



NATIONAL UNIVERSITY OF COMPUTER & EMERGING SCIENCES
FAST - PESHAWAR CAMPUS

Subject: Software Construction and Development Lab (CL-3001)

Instructor: Muhammad Saood Sarwar

Lab Task : 4

1. Password Strength Checker

Question. Write a regular expression that validates a date in the format **DD/MM/YYYY** where:

- The day (DD) is a valid number between 01 and 31.
- The month (MM) is a valid number between 01 and 12.
- The year (YYYY) consists of four digits.

Regex Breakdown:

- **Day (DD):** Should accept any number from 01 to 31. A two-digit number starting with a digit from 0-3 should be validated. Days like 32, 00, or 40 should be considered invalid.
- **Month (MM):** Should accept any number from 01 to 12. It should reject invalid months like 13 or 00.
- **Year (YYYY):** Accept four digits, typically between 1000 and 9999.

Valid Examples:

1. **Input:** 25/12/2023

Output: Valid

- Reason: Day is 25, month is 12, and year is a four-digit number.

2. **Input:** 01/01/2000

Output: Valid

- Reason: Leading zero for both day and month is allowed, and the year is in the correct format.

Invalid Examples:

1. **Input:** 32/12/2023

Output: Invalid

- Reason: Day 32 exceeds the valid range of 1-31.

2. **Input:** 00/10/2022

Output: Invalid

- Reason: Day 00 is not valid (days must be between 01 and 31).

Advanced Considerations:

- To account for months with varying days (e.g., February having 28/29 days, April having 30 days), a more advanced regex can be designed or additional validation logic can be implemented using Python functions to check for valid dates after extracting them using regex.

2. Password Strength Checker

Question: Write a regular expression to check if a password is strong. A strong password must satisfy the following conditions:

1. **At least 8 characters** long.
2. **At least one uppercase letter** (A-Z).
3. **At least one lowercase letter** (a-z).
4. **At least one number** (0-9).
5. **At least one special character**, such as !, @, #, \$, %, etc.

Regex Breakdown:

- **Length:** The total length of the password should be at least 8 characters.
- **Uppercase letter:** Ensure the presence of at least one uppercase letter.
- **Lowercase letter:** Ensure the presence of at least one lowercase letter.
- **Number:** Ensure the presence of at least one digit.
- **Special character:** Ensure the presence of at least one special symbol from a set of allowed characters like !, @, #, etc.

Valid Examples:

1. **Input:** Pa\$\$w0rd123!

Output: Valid

- **Reason:** This password meets all the conditions — it has 8 or more characters, at least one uppercase letter (P), one lowercase letter (a), one number (0), and one special character (\$).

2. **Input:** Hello@2021

Output: Valid

- **Reason:** It has at least 8 characters, an uppercase letter (H), lowercase letters (ello), a number (2021), and a special character (@).

Invalid Examples:

1. **Input:** password123!

Output: Invalid

- **Reason:** There is no uppercase letter. Although it has lowercase letters, numbers, and a special character, it misses the uppercase requirement.

2. **Input:** Pa\$\$word

Output: Invalid

- **Reason:** There is no number in this password. While it has uppercase letters, lowercase letters, and special characters, a digit is required to meet the conditions.