **Example Text:**

"The Eiffel Tower is in Paris and the Statue of Liberty is in New York."

- ◆ **Expected Output:**

Eiffel, Tower, Paris, Statue, Liberty, New, York

6 Extract Dates in **dd/mm/yyyy** Format

- ♦ **Example Text:**

"The events are scheduled for 12/05/2023, 15/08/2024, and 29/02/2020."

- ♦ **Expected Output:**

12/05/2023, 15/08/2024, 29/02/2020

7 Extract Links from a Web Page

- ♦ **Example Text:**

"Visit <https://www.google.com> and <http://example.org> for more info."

- ♦ **Expected Output:**

<https://www.google.com>, <http://example.org>

Replace and Modify Strings

8 Replace Multiple Spaces with a Single Space

- ♦ **Example Input:**

"This is an example with multiple spaces."

- ♦ **Expected Output:**

"This is an example with multiple spaces."

9 Censor Bad Words in a Sentence

- Given a **list of bad words**, replace them with ****.

♦ **Example Input:**

"This is a damn bad example with some stupid words."

♦ **Expected Output:**

"This is a **** bad example with some **** words."

Advanced Problems

10 Validate an IP Address

- A valid **IPv4** address consists of **four groups of numbers (0-255)** separated by dots.
-

11 Validate a Credit Card Number (Visa, MasterCard, etc.)

- A **Visa** card number starts with **4** and has **16 digits**.
 - A **MasterCard** starts with **5** and has **16 digits**.
-

12 Extract Programming Language Names from a Text

♦ **Example Text:**

"I love Java, Python, and JavaScript, but I haven't tried Go yet."

♦ **Expected Output:**

Java, Python, JavaScript, Go

13 Extract Currency Values from a Text

♦ **Example Text:**

"The price is \$45.99, and the discount is 10.50."

- ♦ **Expected Output:**

\$45.99, 10.50

14 Find Repeating Words in a Sentence

- ♦ **Example Input:**

"This is is a repeated repeated word test."

- ♦ **Expected Output:**

is, repeated

15 Validate a Social Security Number (SSN)

- ♦ **Example Input:**

"My SSN is 123-45-6789."

- ♦ **Expected Output:**

✓ "123-45-6789" is valid

✗ "123456789" is invalid

Here are **practice problems** for **Java Regular Expressions (Regex)**. These problems will help you **validate, extract, replace, and manipulate strings** using regex in Java.

Extraction Problems

4 Extract All Email Addresses from a Text

- ♦ **Example Text:**

"Contact us at support@example.com and info@company.org"

- ♦ **Expected Output:**

support@example.com

info@company.org

5 Extract All Capitalized Words from a Sentence

- ♦ **Example Text:**

"The Eiffel Tower is in Paris and the Statue of Liberty is in New York."

- ♦ **Expected Output:**

Eiffel, Tower, Paris, Statue, Liberty, New, York

6 Extract Dates in dd/mm/yyyy Format

- ♦ **Example Text:**

"The events are scheduled for 12/05/2023, 15/08/2024, and 29/02/2020."

- ♦ **Expected Output:**

12/05/2023, 15/08/2024, 29/02/2020

7 Extract Links from a Web Page

- ♦ **Example Text:**

"Visit <https://www.google.com> and <http://example.org> for more info."

♦ **Expected Output:**

`https://www.google.com, http://example.org`

Replace and Modify Strings

8 Replace Multiple Spaces with a Single Space

♦ **Example Input:**

`"This is an example with multiple spaces."`

♦ **Expected Output:**

`"This is an example with multiple spaces."`

9 Censor Bad Words in a Sentence

- Given a **list of bad words**, replace them with `****`.

♦ **Example Input:**

`"This is a damn bad example with some stupid words."`

♦ **Expected Output:**

`"This is a **** bad example with some **** words."`

Advanced Problems

10 Validate an IP Address

- A valid **IPv4 address** consists of **four groups of numbers (0-255)** separated by dots.
-

11 Validate a Credit Card Number (Visa, MasterCard, etc.)

- A **Visa** card number starts with 4 and has 16 digits.
 - A **MasterCard** starts with 5 and has 16 digits.
-

12 Extract Programming Language Names from a Text

♦ Example Text:

"I love Java, Python, and JavaScript, but I haven't tried Go yet."

