**Regular Expressions :**

Regular expressions (regex or regexp) are powerful tools for pattern matching and string manipulation. Below are examples of regular expressions for common patterns such as email addresses, phone numbers, names, full names, and passwords. Additionally, I'll explain the basic structure of regular expressions, including character classes, metacharacters, and quantifiers.

**Email Address:**

**^[a-zA-Z0-9.\_%+-]+@[a-zA-Z0-9.-]+\.[a-zA-Z]{2,}$**

**Phone Number(us-format)**

**^\d{3}-\d{3}-\d{4}$**

**Name (Assuming alphabetical characters only):**

^[A-Za-z]+$

**Full Name (Assuming alphabetical characters and spaces):**

^[A-Za-z\s]+$

**Password (At least 8 characters, at least one uppercase letter, one lowercase letter, and one digit):**

^(?=.\*[a-z])(?=.\*[A-Z])(?=.\*\d).{8,}$

^: Asserts the start of the string.

$: Asserts the end of the string.

**Character Classes:**

* [a-zA-Z]: Matches any single uppercase or lowercase alphabetical character.
* \d: Matches any digit (equivalent to [0-9]).
* \s: Matches any whitespace character (spaces, tabs, line breaks).

**Metacharacters:**

* +: Matches one or more occurrences of the preceding character or group.
* \*: Matches zero or more occurrences of the preceding character or group.
* ?: Matches zero or one occurrence of the preceding character or group.

**Quantifiers:**

* {n}: Matches exactly n occurrences of the preceding character or group.
* {n,}: Matches n or more occurrences of the preceding character or group.
* {n,m}: Matches between n and m occurrences of the preceding character or group.