Beginner-Level Python Course: re Module (Regular Expressions)

# 1. Course Overview

This beginner-level course introduces Python’s re module, equipping learners with skills to use regular expressions for text parsing, pattern matching, and data validation in real-world scenarios.

# 2. Course Duration

1 Week (5 Days, 1.5 hours per day)

# 3. Learning Objectives

- Understand and construct regular expressions using the re module.  
- Perform search, match, substitution, and validation operations on strings.  
- Recognize practical applications of regular expressions in software development.

# 4. Course Modules

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| Day | Topic | Learning Objectives | Duration | Exercises / Readings |
| Day 1 | Introduction to Regex & re Module | Understand what regular expressions are and why they’re used. Learn about core functions like search, match, findall. | 1.5 hrs | Read Python Docs on re; Ex: Identify digits, vowels |
| Day 2 | Basic Patterns & Meta-characters | Learn patterns using literals, ., ^, $, [], | | 1.5 hrs | Ex: Validate phone numbers, extract simple keywords |
| Day 3 | Repetitions, Groups & Sequences | Understand +, \*, ?, {n}, grouping with (), \d, \w, \s | 1.5 hrs | Ex: Extract emails, group usernames |
| Day 4 | Functions: findall, sub, compile | Explore sub(), compile(), flags (IGNORECASE, MULTILINE) | 1.5 hrs | Ex: Substitute words, clean text |
| Day 5 | Mini Project & Recap | Build a project using multiple re features | 1.5 hrs | Extract hashtags/mentions from text |

# 5. Progression from Basics to Advanced

The course starts with basic string matching concepts and builds up to using advanced patterns, repetitions, and grouping. On the final day, learners apply all concepts to a mini project for reinforcement.

# 6. Suggested Readings

- Python Official Docs: https://docs.python.org/3/library/re.html  
- Regex101.com for pattern testing and visualization  
- Automate the Boring Stuff with Python – Chapter on Regex