

# STUDENT PORTFOLIO

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Specialisation: IT  
Semester: V



**Subject title:** 18CSC301T - Formal Language and Automata

Handled by: Mr. Balaji Srikanth P

## **ASSIGNMENTS**

<https://drive.google.com/drive/folders/1fVjMIGrg67XGJdn94Qbh8LNx5E0fzxpe?usp=s>  
[hare link](#)

## **REFERENCES**

1. Neso academy – YouTube

[Theory of Computation & Automata Theory - YouTube](#) (114 videos)

2. Introduction to automata theory, languages and computation – by JOHN E. HOPCROFT, Cornell University, RAJEEV MOTWANI, Stanford University, JEFFREY D. ULLMAN, Stanford University

## **HACKERRANK (REGEX):**

HackerRank ID: as2525

Name: Akshansh Sharma

Challenges solved: 21

## 1. Introduction

PREPARE BY TOPICS

# Regex

43% (20/47 challenges solved)

**Continue Preparation**

HackerRank **PREPARE** NEW CERTIFY COMPETE

Search | | as2525

Prepare > Regex

Points: 295 Rank: 19232

|   |                   |
|---|-------------------|
| Matching Specific String<br><small>Easy, Max Score: 5, Success Rate: 96.23%</small>                       | ★ <b>Solved</b> ✓ |
| Matching Digits & Non-Digit Characters<br><small>Easy, Max Score: 5, Success Rate: 97.34%</small>         | ★ <b>Solved</b> ✓ |
| Matching Whitespace & Non-Whitespace Character<br><small>Easy, Max Score: 5, Success Rate: 98.07%</small> | ★ <b>Solved</b> ✓ |
| Matching Word & Non-Word Character<br><small>Easy, Max Score: 5, Success Rate: 97.74%</small>             | ★ <b>Solved</b> ✓ |
| Matching Start & End<br><small>Easy, Max Score: 5, Success Rate: 97.59%</small>                           | ★ <b>Solved</b> ✓ |

STATUS

☒ Solved  
☐ Unsolved

DIFFICULTY

☐ Easy  
☐ Medium  
☐ Hard

SUBDOMAINS

☒ Introduction  
☐ Character Class  
☐ Repetitions  
☐ Grouping and Capturing  
☐ Backreferences  
☐ Assertions  
☐ Applications

## Matching Specific String ★

Problem

Submissions

Leaderboard

Discussions

Editorial

You made this submission 6 days ago.

Score: 5.00   Status: **Accepted**

People who solved **Matching Specific String** attempted this next:

### Matching Anything But a Newline

Use `[.]` in the regex expression to match anything but a newline character.

**Solve Challenge**

### Submitted Code

Language: Python 3

[Open in editor](#)

```
1 Regex_Pattern = r"hackerrank"    # Do not delete 'r'.
2
3
```

✔ **Test case 0**

Compiler Message

Matching Digits & Non-Digit Characters ★

Points: 295 Rank: 19232

Problem Submissions Leaderboard Discussions Editorial

You made this submission 6 days ago.

Score: 5.00 Status: Accepted

People who solved Matching Digits & Non-Digit Characters attempted this next:

Detect HTML Attributes

Use Regular Expressions to detect HTML Attributes corresponding to various tags.

Solve Challenge

Submitted Code

Language: Python 3

Open in editor

```
1 Regex_Pattern = r"\d{2}\D\d{2}\D\d{4}" # Do not delete 'r'.
2
3
```

NEED HELP?

- View discussions
- View editorial
- View top submissions

Test case 0

# Matching Whitespace & Non-Whitespace Character ★

Problem

Submissions

Leaderboard

Discussions

Editorial

You made this submission 6 days ago.

Score: 5.00    Status: **Accepted**

People who solved Matching Whitespace & Non-Whitespace Character attempted this next:

## Detect HTML Tags

Given N lines of HTML source, print the HTML tags found within it.

Solve Challenge

### Submitted Code

Language: Python 3 [Open in editor](#)

```
1 Regex_Pattern = r"\S{2}\s\S{2}\s\S{2}"      # Do not delete 'r'.
2
3
```

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[View editori](#)

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## Matching Word & Non-Word Character ★

Problem

Submissions

Leaderboard

Discussions

Editorial

You made this submission 6 days ago.

Score: 5.00 Status: **Accepted**

People who solved **Matching Word & Non-Word Character** attempted this next:


### Positive Lookahead

A positive lookahead asserts the regex to match if the regexp ahead is matching.


