

# Regex Lab

## Objectives

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1. In this lab students will practice using regular expressions in Java
2. Upon completing this lab students should be comfortable using regular expressions to match some simple patterns and be able to describe some of the types of patterns that cannot be matched by regular expressions.

## Overview

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Data validation is an important task in computing, sometimes this is accomplished with regular expressions. This lab focuses on a few examples of data validation primarily using regular expressions.

## Unit Test

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You should write unit tests for each of your methods. Your tests should provide valid and invalid input including edge-cases to test for proper behavior.

## Instructions

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Create a class to hold your methods (described below) called `DataValidator` .

### Part I:

Write a method called `isValidUsername` that takes a string and validates it as a user name according to these rules:

- Must have at least 3 characters
- must be lowercase letters only
- Cannot have more than 25 characters

Your method should return `true` if the username is valid, and false otherwise.

### Part II:

Create a new method called `isValidEnhancedUsername` that takes a string and validates

- usernames may contain numbers and the underscore ( `_` ) character
- usernames must start with a letter

### **Part III:**

Write a method that takes a string and returns true if it is a valid IP address. IP addresses consist of four numbers (0-255) separated by dots. Leading zeros are allowed but each number cannot be more than 3 digits long.

### **Part IV:**

Try to write a regex that will match any palindrome. You are finished with this part when you can concisely explain why this is difficult and/or impossible.