♦ Expected Output:

Java, Python, JavaScript, Go

13 Extract Currency Values from a Text

♦ Example Text:

"The price is \$45.99, and the discount is 10.50."

♦ Expected Output:

\$45.99, 10.50

14 Find Repeating Words in a Sentence

♦ Example Input:

"This is is a repeated repeated word test."

♦ Expected Output:

is, repeated

15 Validate a Social Security Number (SSN)

♦ **Example Input:**

"My SSN is 123-45-6789."

♦ **Expected Output:**

✓ "123-45-6789" is valid

✗ "123456789" is invalid

• A valid username:

- Can only contain **letters (a-z, A-Z), numbers (0-9), and underscores (_)**
- Must start with a letter
- Must be **between 5 to 15 characters long**

♦ **Example Inputs & Outputs**

✓ "user_123" → Valid

✗ "123user" → Invalid (starts with a number)

✗ "us" → Invalid (too short)

2 Validate a License Plate Number

- License plate format: **Starts with two uppercase letters, followed by four digits.**
 - Example: "AB1234" is valid, but "A12345" is invalid.
-

3 Validate a Hex Color Code

• A valid **hex color**:

- Starts with a #
- Followed by **6 hexadecimal characters (0-9, A-F, a-f).**

♦ **Example Inputs & Outputs**

✓ "#FFA500" → Valid

✓ "#ff4500" → Valid

✗ "#123" → Invalid (too short)

Extraction Problems

4 Extract All Email Addresses from a Text

- ◆ Example Text:

"Contact us at support@example.com and info@company.org"

- ◆ Expected Output:

support@example.com

info@company.org

5 Extract All Capitalized Words from a Sentence

- ◆ Example Text:

"The Eiffel Tower is in Paris and the Statue of Liberty is in New York."

- ◆ Expected Output:

Eiffel, Tower, Paris, Statue, Liberty, New, York

6 Extract Dates in dd/mm/yyyy Format

- ◆ Example Text:

"The events are scheduled for 12/05/2023, 15/08/2024, and 29/02/2020."

- ◆ Expected Output:

12/05/2023, 15/08/2024, 29/02/2020

7 Extract Links from a Web Page

♦ Example Text:

"Visit `https://www.google.com` and `http://example.org` for more info."

♦ Expected Output:

`https://www.google.com, http://example.org`

Replace and Modify Strings

8 Replace Multiple Spaces with a Single Space

♦ Example Input:

"This is an example with multiple spaces."

♦ Expected Output:

"This is an example with multiple spaces."

9 Censor Bad Words in a Sentence

- Given a **list of bad words**, replace them with `****`.

♦ Example Input:

"This is a damn bad example with some stupid words."

♦ Expected Output:

"This is a **** bad example with some **** words."

Advanced Problems

10 Validate an IP Address

- A valid **IPv4 address** consists of **four groups of numbers (0-255) separated by dots**.
-

11 Validate a Credit Card Number (Visa, MasterCard, etc.)

- A **Visa** card number starts with **4** and has **16 digits**.
 - A **MasterCard** starts with **5** and has **16 digits**.
-

12 Extract Programming Language Names from a Text

♦ **Example Text:**

"I love Java, Python, and JavaScript, but I haven't tried Go yet."

♦ **Expected Output:**

Java, Python, JavaScript, Go

13 Extract Currency Values from a Text

♦ **Example Text:**

"The price is \$45.99, and the discount is 10.50."

♦ **Expected Output:**

\$45.99, 10.50

14 Find Repeating Words in a Sentence

- ♦ **Example Input:**

"This is is a repeated repeated word test."

- ♦ **Expected Output:**

is, repeated

Validate a Social Security Number (SSN)

- ♦ **Example Input:**

"My SSN is 123-45-6789."

- ♦ **Expected Output:**

✓ "123-45-6789" is valid

✗ "123456789" is invalid