**Solve Challenge**

### Submitted Code

Language: Python 3

 Open in editor

```
1 Regex_Pattern = r"\w{3}\W\w{10}\W\w{3}"    # Do not delete 'r'.
2
3
```

 **Test case 0**

Compiler Message

ChromeFileEditViewHistoryBookmarksProfilesTabWindowHelp

(6) Subscriptions - YouTubeFMovies | Watch Black AdMatching Start & End | HackerrankSTUDENT PORTFOLIO - akki port - Google Docs

hackerrank.com/challenges/matching-start-end/submissions

HackerRankPREPARENEWCERTIFYCOMPETE

Search

as2525

Prepare > Regex > Introduction > Matching Start & End > Submissions

Matching Start & End★

Points: 295Rank: 19232

ProblemSubmissionsLeaderboardDiscussionsEditorial

| RESULT   | SCORE | LANGUAGE | TIME       |                              |
|----------|-------|----------|------------|------------------------------|
| Accepted | 5.0   | Python 3 | 6 days ago | <a href="#">View Results</a> |

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<1>

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# Matching Start & End ★

Problem | Submissions | Leaderboard | Discussions | Editorial

You made this submission 6 days ago.

Score: 5.00    Status: **Accepted**

People who solved Matching Start & End attempted this next:

## Find A Sub-Word

Use RegEx to count the number of times a sub-word appears in a given set of sentences.

Solve Challenge

### Submitted Code

Language: Python 3 Open in editor

```
1 Regex_Pattern = r"^\d\w{4}\. $"    # Do not delete 'r'.
2
3
```

challenges/find-substring?h\_r=next-challenge&h\_v=legacy



# Matching Specific Characters ★

Problem | Submissions | Leaderboard | Discussions | Editorial

You made this submission 6 days ago.

Score: 10.00    Status: **Accepted**

People who solved **Matching Specific Characters** attempted this next:

## Saying Hi

Use a regex to print all the lines that start with "hi " but are not immediately followed by a 'd' or 'D'.

Solve Challenge

### Submitted Code

Language: Python 3 Open in editor

```
1 Regex_Pattern = r'^[1-3][0-2][xs0][30Aa][xsu][.,]$\n' # Do not delete\n2 'r'.\n3
```

6/ Test cases 0

Prepare > Regex > Character Class > Matching Character Ranges

## Matching Character Ranges ★

Problem

Submissions

Leaderboard

Discussions

Editorial

You made this submission 6 days ago.

Score: 10.00 Status: **Accepted**

People who solved **Matching Character Ranges** attempted this next:

### UK and US: Part 2

Use regular expression to count the number of occurrences of a given word with either \*our\* or \*or\* in it.

Solve Challenge

### Submitted Code

Language: Python 3

Copy

```
1 Regex_Pattern = r'^[a-z][1-9][^a-z][^A-Z][A-Z]' # Do not delete
2
3
```

# Matching {x} Repetitions ★

Problem Submissions Leaderboard | Discussions | Editorial

You made this submission 6 days ago.

Score: 20.00    Status: **Accepted**

People who solved **Matching {x} Repetitions** attempted this next:

## Positive Lookbehind

It asserts the regex to match if regexp behind is matching.

Solve Challenge

### Submitted Code

Language: Python 3 Open in editor

```
1 Regex_Pattern = r'^[a-zA-Z02468]{40}[\s13579]{5}$'    # Do not delete 'r'.
2
3
```

## Matching {x, y} Repetitions ★

Problem

Submissions

Leaderboard

Discussions

Editorial

You made this submission 6 days ago.

Score: 20.00   Status: **Accepted**

People who solved Matching {x, y} Repetitions attempted this next:

### UK and US: Part 2

Use regular expression to count the number of occurrences of a given word with either \*our\* or \*or\* in it.

Solve Challenge

### Submitted Code

Language: Python 3

Open in editor

```
1 Regex_Pattern = r'^\d{1,2}[a-zA-Z]{3,}\.{,3}$'    # Do not delete 'r'.
2
3
```

Test case 0

## Matching Zero Or More Repetitions ★

Problem

Submissions

Leaderboard

Discussions

Editorial

You made this submission 6 days ago.

Score: 20.00 Status: **Accepted**

People who solved Matching Zero Or More Repetitions attempted this next:

### Matching Anything But a Newline

Use `[]` in the regex expression to match anything but a newline character.

Solve Challenge

#### Submitted Code

Language: Python 3

[Open in editor](#)

```
1 Regex_Pattern = r'^[\d]{2,}[a-z]*[A-Z]*$'    # Do not delete 'r'.
2
```

# Matching One Or More Repetitions ★

Problem Submissions Leaderboard | Discussions | Editorial

You made this submission 6 days ago.

Score: 20.00 Status: **Accepted**

People who solved Matching One Or More Repetitions attempted this next:

## Find A Sub-Word

Use RegEx to count the number of times a sub-word appears in a given set of sentences.

Solve Challenge

### Submitted Code

Language: Python 3 [Open in editor](#)

```
1 Regex_Pattern = r'^\d+[A-Z]+[a-z]+$' # Do not delete 'r'.
2
3
```

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## Matching Ending Items ★

Problem

Submissions

Leaderboard

Discussions

Editorial

You made this submission 6 days ago.

Score: 20.00 Status: **Accepted**

People who solved **Matching Ending Items** attempted this next:

### Build a Stack Exchange Scraper

Use Regular Expression to Scrape Questions from Stack Exchange.

Solve Challenge

#### Submitted Code

Language: Python 3

Open in editor

```
1 Regex_Pattern = r'^[a-zA-Z]*e?s$'    # Do not delete 'r'.  
2
```

Test case 0

Compiler Message

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## Matching Word Boundaries ★

Problem

Submissions

Leaderboard

Discussions

Editorial

You made this submission 6 days ago.

Score: 20.00 Status: **Accepted**

People who solved **Matching Word Boundaries** attempted this next:

### IP Address Validation

Validate possible IP Addresses with regex.

**Solve Challenge**

### Submitted Code

Language: Python 3

[Open in editor](#)

```
1 Regex_Pattern = r'\b[aeiouAEIOU][a-zA-Z]*\b'    # Do not delete 'r'.
2
3
```

✓ **Test case 0**

Compiler Message



## Capturing & Non-Capturing Groups ★

Problem

Submissions

Leaderboard

Discussions

Editorial

You made this submission 6 days ago.

Score: 20.00 Status: **Accepted**

People who solved Capturing & Non-Capturing Groups attempted this next:


### Saying Hi

Use a regex to print all the lines that start with "hi " but are not immediately followed by a 'd' or 'D'.

**Solve Challenge**

### Submitted Code

Language: Python 3

 Open in editor

```
1 Regex_Pattern = r'(ok){3,}' # Do not delete 'r'.
2
```

 Test case 0

## Alternative Matching ★

Problem

Submissions

Leaderboard

Discussions

Editorial

You made this submission 6 days ago.

Score: 20.00 Status: **Accepted**

People who solved **Alternative Matching** attempted this next:

### Alien Username

Validate the usernames from an alien planet.

Solve Challenge

### Submitted Code

Language: Python 3

🔗 Open in editor

```
1 Regex_Pattern = r'^(Mr\.|Mrs\.|Ms\.|Dr\.|Er\.)[a-zA-Z]+$' # Do not
  delete 'r'.
```

🟢 Test case 0

Compiler Message

## Matching Same Text Again & Again ★

Pe

Problem

Submissions

Leaderboard

Discussions

Editorial

You made this submission 6 days ago.

Score: 20.00 Status: **Accepted**

People who solved Matching Same Text Again & Again attempted this next:

### Negative Lookbehind

It asserts the regex to match if regexp behind is not matching.

Solve Challenge

### Submitted Code

Language: Python 3

Open in editor

```
1 Regex_Pattern = r'([a-z])(\w)(\s)(\W)(\d)(\D)([A-Z])([A-Za-z])\n\n([aeiouAEIOU])(\S)\1\2\3\4\5\6\7\8\9\10' # Do not delete 'r'.
2
3
```

Test case 0

Compiler Message

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View edit

View top s

# Backreferences To Failed Groups ★

Problem Submissions Leaderboard Discussions Editorial

You made this submission 6 days ago.

Score: 20.00 Status: Accepted

People who solved Backreferences To Failed Groups attempted this next:

## Building a Smart IDE: Programming Language Detection

You are provided with a set of programs in Java, C and Python and you are also told which of the languages each program is in. Now, given a program written in one of these languages, can you identify which of the languages it is written in?

Solve Challenge

### Submitted Code

Language: Python 3 Open in editor

```
2 Regex_Pattern = r"^\d{2}(-?)\d{2}(\1)\d{2}(\1)\d{2}$" # Do not delete
3 'r'.
4
```

Test case 0

Compiler Message

Branch Reset Groups ★

Problem Submissions Leaderboard Discussions Editorial

You made this submission 6 days ago.

Score: 20.00 Status: Accepted

People who solved Branch Reset Groups attempted this next:

Building a Smart IDE: Programming Language Detection

You are provided with a set of programs in Java, C and Python and you are also told which of the languages each program is in. Now, given a program written in one of these languages, can you identify which of the languages it is written in?

Solve Challenge

Submitted Code

Language: PHP

Open in editor

```
2
3
4 $Regex_Pattern = '/^\d\d(?:---)|(-)|(.)|(:))\d\d\1\d\d\1\d\d$/'; //Do
  not delete '/'. Replace _____ with your regex.
5
```

Test case 0

Compiler Message

Success

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## Forward References ★

Problem

Submissions

Leaderboard

Discussions

Editorial

You made this submission 6 days ago.

Score: 20.00    Status: **Accepted**

People who solved **Forward References** attempted this next:

### Detect the Domain Name

Use Regular Expressions to detect domain names from a chunk of HTML Markup provided to you.

**Solve Challenge**

#### Submitted Code

Language: PHP

[Open in editor](#)

```
2
3
4 $Regex_Pattern = '/^(\2tic(?:!tic)|(tac))+$/'; //Do not delete '/'.
   Replace _____ with your regex.
5
6
```

✔ Test case 0

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